



# Stormwater Monitoring for Industry

This is general information about the stormwater monitoring requirements of your Industrial Stormwater Permit-NDR05-0000. Please review your permit for specific monitoring and reporting requirements.

If you have questions about stormwater monitoring, please contact the North Dakota Department of Health, Division of Water Quality, at (701) 328-5210



**What You  
Need to Know**



# Before You Sample

## Contact Lab Services

### **Who will test my stormwater?**

Select a laboratory to test your stormwater before you begin taking stormwater samples. Prices vary, so it is a good idea to shop around. Be sure to provide the laboratory with the parameters (and detection limits) you want them to analyze. The lab must also use testing procedures that conform with federal regulations (40 CFR 136).

## Detection Limits

### **How do I obtain good sample results?**

Make sure your laboratory knows your type of stormwater permit and the benchmarks. The laboratory needs to know correct detection limits, typically 10 percent below the benchmarks, for your sample results to be valid. The correct detection limits assure the accuracy of your storm water results. Samples analyzed with incorrect detection limits will not be accepted as valid.

## Sample Containers

### **Where do I obtain them?**

Your laboratory will provide you with appropriate sample containers. There will be different bottles for different tests. It is a good idea to always have extra sets of sample containers on site in case one breaks. You should use caution when handling the sample containers because some contain small amounts of acid as a preserving agent. The preservative should not be rinsed out of the bottles.

## Sample Frequency

### **How many samples do I take?**

The stormwater permit requires that you collect an annual stormwater sample. The Department of Health may direct certain facilities to follow other schedules for discharge sampling (e.g., large air transportation).

## When to Sample

### **What is a good storm event to sample?**

Though it may seem obvious, you must sample when it is raining or snow is melting. Take your samples during a rain/snow event that is significant enough to create adequate runoff to your sampling locations. Ideally, your sampling should be conducted early in the day so you have plenty of time to get your samples to the laboratory.

## Sample Locations

### **Where do I sample?**

Sampling can occur at catch basins, stormwater manholes, ditches, culverts, stormwater outfalls or stormwater treatment units. When you developed your Storm Water Pollution Prevention Plan (SWPPP), you identified sampling locations representative of your site's stormwater discharge. In general, a manhole or outfall gives the most representative sample of the discharge.

# Taking Samples for Stormwater

## Sampling Techniques

### **How do I take my samples?**

Appendix 1 of your permit details parameters for testing. For oil and grease (glass bottle) and E. coli (small, sterile plastic bottle), sample directly into the proper sample container. Be sure to collect enough sample, leaving some space at the top. If you are sampling at a catch basin, sample stormwater flowing into the catch basin rather than stormwater that is pooled in the catch basin.

## Sample Handling

### **How do I handle samples?**

Keeping your samples chilled ensures that they are not altered. Keep your samples in an ice chest with ice or several cold packs. Your contract laboratory will often supply you with the coolers; however, you may need to make arrangements for ice or cold packs.

## Sample Holding Times

### **When do my samples have to get to the lab?**

You need to get your samples to the laboratory within the parameters holding times. These times vary, so ask the laboratory about your parameters specific holding times. Failure to forward the samples to your laboratory in a timely manner could alter the results and lead to a benchmark exceedence or disqualify the sample for not meeting permit requirements.

## Sample Tracking

### **What is a chain-of-custody form?**

The chain-of-custody form documents who took the sample, when and where the sample was taken and for what the sample is to be analyzed. Your laboratory will typically provide the forms with your sample containers. Be sure to label the sample with the same designation as that in the SWPPP. You must complete a chain-of-custody form for each sample taken.

## Visual Observation Monitoring Requirement

### **What am I looking for?**

Your stormwater permit requires that you visually observe each of your sample points once every six months. One of these inspections must be made within 48 hours of a rainfall or snowmelt event resulting in a discharge. You need to check for any floating solids associated with industrial activities and oil/grease sheen. Be sure to document your observations. During dry weather, it is a good idea to check for non-stormwater discharges. The Department of Health has site inspection record forms available. A department employee will review the site inspection record at the time of your facility inspection.

# Evaluating Your Results

## Interpreting Sample Results

### How do I interpret my results?

When you receive your sample results, review them to determine if they exceed any of the permit benchmarks. Lab reports vary, but they all should contain the following elements:

- There should be a column listing the “Test Parameter or Analyte,” which is a description of the substance being analyzed in the stormwater.
- There should be a numerical “Result” for each parameter, which should be compared to the permit benchmarks.
- Each result should be associated with “Units.” Typically, units are reported in milligrams per liter (mg/L) but may be micrograms per liter (ug/L). You may have to convert your results to the same units as your storm water permit benchmarks. Multiply mg/L by 1000 to get ug/L, and divide ug/L by 1000 to get mg/L.
- Every result has a “Minimum Reporting Limit” (MRL), which is sometimes referred to as a “Reporting Limit” or “Minimum Detection Limit” (MDL). This is the smallest concentration that the lab can detect in your sample. If the concentration of a parameter is less than the detection limit, your result will be reported as “ND” for non-detect or numerically as “<MRL.”

- Your report will also describe the “Method” used to analyze your sample. Your permit requires that an EPA-approved method (40 CFR 136) be used to analyze stormwater samples. Note any problems with analysis of your sample.

## Benchmark Exceedances

### What if there is an exceedance?

If stormwater monitoring results or visual observations indicate that you exceeded your benchmarks, your permit requires that you review your SWPPP. The purpose of the review is to determine if the SWPPP is being followed and identify any additional site controls needed to improve stormwater quality.

## Monitoring Data Submittal

### What do I submit?

The stormwater permit requires you to submit annual stormwater monitoring data to the Department of Health by October 31 of each year. The submittal should include the discharge monitoring report (DMR) form (standard industrial classification [SIC]-specific), laboratory reports and chain-of- custody forms. Your site inspection record and copies of your DMR reports are to be kept on site and made available upon request.