

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

FACT SHEET

GENERAL PERMIT NCG120000
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE STORMWATER

Permit No. NCG120000

Date: September 4, 2012

1. TYPES OF DISCHARGES COVERED

a. Industrial Activities Covered by this General Permit

Coverage under this general permit is applicable to all owners or operators of stormwater point source discharges associated with activities categorized as landfills, including construction and demolition debris landfills, which are permitted by the North Carolina Division of Waste Management under the provisions and requirements of North Carolina General Statute 130A-294. Coverage is also applicable to point source discharges **from like industrial activities** deemed by the Division of Water Quality (DWQ) to be similar to these operations in the process, or the discharges, or the exposure of raw materials, intermediate products, by-products, products, or waste products.

Except when DWQ deems activities or discharges to be similar as described above, the following activities are **excluded from coverage** under this General Permit: stormwater point source discharges from open dumps, hazardous waste disposal sites, land clearing and inert debris landfills, or discharges of wastes (including discharges of leachate as defined in 15A NCAC 13B .0101(11)).

b. Types of Operations Covered

The principle activity at a landfill is burial of solid wastes. The operations at a landfill can include receiving solid waste, staging, size reduction, separation, placing, compaction, excavation, loading, hauling, filling, covering, leachate management, vehicle maintenance, vehicle fueling, and vehicle and equipment cleaning. Relatively large areas of land may be disturbed by the heavy wheeled and tracked equipment typically involved in the activities.

c. Characteristics of Discharged Stormwater

2012 data commentary: Forty-five permittees reported approximately 1880 pollutant parameter measurements during the 5-year term from 2007 to 2012, for the three monitored parameters: [Chemical Oxygen Demand \(COD\)](#), [Fecal coliform](#), and [Total Suspended Solids \(TSS\)](#). Approximately 32% of the pollutant measurements reported were above the benchmark values. The remaining ~68% of measurements were below the benchmark values. Additionally, the permittees reported “No Flow”

approximately 700 times during the permit cycle. This large value for the permittees' lack of sampling may suggest that the sporadic drought conditions during that 5-year time frame interfered with collecting the required semi-annual samples. A summary tabulation of the reported data is included in **Appendix C**.

d. Geographic Area(s) Covered by this General Permit

Discharges covered by this General Permit are located at any place within the political boundary of the State of North Carolina. Discharges located on the Cherokee Indian Tribal Reservation are subject to permitting by the US Environmental Protection Agency and are not covered by this General Permit.

e. Receiving Waters

Receiving waters include all surface waters of North Carolina or municipal separate storm sewer systems conveying stormwater to surface waters.

2. DISCHARGE CONTROLS AND LIMITATIONS

Most stormwater general permits incorporate two main elements to reduce the discharge of polluted stormwater from industrial facilities: A written management plan with the specific objective of site management action to control polluted discharges (called a Stormwater Pollution Prevention Plan or SPPP), and periodic self-monitoring of the stormwater discharges to flag the discharge of the potential pollutants of concern that may be present at the industrial activity. However, General Permit NCG120000 replaces the SPPP requirement in other stormwater General Permits with the requirements to:

- implement an approved Sedimentation and Erosion Control Plan;
- comply with a landfill permit from the Division of Waste Management; and,
- install and operate secondary containment structures around: bulk storage of liquid materials; water priority chemicals; and hazardous materials.

Requirements for periodic self-monitoring, both analytical and visual, are similar to other stormwater permits, although tailored for the more extreme disturbed earth conditions and large area extent of operations at landfills. The analytical monitoring results are compared to benchmark values for the three parameters, and a tiered structure of management responses is activated when analytical results exceed the benchmark values. Exceedences of benchmark values require the permittee to increase monitoring, increase management actions, increase record keeping, and/or install stormwater BMPs in a tiered program. Four (4) benchmark exceedences trigger notification to the DWQ Regional Office and may prompt additional requirements ("Tier 3"). This general permit first incorporated stormwater benchmarks and tiered responses in the 2007 renewal.

Periodic visual monitoring is more extensive than most other industrial stormwater permits, and is more similar to the construction activities stormwater general permit. The

permit requires visual monitoring every 7 days, and after every rain of 0.5” or greater. There has been no change to the visual monitoring requirements since the 2007 renewal.

3. PROPOSED MONITORING AND REPORTING REQUIREMENTS

The permit specifies monitoring and reporting requirements for both quantitative and qualitative (visual) assessment of the stormwater discharge and operational inspections of the entire facility. Specific pollutant parameters for which sampling must be performed and the frequency of the sampling are based upon the types of materials used, stored, and transferred at these sites and on the potential for contamination of the stormwater runoff at these facilities.

The draft renewal permit proposes specific analytical monitoring requirements for the following parameters: [COD, fecal coliform, and TSS](#). [In addition, qualifying discharges from vehicle maintenance areas will be analyzed for pH, Total Petroleum Hydrocarbons \(TPH\), and TSS](#). The substitution of TPH for the previous Oil & Grease analysis is based on the assessment that TPH is more specific for petroleum hydrocarbons than its predecessor analysis, Oil & Grease. Otherwise there is no change proposed for the monitoring parameters. Those parameters are retained unchanged based in part on data submitted by permittees, but also on the expectation of their continued presence in site runoff and their continued usefulness as stormwater pollution indicators.

The draft permit incorporates a modified definition of what storm event should be sampled. Previous permits required sampling during a “representative storm event.” The proposed NCG120000 permit renewal now requires permittees to sample the “**measurable storm event**,” a new term for North Carolina stormwater permits. The “measurable storm event” is an event that results in an actual discharge, rather than an event with a rainfall measuring 0.1 inches or more. To qualify as a measurable storm event, the previous storm event must have been at least 72 hours prior. Last year the NCG140000 Ready-Mixed Concrete General Permit was the first permit to implement this new storm event definition.

The proposed general permit allows the permittee to forgo sampling if *adverse weather* conditions prevent sample collection (see the **Definitions** section of the draft permit). Inability to sample because of adverse weather conditions must be documented and recorded on the data monitoring forms (DMRs). The proposed draft maintains the requirement to separate semi-annual sampling events by a minimum of 60 days.

As before, the renewal permit specifies qualitative (visual) monitoring of each stormwater outfall for the purpose of evaluating the effectiveness of existing stormwater control measures and assessing new sources of stormwater pollution. Qualitative monitoring parameters include color, odor, clarity, floating and suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

4. COMPLIANCE SCHEDULE

The proposed compliance schedule in Part III, Section A is unchanged from the previous version of the permit. For new facilities, and for existing facilities applying to renew coverage under this permit, all requirements of the permit text are effective upon issuance of the Certificate of Coverage. For existing facilities applying for coverage for the first time, all conditions of the permit are effective immediately upon issuance of the Certificate of Coverage, except that secondary containment requirements must be accomplished within 12 months of the issuance of the Certificate of Coverage.

5. SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

There are no Special Conditions in this General Permit.

6. BASIS FOR CONTROLS AND LIMITATIONS

Stormwater Discharges

The conditions of this general permit have been designed using best professional judgment to achieve water quality protection through compliance with the technology-based standards of the Clean Water Act (Best Available Technology [BAT] and Best Conventional Pollutant Control Technology [BCT]). Where the Director determines that a water quality violation is occurring and water quality-based controls or effluent limitations are required to protect the receiving waters, coverage under the general permit shall be terminated and an individual permit will be required. Based on a consideration of the appropriate factors for BAT and BCT requirements, and a consideration of the factors discussed below in this fact sheet for controlling pollutants in stormwater discharges associated with the activities as described in Item 1 (Types of Discharge Covered), the permit retains a set of requirements for developing and implementing stormwater management elements, and specific requirements for monitoring and reporting on stormwater discharges.

The permit conditions reflect the Environmental Protection Agency’s (EPA) and North Carolina’s pollution prevention approach to stormwater permitting. The quality of the stormwater discharge associated with an industrial activity will depend on the availability of pollutant sources. This renewal permit still reflects the Division’s position that implementation of Best Management Practices (BMPs) and traditional stormwater management practices which control the source of pollutants meets the definition of BAT and BCT. The permit conditions are not numeric effluent limitations, but rather are designed to be flexible requirements for developing and implementing site specific plans to minimize and control pollutants in the stormwater discharges associated with the industrial activity.

Title 40 Code of Federal Regulations (CFR) Part 122.44(k)(2) authorizes the use of BMPs in lieu of numeric effluent limitations in NPDES permits when the agency finds numeric

effluent limitations to be infeasible. The agency may also impose BMP requirements which are "reasonably necessary" to carry out the purposes of the Act under the authority of 40 CFR 122.44(k)(3). The conditions of the renewal permit are retained under the authority of both of these regulatory provisions. The pollution prevention requirements (BMP requirements) in this permit operate as limitations on effluent discharges that reflect the application of BAT/BCT. The basis is that the BMPs identified require the use of source control technologies which, in the context of this general permit, are the best available of the technologies economically achievable (or the equivalent BCT finding).

All facilities covered by this stormwater general permit must fully implement the Sedimentation and Erosion Control Plan received from the Division of Energy, Mineral, and Land Resources or an approved local program pursuant to the requirements of NC G.S. 113A-54.1 and in conformity with the rules adopted by the Sedimentation and Erosion Control Commission.

Covered facilities must also fully implement the permit for a sanitary landfill from the NC Division of Waste Management, pursuant to the requirements of NC G.S. 130A-294 and in conformity with the rules adopted in 15A North Carolina Administrative Code, Subchapter 13B Section .0500. Deviation from the landfill permit, or approved amendment or revision of the landfill permit, shall constitute a violation of the terms and conditions of this general permit. A signed copy of the landfill permit shall be maintained on the site at all times.

The EPA and NPDES States have, on a case-by-case basis, imposed BMP requirements in NPDES permits. The EPA has also continued to review and evaluate case studies involving the use of BMPs and the use of pollution prevention measures associated with spill prevention and containment measures for oil. The development of the NPDES permit application requirements for stormwater discharges associated with industrial activity resulted from the evaluation and identification of the potential contaminants and the resultant water quality impacts of stormwater discharges from industrial sites. Public comments received during the rule making provided additional insight regarding stormwater risk assessment, as well as appropriate pollution prevention and control measures and strategies. During that time EPA again reviewed stormwater control practices and measures. These experiences have shown the Division that pollution prevention measures such as BMPs can be appropriately used and that permits containing BMP requirements can effectively reduce pollutant discharges in a cost-effective manner. BMP requirements are imposed in general permits in lieu of numeric effluent limitations pursuant to 40 CFR 122.44(k)(2).

There has been no significant change to this rationale since the 2007 renewal of General Permit NCG120000.

Stormwater Benchmarks

The proposed **pH benchmark** range of between 6.0 and 9.0 standard units for discharges from vehicle maintenance areas is based on N.C. Water Quality Standards in 15A NCAC 02B .0211 and is consistent with other renewed stormwater general permits.

The **TPH benchmark** of 15 mg/l for discharges from vehicle maintenance areas is consistent with other States' benchmarks and/or limits and reflects a value we would associate only with significant oil contamination. See **Appendices A and B** for more information on TPH. DWQ is replacing O&G with TPH, which can be analyzed cost effectively with the same method used to measure O&G: EPA Method 1664 (SGT-HEM). The permit does not require the more elaborate and typically more expensive TPH analysis with gas chromatography. The basis of this change is that O&G is composed of fatty matter from animal and vegetable sources and hydrocarbons of petroleum origin. Because TPH targets the family of chemical compounds that originally come from crude oil such as gasoline, diesel, kerosene, etc., TPH is more suited for vehicle maintenance activities.

The standard **total suspended solids (TSS) benchmark** of 100 mg/l for discharges from the landfill and from vehicle maintenance areas is based on the median concentration derived from the National Urban Runoff Program (NURP) study in 1983 and serves as a benchmark in most other industrial stormwater permits with TSS monitoring. The lower TSS benchmark for ORW, HQW, trout, and primary nursery area (PNA) waters of 50 mg/l reflects half that standard value and was set to flag potential problems in discharges to waters with much lower water quality standards for TSS concentrations (20 mg/l for HQW and ORW; 10 mg/l for trout and PNA waters).

The **COD benchmark** is set at 120 mg/L, consistent with all other stormwater General Permits employing COD. COD is one measure of the organic pollutants in stormwater, and is generally found at levels three to six times the BOD₅ levels in domestic wastewaters. NC DWQ has selected a multiplier of 4 in comparison to BOD. There has been no change to this benchmark value since the 2007 permit.

The **fecal coliform benchmark** is set at 1000 count per 100ml. The N.C. Water Quality Standard (for all Class C waters, based on human health) establishes that fecal coliforms shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five consecutive samples examined during any 30-day period, nor exceed 400/100ml in more than 20 percent of the samples examined during such period. The SPU does not consider these in-stream values practical for a stormwater benchmark.

7. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

There are no requested variances or alternatives to required standards. Facilities requesting variances to required standards will not be covered under this General Permit but will instead be required to seek coverage under an individual permit.

8. THE ADMINISTRATIVE RECORD

The administrative record, including application, draft permit, fact sheet, public notice, comments received, and additional information is available by writing to:

Stormwater Permitting Unit
 Division of Water Quality
 1617 Mail Service Center
 Raleigh, North Carolina 27699-1617

The above documents are available for review and copying at:

Archdale Building
 9th Floor
 Surface Water Protection Section
 Stormwater Permitting Unit
 512 N. Salisbury Street
 Raleigh, North Carolina

between the hours of 8:00 AM and 5:00 PM Monday through Friday. Copies will be provided at a charge of 10 cents per page.

9. STATE CONTACT

Additional information about the draft and final permit may be obtained at the above address between the hours of 8:00 AM and 5:00 PM Monday through Friday by contacting: **Ken Pickle** at (919) 807-6376.

10. SCHEDULE OF PERMIT ISSUANCE

Draft Permit to Public Notice – **Statewide notice to publish September 4, 2012**
Draft available on-line September 4, 2012;
Comment period ends October 4, 2012.

Permit Scheduled to Issue – **October 19, 2012 (Effective November 1, 2012)**

11. PROCEDURE FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Division of Water Quality proposed to issue an NPDES General Permit for the above described stormwater discharges subject to the outlined effluent limitations, management practices, and special conditions. These determinations were open to comment from the public.

Interested persons were invited to submit written comments on the permit application or on the Division of Water Quality’s proposed determinations to the following address:

Stormwater Permitting Unit
 Division of Water Quality
 1617 Mail Service Center
 Raleigh, North Carolina 27699-1617
 Attn: **Ken Pickle**

All comments received within thirty days following the date of public notice are considered in the formulation of final determinations.

b. Public Meeting

The Director of the Division of Water Quality may hold a public meeting if there is a significant degree of public interest in a proposed permit or group of permits. Public notice of such a meeting will be circulated in newspapers in the geographical area of the discharge and to those on the Division of Water Quality mailing list at least thirty days prior to the meeting.

c. Appeal Hearing

An applicant whose permit is denied, or is granted subject to conditions he deems unacceptable, shall have the right to a hearing before the Commission upon making written demand to the Office of Administrative Hearing within 30 days following issuance or denial of the permit.

d. Issuance of a Permit When no Hearing is Held

If no public meeting or appeal hearing is held, after review of the comments received, and if the Division of Water Quality determinations are substantially unchanged, the permit will be issued and become effective on the first day of the month following the issuance date. This will be the final action of the Division of Water Quality.

If a public meeting or appeal hearing is not held, but there have been substantial changes, public notice of the Division of Water Quality revised determinations will be made. Following a 30-day comment period, the permit will be issued and will become effective on the first day of the month following the issuance date. This will be the final action of the Division of Water Quality unless a public meeting or appeal hearing is granted.

APPENDIX A

Comparison of Other States’ TPH Stormwater Benchmarks and/or Limits:

Agency	Media	Benchmark, Limit, Criteria, etc	Value (mg/L)	Notes
CT	groundwater	protection criteria	0.5	EPA Method 418.1
NV	groundwater	discharge limit	1.0	Technology-based limit
VA	groundwater	reporting limit	1.0	Virginia Petroleum Storage Tank Program
KS	groundwater	cleanup standard	0.5	Risk-based standard
TX	groundwater	MCL	1.1	Maximum Contaminant Level
OK	groundwater	MCL	3.0	May require cleanup down to 0.1 mg/L if near well
Tacoma, WA	stormwater	performance goal	10.0	24-hr average
Tacoma, WA	stormwater	performance goal	15.0	Grab sample
WA	stormwater	max daily limit	5.0	Port of Seattle NPDES permit technology-based limit for construction areas; 5.0 mg/L typically used for all construction sites in state; plus no visible sheen non-numerical limit.
WA	stormwater	max daily limit	8.0	Port of Seattle NPDES permit for deicing areas
WA	stormwater	max daily limit	15.0	Port of Seattle NPDES permit for roadways
NJ	stormwater	mo. Ave. limit	10.0	24-hr average, EPA Method 1664A, NJPDES NJ0132721 (hot-mix asphalt plants)
NJ	stormwater	max daily limit	15.0	Grab sample, EPA Method 1664A, NJPDES NJ0132721 (hot-mix asphalt plants)
TX	stormwater	max daily limit	15.0	Grab sample, TPDES permit TXG340000 (petroleum bulk stations and terminals)

APPENDIX B

Comparison of TPH Analysis Costs vs. O&G Analysis:

LABORATORY	O&G/HEM	TPH as SGT-HEM	TPH-GRO	TPH-DRO	
	EPA 1664A		SW-846 EPA 8015B		
Environmental Chemists Inc.	\$50	\$50	\$50	\$50	
Pace Analytical Services, Inc.	\$50	\$60	\$40	\$40	
Microbac Laboratories, Inc.	\$55	\$55	na	na	
Cameron Testing Services	\$45	\$60	\$43	\$43	
Environmental Conservation Laboratories, Inc.	\$75	\$75	\$40	\$45	
Water Tech Labs, Inc.	\$50	na	\$60	\$60	
DWQ Lab	\$34	na	\$87	\$87	
Meritech, Inc.	\$45	\$68	\$50	\$50	
Charlotte-Mecklenburg Utilities Laboratory	\$30	\$43	na	na	
					Avg (TPH-GRO + TPH-DRO) cost to capture full range of TPH
Average Cost	\$48	\$59	\$53	\$54	\$106
<i>Notes:</i>					
HEM = n-hexane extractable material					
SGT-HEM = silica gel treated n-hexane extractable material					
GRO = gasoline range organics					
DRO = diesel range organics					

APPENDIX C

NCG120000 Data Analysis Summary, 2012

- Forty-five permittees reported approximately 1880 stormwater discharge pollutant measurements.
- DWQ received DMRs with approximately 700 reports of “No Flow this period” or similar wording.
- In aggregate, 32% of the 1880 measurements were benchmark exceedances. Approximately 17% of COD measurements were exceedances; approximately 43% of fecal coliform measurements were exceedances; approximately 34% of TSS measurements were exceedances.
- Tabulated data count:

Reported exceedances	Count	Per cent
COD	92/554	17%
Fecal coliform	275/637	43%
TSS	233/689	34%
Totals	600/1880	32%

- Summary data-based conclusions and data-based draft permit actions:
 - Permit Action: *All three monitoring parameters to remain in the draft permit: there is no basis to remove any of the three.*
 - Observation: Surprisingly numerous exceedances given that these facilities are performing a once a week walk around in addition to the semi-annual monitoring.
 - Observation: The large percentage (43%) of fecal exceedances may (or may not) be partially attributable to wildlife sources very difficult to control; definitive data on the source is not available. However, the compliment to the 43% exceedances is that 57% of fecal measurements were below the benchmark value. Additional data, or additional review and interpretation of the existing fecal data, might provide some future clarity on the sources involved.
 - Permit Action (Inaction): *It’s not likely that additional monitoring parameters will tell us more about the polluted discharges from these operations. Until the industry can get these three major measures of pollutants under better control, there’s not much point in considering additional monitoring parameters.*