

Before the Storm



By Sean Darcy

Preparations for industrial permit sampling

Monitoring for storm water permit compliance is relatively simple: Wait for rain. Go to your outfall or discharge point and collect a sample. Label the sample and send it to the laboratory. Wait two weeks for the results. If the results come back below your pollutant effluent limits, life is good; miss the effluent benchmark, and things get complicated. Corrective action then is needed, often with limited solutions and on a budget.

The greatest asset in your tool belt is familiarity with the pollution sources and hydraulic and water quality features on a site. Here are a few tips, above and beyond a storm water pollution prevention plan, to make the most of your monitoring opportunities.

Watch it rain. Get familiar with the rainfall-to-runoff relationship of the site. Rainfall depth and intensity directly impact the volume and rate of runoff. Consider that a small storm may produce no runoff at all, while in an intense or high-volume rain event, virtually all precipitation may be converted to runoff. Web-based forecasting is an excellent tool for predicting the timing and magnitude of a runoff event. A simple rain gauge can give you immediate information during the storm.

Inspect BMPs as it rains. Check the hydraulic connectivity of the conveyance system. Get familiar with the hydraulics and operation of the BMPs as it rains. Take pictures of them under normal operating conditions to document a baseline that can later be related to water quality results. If the system is not in optimal condition, fix it before taking the sample.

Inspect from roof to outfall. Check every nook and cranny for debris buildup or leaks. Gutters, catch basins and underground pipe can accumulate debris and require routine cleaning, too.

Clean, dry storage. Know the desired organization and cleanliness of sampling materials and supplies, including sample

bottles and documentation, rain gear and equipment needed to access outfalls. Prior to a storm, make sure that all supplies are clean, dry and accounted for.

Sampling. Test early in the monitoring cycle. Some weather conditions are not ideal for sample collection, such as heavy rainfall, blizzards and tornado-like winds. Get details on the normal operating condition of the system as best as you can. Understand visual indicators of bypass conditions. Do not sample in weather conditions that cause excessive flow (i.e., greater than design capacity).

Audits. Audit the laboratory by sending a sample with a known concentration. Do not be afraid to change labs if the results are different.

Duplicate samples. Take an additional sample at each collection point. Preserve and store the backup sample until results are back from the laboratory. Sample handling, contamination and analytical errors are common problems. Backup samples allow you to verify original results.

Reconnaissance. Reconnaissance monitoring typically takes place upstream of permit compliance sampling points. The purpose is to identify pollution sources, understand site or BMP function better, or measure the effects of a specific site activity. A dye test to map a drain is an ideal example. Information on pollution sources, BMP functionality and site activities provides data that inform decisions about sampling and corrective activities.

There are no guarantees in the storm water world. Every day and every storm are different. But thorough preparation and planning for success before the storm is a far more effective strategy than hoping to get lucky once the rain starts. **SWS**

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