

Chapter 3 - Water quality monitoring

Monitoring of water quality will be accomplished within the DWWM through the WAB. WAB provides water quality data and monitoring support for NPS Program projects throughout West Virginia. Sampling of the mainstem and tributary loading impacts provides an overall picture as to the total degree of pollutant impacts. WAB will assist WIB in evaluating the effectiveness of NPS projects, helps identify areas for future projects, and through the TMDL process targets other priority areas for WBP development and protection opportunities.

Additional monitoring support will be provided by the BCs by monitoring for load reductions from specific projects, assisting our partners who conduct monitoring, and working with groups to produce an approved Quality Assurance Project Plan (QAPP). The NPS Program will continue to participate in the National Water Quality Initiative (NWQI) webinars that focus on NPS monitoring and will seek technical guidance from USEPA, if needed. Finally, additional support will be provided by the SOS Program through training and in some cases specific project monitoring.

Water quality standards

Water quality standards are the backbone of the 303(d) and 305(b) processes of the federal CWA. In West Virginia, the water quality standards are codified as 47CSR2 – Legislative Rules of the Department of Environmental Protection – Requirements Governing Water Quality Standards. Impairment assessments conducted for the 2012 cycle are based upon water quality standards that have received USEPA's approval and are currently considered effective for CWA purposes. A waterbody is considered impaired if it violates water quality standards and does not meet its designated uses. Some examples of designated uses are water contact recreation, propagation and maintenance of fish and other aquatic life, and public water supply.

Because implementation of the load allocations established by TMDLs are not enforceable under the CWA, for waters impaired solely or partly by NPS pollution sources, the primary implementation mechanism is generally the state NPS Program coupled with other state, local, and federal land management programs and authorities. Thus, the NPS program is an important mechanism to implement TMDLs and restore the impaired waters listed under 303(d) where NPS pollution is a contributor to the water quality impairment. This is best achieved through the development of WBPs that incorporate information from TMDLs that have been developed in the watershed. The implementation of WBPs has been and continues to be the highest priorities for the use of §319 funds.

With the multiple WBPs now in existence in the state, monitoring the progress of these plans becomes more and more important.

Quality Assurance Project Plans

The Quality Assurance Project Plan (QAPP) integrates all technical and quality aspects of a project, including planning, implementation, and assessment. The purpose of the QAPP is to document planning results for environmental data operations and to provide a project-specific "blueprint" for obtaining the type and quality of environmental data needed for a specific decision or use. The QAPP document describes how QA/QC procedures are applied to an environmental data operation to assure that the results obtained are of the type and quality needed and expected.

As mentioned previously the BCs will work with groups to develop QAPPs as needed for each watershed project proposal or their entire WBP if that is more appropriate. Technical guidance and support are also provided by WVDEPs NPS Program Coordinator, WAB, TMDL section, EPA, and contractual support. Several watershed groups such as Friends of Deckers Creek and Friends of the Cheat have written approved QAPPs within their watersheds for Acid Mine Drainage (AMD) monitoring and are also available to provide technical assistance.

The NPS Program follows the guidance provided by "USEPA Requirements for Quality Assurance Project Plans EPA QA/R-5" for development of QAPPs for its watershed projects. These are submitted formally to EPA Region III for approval. Note: West Virginia, Pennsylvania and other regional partners are currently working with USEPA to develop a QAPP template and to make other suggestions and improvements that will streamline future QAPP development and approval.

Volunteer monitoring

Volunteer monitoring efforts have always played key roles in §319 projects and will continue to do so into the future. The [WV Save Our Streams](#) (SOS) Program, once part of the NPS Program budget it is now funded by §106 and the Water Quality Management Fund, but it is still supported and managed by the NPS Program. The SOS Program provides technical monitoring assistance, training and certification. Volunteers receive a full day of classroom and stream side training on water quality, habitat and benthic macroinvertebrate collection and identification. They then must take a test and demonstrate their skills to become certified volunteer stream monitors.

Typically, these groups educate and encourage community members to get involved in the efforts to restore priority watersheds. Their local monitoring activities not only provide data, but they also demonstrate the importance of water quality. Volunteer monitoring groups often assist more experienced watershed groups that have active §319 projects, and through additional training by these groups and SOS are used to collect benthic data that can be preserved and analyzed to determine the impact of projects on biological integrity.

STORET/WQX

USEPA requires states to enter their water quality monitoring data, for data collected in a waterbody as a part of the implementation of a §319 project, into USEPA's storage and retrieval (STORET) data system. All water quality data generated with §319 funding, either directly or by sub-award, are required to be transmitted into the STORET data warehouse using either the Water Quality Exchange (WQX) or WQXweb.

In the past WVDEPs NPS Program has not been consistent entering its data into STORET and has simply relied on the WAB. The number of WBPs and watershed projects is far less than the number of typical stations that WAB monitors during their rotation through their cyclical monitoring cycle. If we need project monitoring, we communicate with WAB as early as possible, but even under these circumstances much of our project monitoring is completed by watershed associations or other partners. These partners have not entered their data into STORET on a consistent basis.

Over the next several years more emphasis will be placed on this effort. The Northern BC has been tasked with the lead, and thus far his expertise resulted in successful WQX entries for multiple watershed groups. WIB also plans to hold regional training on the use of STORET and WQX and are currently exploring database tools that have successfully integrated with WQX.

Operation and maintenance

Operation and maintenance (O&M) are required on all practices installed with §319 funds. Practices for agriculture, AMD, septic systems, and urban stormwater are operated and maintained for the expected lifespan of the practice. This requirement is passed on to all partners of WVDEP's sub-grant awards.

In June of 2015 the NPS Program's NBC, our expert in AMD, completed a manual that provides guidance and encourages watershed groups to develop plans for the O&M of all their projects, and to gather resources to carry out those plans. The chapters in the manual include information on:

- Institutional practices supporting O&M
- O&M considerations through the project life cycle
- Common BMPs for AMD remediation and their maintenance needs
- Post construction inspection, monitoring, and operation
- Post-construction major maintenance and more

The [O&M manual](#) provides comprehensive guidance on the topic and is available for download from the NPS Program website.