

MARYLAND DEPARTMENT OF THE ENVIRONMENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT

PART I. IDENTIFICATION

A. **Permit Number:** 99-DP-3310 MD0068268

B. **Permit Area**

This permit covers stormwater discharges from the municipal separate storm sewer system in Harford County, Maryland. Discharges from the storm drain systems controlled by Harford County that may be subject to future National Pollutant Discharge Elimination System (NPDES) stormwater program requirements may be added to this permit at the discretion of the Maryland Department of the Environment (MDE).

C. **Effective Date:** August 13, 1999

D. **Expiration Date:** August 13, 2004

PART II. STANDARD PERMIT CONDITIONS

A. **Permit Administration**

1. By 11/22/1999, Harford County shall provide MDE with the name, title, address, phone number, and function of all primary administrative and technical personnel responsible for compliance with this permit. An organizational chart including the individuals identified above shall also be submitted and any changes immediately reported to MDE.

B. **Legal Authority**

1. By 11/22/1999, Harford County shall provide MDE with recertification from the County Attorney that it possesses the authority to directly perform the activities described in 40 Code of Federal Regulations (CFR) 122.26(d)(2)(i) and this permit.
2. Harford County shall maintain adequate legal authority, in accordance with NPDES regulations 40 CFR 122.26(d)(2)(i), throughout the term of this permit. In the event that any provision of its legal authority is found to be invalid, the County shall make the necessary changes to maintain adequate legal authority.

C. **Source Identification**

Harford County shall continue to identify sources of pollutants in stormwater runoff and link these sources to specific water quality impacts on a watershed-by-watershed basis. The pollutant source identification specified in the following conditions shall be used to define control measures that effectively improve stormwater quality and develop methodologies for long-term decision making.

1. By 11/22/1999, Harford County shall submit an example of its Geographic Information System (GIS) capabilities that includes the identification of all data layers available and the stage of development and a description of how data are stored, accessed, and used. The example shall include the following information for the Atkisson and Lower Winter's Run subwatersheds:
 - a. Geologic features: topography, soils, steep slopes, etc.;
 - b. Land use: existing and planned based on present zoning or current master plans, public and private ownership, and population density;
 - c. Resources: streams, stream buffer areas, floodplains, wetlands, forests, forest conservation areas, areas of special concern (e.g., endangered species habitat), etc.;
 - d. Infrastructure: storm drain systems including major outfalls, inlets, appurtenant conveyances, and associated drainage areas; stormwater management facilities; sanitary sewer systems within the resource areas identified in Part II.C.1.c. above; and chemical, physical, and biological monitoring sites; and
 - e. Significant discharges: sewage treatment plants, industrial operations, hazardous waste sites, landfills, NPDES permitted sites (both point source and stormwater permittees), impervious areas (e.g., roads, parking lots, and rooftops), known problem areas (e.g., flood prone or water quality impaired areas), and estimated pollutant loads.
2. By 5/24/2000, Harford County shall submit data identifying the extent of its storm drain system. Data shall be submitted on CD-ROM and include all major outfalls, associated inlets, and appurtenant conveyances. Additionally, the County shall delineate the drainage area for all pertinent components of its storm drain system and submit these data with its annual report.
3. Harford County shall compile any new source identification information on a continual basis and summarize the data collection process in its annual reports.
4. Harford County shall submit stormwater management facility construction completion data for MDE's Urban Best Management Practice Database in its annual reports.

D. Discharge Characterization

Harford County shall contribute to Maryland's understanding of stormwater runoff and its effect on water resources by conducting a monitoring program. This program shall consist of three elements. The first element shall consist of characterizing stormwater discharges from both a storm sewer outfall draining a specific land use and an associated in-stream station using chemical, biological, and physical monitoring techniques. Data collected as a result of this effort will be compiled with data from other NPDES jurisdictions for assessing statewide urban runoff. For the second element, Harford County shall use physical stream monitoring to assess the implementation of the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE. The final element of Harford County's monitoring program shall involve annual submissions that document the County's monitoring activities. Specific monitoring requirements for these elements are described below.

1. Annually, Harford County shall perform long-term discharge characterization monitoring of an outfall and an associated in-stream monitoring station using the following minimum requirements for chemical, biological, and physical monitoring:
 - a. For Chemical Monitoring:
 - i. Monitoring shall be performed in the Winter's Run watershed at a residential outfall and an associated in-stream station to characterize runoff from residential land use;
 - ii. Continuous flow measurements shall be recorded at the in-stream monitoring station. These or calibrated watershed model data shall be used to facilitate annual and seasonal pollutant load estimates;
 - iii. Twelve (12) storm events shall be monitored per year at the outfall and in-stream monitoring locations with at least three (3) occurring per quarter. Quarters shall be based on calendar year. If extended dry weather periods occur, baseflow samples shall be taken at least once per month at the in-stream monitoring station and, if flow is observed, at the outfall;
 - iv. Discrete samples of stormwater flow shall be collected at the outfall and in-stream monitoring stations using automated or manual sampling methods. Measurements of pH and water temperature shall be taken; and
 - v. At least three (3) samples determined to be representative of each storm event shall be submitted to a laboratory for analysis according to the methods listed under 40 CFR Part 136 and event mean concentrations (EMCs) shall be developed for the following parameters:

Biochemical Oxygen Demand (BOD ₅)	Total Cadmium
Total Kjeldahl Nitrogen (TKN)	Nitrate plus Nitrite
Total Petroleum Hydrocarbons (TPH)	Total Phosphorus
Total Copper	Total Phenols
Total Zinc	Fecal Coliform
Total Lead	Oil and Grease*
Total Suspended Solids (TSS)	(* Optional)

- b. For Biological Monitoring:
- i. Monitoring shall commence with chemical monitoring; and
 - ii. The stream reach between the outfall and the in-stream station shall be monitored each Spring and Fall using the U.S. Environmental Protection Agency's (EPA) Rapid Bioassessment Protocol III or other method approved by MDE.
- c. For Physical Stream Assessment:
- i. A geomorphologic stream assessment shall be conducted between the outfall and in-stream monitoring station. This assessment shall include, at a minimum, an annual comparison of permanently monumented stream channel cross-sections, an annual comparison of the stream profile, and a stream habitat assessment using techniques as defined by EPA's "Rapid Bioassessment Protocol for use in Streams and Rivers," or other similar method approved by MDE; and
 - ii. A hydrologic and/or hydraulic model shall be used (e.g., TR-20, HEC-2, HEC-RAS, HSPF, SWMM, etc.) to analyze the effects of rainfall; discharge rates; stage; and, if necessary, continuous flow on channel geometry.
2. Harford County shall evaluate the effectiveness of a stormwater management system constructed in accordance with the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE for stream channel protection effectiveness. The assessment shall include:
- a. By 5/24/2000, a small watershed shall be selected to adequately assess the best management practice (BMP) design criteria found in the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE. The watershed selected shall be either an area where future development is to occur, where existing BMPs control a majority of the drainage area and can be retrofitted to reflect the design manual design criteria, or a combination of both. The selection of the small watershed to be monitored shall be made in consultation with MDE.

- b. Within six months of MDE's approval of the selected watershed to be monitored, Harford County shall survey the stream for the purposes of evaluating channel stability in conjunction with ensuing development or significant retrofitting. Permanently monumented cross-sections shall be established at areas where stream geometry changes and at critical areas in the flow path (e.g., restrictions, etc.). A baseline stream profile shall also be established to assess aggradation and degradation.
 - c. In each annual report, Harford County shall provide MDE with a comparison survey for each established cross-section and a comparison survey of the stream profile.
 - d. A hydrologic and/or hydraulic model shall be used (e.g., TR-20, HEC-2, HEC-RAS, HSPF, SWMM, etc.) to analyze the effects of rainfall; discharge rates; stage; and, if necessary, continuous flow on channel geometry.
3. Annually, Harford County shall describe in detail its monitoring activities for the previous year and include the following:
- a. A detailed description of weather conditions and any equipment failures;
 - b. A detailed description of field data collection methods and documentation of any variations to the minimum requirements for chemical, biological, or physical monitoring;
 - c. Chemical, biological, and physical monitoring results recorded on MDE's long-term monitoring databases;
 - d. An analysis of monitoring data integrating the field results from the chemical, biological, and physical monitoring;
 - e. Annual and seasonal pollutant load estimates using the long-term monitoring data;
 - f. A comparison survey for each established cross-section and a comparison survey of the stream profile for the monitoring conducted to assess the stream channel protection effectiveness of a stormwater management system constructed in accordance with the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE; and
 - g. Any requests and accompanying justifications for proposed modifications to the monitoring program.

E. Management Programs

The following management programs shall be implemented in all areas served by the Harford County municipal separate storm sewer system. These jurisdiction-wide programs are designed to control stormwater discharges to the maximum extent practicable and shall be maintained for the term of this permit such that they become part of the routine operation of Harford County. Harford County shall address any needed program improvements identified as a result of periodic evaluation by MDE and annual self-assessment.

1. Harford County shall maintain an acceptable stormwater management program in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland. At a minimum, Harford County shall:
 - a. Conduct preventative maintenance inspections of all stormwater management facilities at least on a triennial basis. Documentation identifying the facilities inspected, the number of maintenance inspections, follow-up inspections, and enforcement action(s) used to facilitate inspection order compliance, maintenance inspection schedules, and any other relevant information shall be submitted in the County's annual reports;
 - b. Within one year of Code of Maryland Regulations (COMAR) promulgation for stormwater management, modify its existing ordinances, regulations, and administrative procedures to accommodate the implementation of the *Maryland Stormwater Design Manual*;
 - c. Implement the stormwater management design policies, principles, methods, and practices found in the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE immediately upon satisfying Part II.E.1.b. above;
 - d. Track the progress toward satisfying Part II.E.1.c. above; and
 - e. Report annually the modifications needed to address problems associated with implementing the *Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE in Harford County.
2. Harford County shall maintain its illicit connection detection and elimination program. At a minimum, Harford County shall:
 - a. Ensure that all discharges to the municipal separate storm sewer that are not composed entirely of stormwater are either permitted by MDE or eliminated;

- b. Annually, field screen at least 200 outfalls. Each outfall having a discharge or suspected of having an illicit discharge shall be sampled using a chemical test kit;
 - c. Report annually the results of field screening activities on MDE's illicit connection detection database. The following shall be included: the number of illegal storm drain connections, the results of investigations made, any enforcement used, the disposition of all illegal storm drain system connections found as a result of this portion of Harford County's stormwater management program, and an updated list of targeted outfalls and an inspection schedule; and
 - d. Identify all County-owned facilities requiring an NPDES discharge permit and submit documentation that a permit has been obtained for each facility. The implementation status of pollution prevention plans for these County-owned facilities shall also be submitted with the County's annual reports.
3. Harford County shall maintain the implementation of its existing program to respond to illegal dumping and spills including procedures for public reporting and citizen complaints.
 4. Harford County shall maintain an acceptable erosion and sediment control program in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland. At a minimum, Harford County shall:
 - a. Address needed program improvements identified during MDE's evaluation of Harford County's application for the delegation of erosion and sediment control enforcement authority;
 - b. At least three times per year, conduct "responsible personnel" certification classes to educate construction site operators regarding erosion and sediment control compliance. Program activity shall be recorded on MDE's "green card" database and submitted with the Harford County annual report; and
 - c. Beginning 11/22/1999, report quarterly, information regarding earth disturbances exceeding one acre or more. Data submitted as a result of this permit condition shall include site name, site owner and address, disturbed area, local grading permit number, site location, and the type of development (e.g., residential, commercial, etc.). The information shall be submitted on diskette to MDE's Compliance Program and be specific to the permitting activity for the three months preceding the submittal.

5. Harford County shall implement and maintain a public education and outreach program to reduce stormwater pollutants. Public outreach and education efforts are to be integrated with the discharge characterization monitoring, watershed restoration, illicit connection detection, and stormwater and sediment control program implementation requirements of this permit. These efforts are to be documented and summarized in the County's annual reports. Harford County shall:
 - a. Provide information regarding the following water quality issues to the general public:
 - i. Water conservation;
 - ii. Stormwater management facility maintenance;
 - iii. Erosion and sediment control;
 - iv. Lawn care and landscape management (e.g., the proper use of herbicides, pesticides, and fertilizers, ice and snow control, cash for clippers, etc.);
 - v. Household hazardous waste;
 - vi. Litter control, recycling, and composting;
 - vii. Car care, mass transit, and alternative transportation;
 - viii. Private well and septic system management;
 - ix. Pet waste management; and
 - x. Procedures for public identification and reporting of illicit discharges.
 - b. Provide information when requested regarding the following water quality issues to the regulated community:
 - i. NPDES permitting requirements;
 - ii. Pollution prevention plan development;
 - iii. Proper housekeeping; and
 - iv. Spill prevention and response.
6. Harford County shall implement and maintain its program to reduce pollutants associated with road maintenance activities. At a minimum, Harford County shall:
 - a. Sweep streets;
 - b. Clean inlets;
 - c. Reduce the use of pesticides, herbicides, fertilizers, and other pollutants associated with roadside vegetative management practices through the use of integrated pest management; and

- d. Control the overuse of winter weather deicing materials through continual testing and improvement of materials and effective decision making.

F. **Watershed Restoration**

Harford County shall begin the systematic assessment of water quality within all of its watersheds. Additionally, the conditions established below require Harford County to prioritize watersheds, select an area to be restored, perform detailed water quality analyses, identify water quality improvement opportunities, and implement a plan to control stormwater discharges to the maximum extent practicable. The overall goal of the activities listed below is to maximize the water quality in a single watershed using efforts that are definable and the effects of which are measurable. Watershed restoration shall be targeted in those areas of Harford County where opportunities to improve water quality are significant and where prior restoration efforts have been insufficient to meet goals established by the County. Harford County shall perform the following:

1. Within 12 months of the issuance of this permit, data gathered as a result of prior NPDES activities shall be used to prioritize all watersheds within Harford County in the context of water quality. The methods and scale used to prioritize watersheds shall be determined by Harford County but must include, at a minimum, documented water quality problems and the ability to address them. In Harford County's first annual report, the results of this prioritization shall be provided and shall include the methods and scale used as well as the watershed rankings for all land area in the County.
2. Within 12 months of the issuance of this permit, Harford County shall select a watershed, or a combination of watersheds, to be restored. The selection of the watershed to be restored shall be based upon Harford County's ability to monitor the progress of all those activities identified in PART II.F.3. below to improve water quality. At least one of the following options for watershed selection shall be used:
 - a. A combination of the drainage area above the in-stream monitoring station identified in PART II.D. above and additional contiguous areas equaling ten percent of Harford County's impervious area;
 - b. A watershed or combination of watersheds equaling ten percent of Harford County's impervious area where surrogate parameters can be used to determine progress toward watershed restoration; or
 - c. A combination of PART II.F.2.a. and PART II.F.2.b. above equaling ten percent of Harford County's impervious area.

3. Within 18 months of the issuance of this permit, Harford County shall complete and submit for MDE approval a detailed assessment of the watershed or combination of watersheds selected in PART II.F.2. above. At a minimum, the assessment shall:
 - a. Determine current water quality conditions;
 - b. Identify and rank water quality problems;
 - c. Identify all structural and non-structural water quality improvement opportunities;
 - d. Include the results of a visual watershed inspection;
 - e. Specify how the restoration efforts will be monitored; and
 - f. Provide an estimated cost and a detailed implementation schedule for those improvement opportunities identified in PART II.F.3.c. above.

After completing the assessment of its selected watershed, Harford County shall submit a detailed watershed assessment for an additional watershed equaling ten percent impervious area to MDE by the end of this permit term.

4. Within 18 months of the issuance of this permit, Harford County shall begin to implement restoration efforts according to the schedule outlined in PART II.F.3.f. above. Annual reports shall document:
 - a. The progress toward meeting the schedule identified in PART II.F.3.f. above;
 - b. The estimated cost and the actual expenditures for program implementation; and
 - c. The monitoring data or surrogate parameter analyses used to determine water quality improvements.

G. Program Funding

1. By 11/22/1999, Harford County shall submit a fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with all conditions of this permit.
2. Harford County shall maintain adequate program funding to comply with all conditions of this permit.

H. Assessment of Controls

1. Annually, Harford County shall submit estimates of expected pollutant load reductions as a result of its proposed management programs.

PART III. SPECIAL PROGRAMMATIC CONDITIONS

Since the signing of the Chesapeake Bay Agreement in 1983, Maryland has been working toward meeting the goal of reducing by 40% the discharge of nutrients to the Chesapeake Bay by the year 2000. To achieve this nutrient goal, Maryland has developed strategies to improve the water quality in the tributaries that drain to the Bay. In Maryland, the Bay watershed has been subdivided into ten major tributaries that have each been assigned a 40% nutrient reduction goal. Characterizations of specific tributaries have been made in terms of land use, nutrient loads, and water quality. Additionally, strategy options have been developed based on identified problems in order to guide the restoration effort in each individual tributary.

Harford County lies within the Upper Western Shore, one of the Chesapeake Bay's ten major tributaries. This NPDES permit requires Harford County to assist with the implementation of the strategy designed to meet the nutrient reduction goals of the Upper Western Shore tributary. Coordination between and among other jurisdictions is a major requirement and any deadlines, priorities, and scheduling to satisfy specific conditions will be determined in conjunction with MDE.

PART IV. ANNUAL PROGRESS REPORTS

Annual progress reports required under 40 CFR 122.42(c) will facilitate the long-term assessment of Harford County's NPDES stormwater program. These reports shall include:

§122.42(c) "(1) The status of implementing the components of the storm water management program that are established as permit conditions;"

§122.42(c) "(2) Proposed changes to the storm water management programs that are established as permit conditions...;"

§122.42(c) "(3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application...;"

§122.42(c) "(4) A summary of data, including monitoring data, that is accumulated throughout the reporting year;"

§122.42(c) "(5) Annual expenditures and budget for year following each annual report;"

§122.42(c) "(6) A summary describing the number and nature of enforcement actions, inspections, and public education programs;"

§122.42(c) "(7) Identification of water quality improvements or degradation;"

MDE has developed databases (Appendix 1) for the reporting and tracking of NPDES information. These databases list components of Harford County's NPDES stormwater program along with appropriate reporting parameters. Annual progress reports, including MDE's databases, shall be submitted to MDE by the anniversary date of permit issuance for each year of the permit term.

PART V. ENFORCEMENT AND PENALTIES

A. Program Review

In order to assess the effectiveness of the permittee's NPDES program for eliminating non-stormwater discharges and reducing the discharge of pollutants to the maximum extent possible, MDE will review program implementation, annual reports, and periodic data submittal on an annual basis. Procedures for the review of local erosion and sediment control and stormwater management programs exist in Maryland's Sediment Control and Stormwater Management Laws. Additional periodic evaluations will be conducted to determine compliance with permit conditions. Continuation or reissuance of this permit beyond August 13, 2004 will be subject to MDE's review of Harford County's compliance and implementation of the conditions of this permit.

B. Discharge Prohibitions and Receiving Water Limitations

The permittee shall effectively prohibit non-stormwater discharges through its municipal separate storm sewer system. NPDES permitted non-stormwater discharges are exempt from this prohibition. Discharges from the following will not be considered a source of pollutants when properly managed: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated ground water infiltration to separate storm sewers; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensation; irrigation waters; springs; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash water; and fire fighting activities. The discharge of stormwater containing pollutants, which have not been reduced to the maximum extent practicable, is prohibited. The permittee shall not cause the contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of the State, that will render the waters harmful to:

1. Public health, safety, or welfare;
2. Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial use;
3. Livestock, wild animals, or birds; or
4. Fish or other aquatic life.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment.

D. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; permit termination, revocation, or modification; or denial of a permit renewal application. The permittee shall comply at all times with the provisions of the Environment Article, Title 4, Subtitles 1, 2, and 4; Title 7, Subtitle 2; and Title 9, Subtitle 3 of the Annotated Code of Maryland.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

E. Sanctions

1. Penalties Under the CWA - Civil and Criminal

The CWA provides that any person who violates any permit condition is subject to a civil penalty not to exceed \$27,500 per day for each violation. Any person who negligently violates any permit condition is subject to criminal penalties of \$2,750 to \$27,500 per day of violation, or imprisonment of not more than 1 year, or both. Any person who knowingly violates any permit condition is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both.

2. Penalties Under the State's Environment Article - Civil and Criminal

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from civil or criminal responsibilities and/or penalties for noncompliance with Title 4, Title 7, and Title 9 of the Environment Article, Annotated Code of Maryland, or any federal, local, or other State law or regulation.

The Environment Article, §9-342, Annotated Code of Maryland, provides that any person who violates a permit condition is subject to a civil penalty up to \$1,000 for each violation, but not exceeding \$50,000 total. The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who willfully or negligently violates a permit condition is subject to a criminal penalty not exceeding \$25,000 or imprisonment not exceeding 1 year, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who knowingly makes any false statement, representation, or certification in any records or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

F. Permit Revocation and Modification

1. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification or a notification of planned changes or anticipated noncompliance does not stay any permit condition. A permit may be modified by the Department upon written request by the permittee and after notice and opportunity for a public hearing in accordance with and for the reasons set forth in COMAR 26.08.04.10.

After notice and opportunity for a hearing and in accordance with COMAR 26.08.04.10., the Department may modify, suspend, or revoke and reissue this permit in whole or in part during its term for causes including, but not limited, to the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

- c. A change in any condition that requires either a temporary reduction or elimination of the authorized discharge; or
- d. A determination that the permitted discharge poses a threat to human health or welfare or to the environment and can only be regulated to acceptable levels by permit modification or termination.

2. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit; or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

G. Property Rights

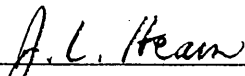
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State, or local law or regulations.

H. Severability

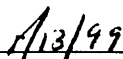
The provisions of this permit are severable. If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this permit to any circumstance is held invalid, its application to other circumstances shall not be affected.

I. Signature of Authorized Administrator and Jurisdiction

All applications, reports, or information submitted to the Department shall be signed as required by COMAR 26.08.04.01-1. As in the case of municipal or other public facilities, signatories shall be a principal executive officer, ranking elected official, or other duly authorized employee.



J. L. Hearn, Director
Water Management Administration



Date



Appendix 1

Annual Report Databases

As part of the NPDES annual reporting process, municipalities are required to complete databases for urban best management practice inventory, chemical monitoring, continuous flow data, illicit discharges, erosion and sediment control responsible personnel training, quarterly grading permit summaries, and stormwater management program activity. Examples of these databases and definitions for each category are provided in the next several pages. For compatibility purposes, databases should be submitted in any one of the following formats: Access, Excel, Quattro Pro, Lotus 1-2-3, or any file with a .dbf extension (e.g., dBase, FoxPro). Preferably, any file in a format other than Access or Excel should be submitted in a ".dbf" format. If there are any questions regarding the compatibility of databases, please contact the Water Management Administration's Nonpoint Source Program at (410) 631-3543.

Urban Best Management Practices (BMP) Database

Field	Field Name	Field Type	Width	Description
1	STRU_NO	Text	4	Unique structure number
2	PERMIT_NO	Text	10	Unique permit number
3	STRU_NAME	Text	60	Structure name
4	ADDRESS	Text	50	Structure address
5	CITY	Text	15	Structure address
6	STATE	Text	2	Structure address
7	ZIP	Text	5	Structure address
8	MD_NORTH	Number	8	Maryland grid coordinate (NAD 83 meters)
9	MD_EAST	Number	8	Maryland grid coordinate (NAD 83 meters)
10	ADC_MAP	Text	5	ADC map book coordinate (optional if 8/9)
11	SBASIN_NO	Text	17	State watershed number
12	STRU_TYPE ¹	Text	10	Structure type
13	LAND_USE ²	Text	3	MOP land use/land cover code (attached)
14	DRAIN_AREA	Number	8	Structure drainage area (acres)
15	TOT_DRAIN	Number	8	Total site drainage area (acres)
16	RCN	Number	8	Runoff curve number (weighted)
17	ON_OFF_SIT	Text	3	On or offsite structure
18	APPR_DATE	Date/Time	8	Permit approval date
19	BUILT_DATE	Date/Time	8	Construction completion date
20	GEN_COMNT	Text	60	General comments
21	LAST_CHANG	Date/Time	8	Date last change made to this record

¹Use Attached Structural Type list

²Use Attached MdOP Land Use Codes

NPDES Construction General Permit Database

Field	Field Name	Field Type	Width	Description
1	SITE_NAME	Text	60	Construction site name
2	SITE_OWNER	Text	60	Construction site owner
3	ADDRESS	Text	50	Construction site address
4	CITY	Text	15	Construction site address
5	MD_NORTH	Number	8	Maryland grid coordinate (NAD 83 meters)
6	MD_EAST	Number	8	Maryland grid coordinate (NAD 83 meters)
7	DIST_AREA	Number	6	Disturbed area of site in acres
8	GRAD_PERM	Text	10	Local grading permit number
9	APPR_DATE	Date/Time	8	Plan approval date
10	LAND_USE ¹	Text	3	MOP land use/land cover code (attached)

¹Use Attached MdOP Land Use Codes

Stormwater Management Structure Codes

Artificial Wetlands – See Shallow Marsh structures

Detention Structure (Dry Pond) – DP

Dry Well – DW

Extended Detention Structure (Two types) – ED

Extended Detention Structure (Dry) – EDSD

Extended Detention Structure (Wet) – EDSW

Infiltration Basin – IB

Infiltration Trench (Three types) – IT

Complete Exfiltration – ITCE

Partial Exfiltration – ITPE

Water Quality Exfiltration – ITWQE

Oil/Grit Separator – OGS

Porous Pavement – PP

Retention Structure (Wet Pond) – WP

Sand Filter – SF

Shallow Marsh – SM

Underground Storage – UGS

Water Quality Inlet – See Oil/Grit Separator

Swale – SW

Other – O (Please document)

1990 & 1994 MdOP Land Use/Land Cover
(Use and document more recent codes if available)

Organization: by County
Source: Maryland Office of Planning
Projection: Stateplane NAD 83
Units: Meters
Spatial Data Type: Polygon

10 Urban Built-up

- **11 Low Density Residential** – Detached single family/duplex dwelling units, yards, and associated areas. Areas of more than 90 percent single family/duplex dwelling units, with lot sizes less than five acres but at least one-half acres (.2 dwelling units/acre to 2 dwelling units/acre).
- **12 Medium Density Residential** – Detached single family/duplex, attached single unit row housing, yards, and associated areas. Areas of more than 90 percent single family/duplex units and attached single unit row housing, with lot sizes of less than one-half acre but at least one-eighth acre (2 dwelling units/acre to 8 dwelling units/acre).
- **13 High Density Residential** – Attached single unit row housing, garden apartments, high rise apartments/condominiums, mobile home and trailer parks. Areas of more than 90 percent high density residential units, with more than 8 dwelling units/acre.
- **14 Commercial** – Retail and wholesale services. Areas used primarily for the sale of products and services, including associated yards and parking areas.
- **15 Industrial** – Manufacturing and industrial parks, including associated warehouses, storage yards, research laboratories, and parking areas.
- **16 Institutional** – Elementary and secondary schools, middle schools, junior and senior high schools, public and private colleges and universities, military installations (built-up areas only, including buildings and storage, training, and similar areas) churches and health facilities, correctional facilities, and government offices and facilities that are clearly separable from the surrounding land cover.
- **17 Extractive** – Surface mining operations, including sand and gravel pits, quarries, coal surface mines, and deep coal mines. Status of activity (active vs. abandoned) is not distinguished.
- **18 Open Urban Land** – Urban areas whose use does not require structures, or urban areas where non-conforming uses characterized by open land have become isolated. Included are golf courses, parks, recreation areas (except associated with schools or other institutions), cemeteries, and entrapped agricultural and undeveloped land within urban areas.
- **191 Large Lot Subdivision (Agriculture)** – Residential subdivisions with lot sizes less than 20 acres but at least 5 acres, with a dominant land cover of open fields or pasture.
- **192 Large Lot Subdivision (Forest)** - Residential subdivisions with lot sizes less than 20 acres but at least 5 acres, with a dominant land cover of deciduous, evergreen or mixed forest.

20 Agriculture

- **21 Cropland** – Field and forage crops

- **22 Pasture** – Land used for pasture, both permanent and rotated: grass.
- **23 Orchards/Vineyards/Horticulture** – Areas of intensively managed commercial bush and tree crops, including areas used for fruit production, vineyards, sod and seed farms, nurseries, and green houses.
- **24 Feeding Operations** – Cattle or hog feeding lots, poultry houses, and holding lots for animals, and commercial fishing areas (including oyster beds).
- **241 Feeding Operations** – Cattle or hog feeding lots, poultry houses, and holding lots for animals.
- **242 Agricultural Building** – Breeding and training facilities, storage facilities, built-up areas associated with a farmstead, small farm ponds, and commercial fishing areas.
- **25 Row and Garden Crops** – Intensively managed track and vegetable farms and associated areas.

40 Forest

- **41 Deciduous Forest** – Forested areas in which the trees characteristically lose their leaves at the end of the growing season. Included are such species as oak, hickory, aspen, sycamore, birch, yellow poplar, elm, maple, and cypress.
- **42 Evergreen Forest** - Forested areas in which the trees are characterized by persistent foliage throughout the year. Included are such species as white pine, pond pine, hemlock, southern white cedar, and red pine.
- **43 Mixed Forest** – Forested areas in which neither deciduous or evergreen species dominate, but in which there is a combination of both types.
- **44 Brush** – Areas that do not produce timber or other wood products but may have cut-over timber stands, abandoned agriculture fields, or pasture. These areas are characterized by vegetation types such as sumac, vines, rose, brambles, and tree seedlings.

50 Water – Rivers, waterways, reservoirs, ponds, bays, estuaries, and ocean.

60 Wetlands – Forested and non-forested wetlands, including tidal flats, tidal and non-tidal marshes, and upland swamps and wet areas.

70 Barren Land

- **71 Beaches** – Extensive shoreline areas of sand and gravel accumulation, with no vegetative cover or other land use.
- **72 Bare Exposed Rock** – Areas of bedrock exposure, scarps, and other natural accumulations of rock without vegetative cover.
- **73 Bare Ground** – Areas of exposed ground caused naturally, by construction, or other cultural processes.

Erosion and Sediment Control Responsible Personnel Training Certification Database

Field	Field Name	Field Type	Width	Description
1	PREFIX	Text	2	MR, MS
2	FIRSTNAME	Text	15	First Name
3	LASTNAME	Text	15	Last Name
4	ADDRESS	Text	50	Full Address
5	CITY	Text	35	City
6	STATE	Text	2	State
7	ZIP	Number	9	Zip Code
8	DATE	Date/Time	8	Date of Class
9	PHONE	Number	10	Phone Number
10	CERTNUM	Number	6	Certification number as provided by MDE
11	COMPANY	Text	30	Employer
12	INSTRUCTOR	Text	20	Instructor's Last Name

Illicit Discharge Database

Field	Field Name	Field Type	Width	Description
1	SCREENDATE	Date/Time	8	Field Screening Date
2	LAST RAIN	Date/Time	8	Last Rain > .10" Date
3	TIME	Date/Time	8	Field Screening Time
4	MD NORTH	Number	8	Maryland Grid Coordinates
5	MD EAST	Number	8	Maryland Grid Coordinates
6	DIM OUTFL	Number	3	Outfall Dimensions in inches
7	TYPE OUTFL	Text	3	Outfall Type
8	OBSERV_FLOW	Logical	1	Was flow observed?
9	CFS FLOW	Number	5	Flow rate in CFS
10	WAT TEMP	Number	5	Water Temperature in Celcius
11	AIR TEMP	Number	3	Air Temperature in Celcius
12	CHEM TEST	Logical	1	Was chemical test performed?
13	PH	Number	3	pH meter reading
14	PHENOL	Number	6	mg/L
15	CHLORINE	Number	6	mg/L
16	DETERGENTS	Number	6	mg/L
17	COPPER	Number	6	mg/L
18	ALGAEGROW	Logical	1	Was algae growth observed?
19	ODOR	Text	2	Type of odor
20	COLOR	Text	2	Discharge color
21	CLARITY	Text	2	Discharge clarity
22	FLOATABLES	Text	2	Floatables in discharge
23	DEPOSITS	Text	2	Deposits in outfall area
24	VEG COND	Text	2	Vegetative condition in outfall area
25	STRUCT COND	Text	2	Structural condition of outfall
26	EROSION	Text	2	Erosion in outfall area
27	LANDUSE ¹	Text	2	Predominant land use draining to outfall
28	DRAIN_AREA	Number	4	Drainage area to outfall

¹Use Attached MdOP Land Use Codes

Illicit Discharge Database Field Codes

19. Odor

None(N)
Sewage (SE)
Sulfur (S)
Oil (IL)
Gas (G)
Rancid-Sour (RS)
Other (O)

20. Color

Clear (C)
Yellow (Y)
Brown (B)
Green (GR)
Red (R)
Gray (G)
Other (O)

21. Clarity

Clear (C)
Opaque (OP)
Cloudy (CD)
Other (O)

22. Floatables

None (N)
Oil Sheen (OS)
Sewage (SE)
Trash (T)
Other (O)

23. Deposits/Stains

None (N)
Sediment (S)
Oil (IL)
Other (O)

24. Vegetative Condition

Normal (N)
Excessive Growth (EG)
Inhibited Growth (IG)
Other (O)

25. Structural Condition

Normal (N)
Concrete Cracking (CC)
Concrete Spalling (SP)
Inhibited Growth (IG)
Other (O)

26. Erosion

None (N)
Moderate (M)
Severe (S)

Chemical Monitoring Site Database

Field	Field Name	Field Type	Width	Description
1	YEAR	Text	4	Annual Report Year
2	STATION	Text	30	Name of station
3	TYPE	Text	10	Outfall or instream station
4	BAY TRIB	Text	30	Chesapeake Bay tributary designation
5	PHYS PROV	Text	30	Maryland physiographic province
6	MD NORTH	Number	10	Maryland grid coordinate (NAD 83 meters)
7	MD EAST	Number	10	Maryland grid coordinate (NAD 83 meters)
8	DRAIN_AREA	Number	8	Drainage area in acres
9	LU1	Text	8	Predominant land use
10	DA LU1	Number	8	Drainage area in acres
11	LU2	Text	8	Second most dominant land use
12	DA LU2	Number	8	Drainage area in acres
13	LU3	Text	8	Third most dominant land use
14	DA LU3	Number	8	Drainage area in acres
15	SWM1 ¹	Text	10	Structural BMP #1 in drainage area
16	SWM_DA1	Number	8	Total acres of drainage area treated by structural BMP #1
17	SWM2 ¹	Text	10	Structural BMP #2 in drainage area
18	SWM_DA2	Number	8	Total acres of drainage area treated by structural BMP #2
19	SWM3 ¹	Text	10	Structural BMP #3 in drainage area
20	SWM_DA3 ²	Number	8	Total acres of drainage area treated by structural BMP #3
21	NON_STRUCT	Text	30	List all non-structural BMPs, such as education, which are being intensely focused in drainage area
22	AREA_NON_STRUCT	Number	8	Total acres of drainage area treated by non-structural BMPs

¹Use Attached Structural Type list

²Create additional SWM fields for additional structures if necessary

Continuous Flow Monitoring

Field	Field Name	Field Type	Width	Description
1	STATION	Text	30	Name of station
2	DATE	Date/Time	8	Date flow measurement taken
3	TIME	Date/Time	8	Time flow measurement taken
4	FLOW	Number	5	Flow rate in cubic feet per second (cfs)

Chemical Monitoring Storm Event Database

Field	Field Name	Field Type	Width	Description
1	DATE	Date	10	Date of storm event
2	TIME	Time	10	Time monitoring begins
3	STA	Text	30	Station name
4	OUT IN	Text	10	Outfall or In-Stream
5	STRM_B	Text	10	Storm or baseflow
6	DEP	Number	5	Depth of rain in inches
7	DUR	Time	10	Duration of event in hours
8	INT	Number	10	Intensity = Depth/Duration
9	WAT_TEMP	Number	5	Flow weighted average of water temperature (Celsius)
10	PH	Number	8	Flow weighted average of pH
11	BOD	Number	8	EMC* for Biological Oxygen Demand in mg/l
12	TKN	Number	8	EMC* for Total Kjeldahl Nitrogen in mg/l
13	NITRATE	Number	8	EMC* for Nitrate + Nitrite in mg/l
14	PHOS_T	Number	8	EMC* for Total Phosphorus in mg/l
15	TSS	Number	8	EMC* for Total Suspended Solids in mg/l
16	CAD TOT	Number	8	EMC* for Total Cadmium in ug/l
17	COP TOT	Number	8	EMC* for Total Copper in ug/l
18	LEAD TOT	Number	8	EMC* for Total Lead in ug/l
19	ZINC TOT	Number	8	EMC* for Total Zinc in ug/l
20	TPH	Number	8	EMC* for Total Petroleum Hydrocarbons in mg/l
21	PHEN TOT	Number	8	EMC* for Total Phenols in ug/l
22	O&G	Number	8	EMC* for Oil and Grease in mg/l
23	FEC COL	Number	8	EMC* for Fecal Coliform in MPN
24	LOC CON1	Number	8	Optional pollutant of local concern
25	LOC CON2	Number	8	Optional pollutant of local concern
26	COMMENTS	Text	50	Monitoring comments/documentation

* EMC = Flow weighted averages for three discrete samples representative of storm.

mg/l = milligrams per liter

ug/l = micrograms per liter

MPN = most probable number per 100 milliliters

Stormwater Programmatic Information

Permit Condition/Year	Year 1	Year 2	Year 3	Year 4	Year 5
GP NUM					
PRJ NUM					
REDEV					
EXEMPT					
QP 10					
QP 2					
CP V					
RED WAV					
H2O QUAL					
FEES NUM					
FEES TOT					
ACRE DV					
ACRE TR					

Stormwater Implementation Information

Criteria/Watershed	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5
POND					
WETLND					
INFILT					
FILTER					
OPEN CH					
OTHER					
NONSTRUCT					
CPV FAC					
QP10 FAC					

Stormwater Management Programmatic Information

Note: The following database field definitions are developed for use with the current (1984) and the proposed (1998 Draft) stormwater management regulations. *Italicized* field names are applicable only under the current (1984) regulations while field names in **bold typeface** should be used after adoption of the proposed regulations. Field names in normal typeface are applicable under both sets of regulations.

Definitions

- 1) **GP_NUM**: Record the total number of grading permits issued by the jurisdiction, regardless of whether stormwater management was required.
- 2) **PRJ_NUM**: Record the total number of new development projects received. A new development project is a proposed development on a specific site or geographic area. There may be multiple points-of-investigation or stormwater management plans for a project. Additionally, a project may be developed in stages or phases. For purposes of classification, please use the following conventions:
 - a) If all plans and computations for the total area of a development site are submitted at the same time (regardless of the number of points-of-investigation or plans), count the submittal as a single project.
 - b) If plans and computations are submitted by section (or phase) of the total development over a period of time, count the submittals as separate projects.
 - c) Plans that are re-submitted as a result of revision or in response to comments should not be considered as a separate project.
- 3) **REDEV**: Record the total number of redevelopment projects received. A redevelopment project means any construction, alteration, or improvement exceeding 5,000 square feet of land disturbance performed on sites where the existing land use is commercial, industrial, institutional, or multifamily residential.
- 4) **EXEMPT**: Record the total number of stormwater exemptions issued. Exempted projects are those that qualify for one or more of the exemptions listed in the jurisdiction's stormwater management ordinance or in the Code of Maryland Regulations (COMAR) pursuant to stormwater management.
- 5) **Waivers**: For any given project, a jurisdiction may receive one or more requests for waiver of stormwater management requirements. In addition, waiver requests may be for quantity controls, quality controls, or both. For a single project, multiple requests for waivers (e.g. overbank flood protection, channel protection) may be received. Count each request for each type of waiver separately, regardless if they are for the same project or plan. Record the total number of waivers requested and the total number of waivers granted for each of the following categories:
 - a) **QP_10**: Overbank flood protection management of the ten-year design storm if required by the jurisdiction;
 - b) **QP_2**: Overbank flood protection management of the two-year design storm;
 - c) **CP_V**: Channel protection storage volume (C_{pV}) (One-year twenty four hour extended detention);

- d) **RED_WAV**: Redevelopment; and
 - e) **H2O_QUAL**: Quality management.
- 6) **FEES_NUM/FEES_TOT**: Record the number of fees-in-lieu approved and the total amount of any funds collected. Fees-in-lieu are distinct from waivers as they are paid in situations where stormwater controls are necessary but may be provided offsite.
- 7) **ACRE_DV/ACRE_TR**: Record the total number of acres of land developed and the total number of acres of land served by stormwater management facilities within the jurisdiction.

Stormwater Management Implementation Information

Note: The following database field definitions are developed for use with the current (1984) and the proposed (1998 Draft) stormwater management regulations. *Italicized* field names are applicable only under the current (1984) regulations while field names in **bold typeface** should be used after adoption of the proposed regulations. Field names in normal typeface are applicable under both sets of regulations.

Definitions

- 1) **POND:** Record the total number of stormwater ponds approved within each watershed. A stormwater pond is a water quality practice that has a combination of a permanent pool, extended detention or shallow marsh equivalent to the water quality volume (WQ_v). Design variants include the micropool extended detention, wet, wet extended detention, multiple, and pocket pond systems.
- 2) **WETLND:** Record the total number of stormwater wetlands approved within each watershed. A stormwater wetland is a water quality practice that creates shallow marsh areas to treat stormwater and may contain small permanent pools or extended detention storage to achieve the full WQ_v. Design variants include the shallow wetland, extended detention shallow wetland, pond/wetland system, and the pocket wetland.
- 3) **INFILT:** Record the total number of infiltration systems approved within each watershed. Infiltration systems are water quality practices that capture and temporarily store the WQ_v while allowing infiltration into the soil. Design variants include the infiltration trench and the infiltration basin.
- 4) **FILTER:** Record the total number of stormwater filtering systems approved within each watershed. Stormwater filters are water quality practices that capture, temporarily store, and pass the WQ_v through a filter bed of sand, organic matter, soil, or other media. Design variants include surface, underground, and perimeter sand filters, organic filters, pocket sand filters, and bioretention systems.
- 5) **OPEN_CH:** Record the total number of stormwater open channel systems approved within each watershed. Open channel systems are vegetated open channels that are explicitly designed to capture and treat the WQ_v within cells formed by check dams or other means. Design variants include the dry swale and the wet swale.
- 6) **OTHER:** Record the total number of structural practices for treatment of stormwater quality that are not listed above. These practices should be capable of meeting the pollutant removal targets as outlined in Chapter 2 of the **Maryland Stormwater Design Manual, Volumes I and II.**
- 7) **NONSTRUCT:** Record the total number of non-structural practices approved within each watershed. Non-structural practices are stormwater runoff treatment techniques that use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by elimination of pollutant sources. There may be multiple uses or implementations of non-structural techniques within a project. For purposes of classification, please use the following conventions:

- a) If a single non-structural technique is implemented over multiple surfaces (e.g. Disconnection of Rooftop Runoff, Buffer Drainage), count the multiple applications as a single system.
 - b) If multiple non-structural practices may be grouped together as a single system (e.g. low impact development, environmentally sensitive development), count the system as a single practice.
 - c) If multiple non-structural practices are implemented, but have distinctly different goals (e.g. Natural Resource Conservation, Grass Channels), count the systems as separate practices.
- 8) **CPV_FAC**: Record the total number of facilities approved for the treatment of the Channel Protection Storage Volume (Cp_v) within each watershed.
- 9) **QP10_FAC**: Record the total number of overbank flood control facilities (Qp_{10}) approved within each watershed.