

Water Quality Issues Facing the Chesapeake Bay and Watershed: A Laboratory Perspective

Howard J. Gannon, III
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Summary: Envirocorp Labs (Harrington, Delaware) has a growing presence in providing analytical data from both point and non-point discharges within the Chesapeake Bay Watershed. The reach of our facility extends to well over 75% of NPDES Discharge permit holders on Delmarva and has grown recently to include individual homeowners through Bay Restoration Fund analysis.

We also volunteer staff and analytical capabilities to support the Nanticoke Watershed Alliance (NWA), an organization attempting to monitor, conserve and ultimately restore our local watershed, the Nanticoke River Watershed. The role of good science and increased government oversight is instrumental in ensuring that the protection of the bay is successful. However, volunteer organizations and their supporting associations are the fundamental solution to halting the deterioration of the bay. Through the ongoing and exhaustive efforts of these volunteers, reversing damage to the bay is a real possibility.

Background: On a daily basis, Envirocorp Labs obtains samples from numerous point sources within the Chesapeake Bay and Delaware Bay Watersheds. These samples span the spectrum of analysis and frequency from large analyte lists on a monthly basis to specific analytes on a daily or weekly schedule. A majority of compliance samples are collected by Envirocorp staff. However, NPDES permits also allow for the flexibility of sample collection by facility personnel. The implementation of third party, independent, non-biased monitoring has been a significant step toward ensuring the quality of wastewater treatment plant effluent. Certification programs for laboratories and mandatory participation in laboratory audit programs ensures that the quality of data released from laboratories meets or exceeds EPA standards.

Permit limits for wastewater treatment plants and pre-treatment program participants are becoming increasingly stringent in their allowable concentrations of all constituents. Quality data and strict standards will further accelerate the improvement of the Watershed and ultimately improve the condition of the bay.

As a trained biologist and the manager of an operation that gets a first-hand look at water quality data, it is my contention that strict water quality standards are necessary. We can't restore the Chesapeake without improving the water quality, and I can tell you from first-hand experience, that we aren't there yet.

Perhaps no less as important, however, is opening the dialogue between point source producers and regulatory officials. As tighter effluent limits have been introduced, the pressure for operators to meet the limits has increased.

I see first-hand the pressure on NPDES holder to meet their obligations. We need to make sure that obligation is understood and shared among citizens, community leaders, businesses, municipal point source producers, farmers, and activists from within the watershed. It is only with the cooperation of all involved that we can continue to move deliberately toward a solution for the bay.

Community organizations, especially those that are utilizing science to examine the health of the bay and its tributaries, are essential to this process. Without the hard numbers produced through a cohesive effort of volunteers, we would lack a picture of the current state of the bay. In knowing the bay's position from a data standpoint, we can make educated decisions on the further steps necessary to reduce the effects of years of mistreatment.

For sure, the population surrounding the Chesapeake Bay and its tributaries is only going to increase. The pressure imposed by our impact is only going to rise in the coming years. The current state of the bay is a result of our over-use and exploitation of the landmass. Often through no intentional fault of our own, we have (as a community) spurred the downturn in bay water quality. For this reason alone, it is essential that we change the regional mindset of the watershed's population. Organizations like the Chesapeake Bay Foundation, the Nanticoke Watershed Alliance, the Dorchester Citizens for Planned Growth, the Wicomico Environmental Trust, Riverkeepers, Waterkeepers, etc., are on the front lines of educating the citizens of the watershed. Through increased exposure and education, spearheaded by these organization's efforts, we can only hope to alter the mindset of those in our communities that have in the past put bay's health a second to commerce and recreation.

We tend to focus a lot of attention on the negative aspects of an altogether necessary situation. We will continuously exist as producers of waste. Whether it be solid waste in the form of refuse in landfills, storm water runoff from parking lots, effluent from wastewater treatment and septic infiltrators, or the effects of farmland erosion, the common denominator in them all is the need to apply technology and science to minimize or mitigate the various impacts imposed by all of us. We must aim directly at improving the infrastructure of our existing treatment facilities. At the same time we must provide a forum for citizens to learn and share in the benefits of reducing personal impact on the environment.

Organizations such as the Nanticoke Watershed Alliance are essential to raising the public consciousness. Through their efforts, the awareness of the problems – and potential solutions -- of the watershed has been significantly increased. Likewise, the existence of strong advocacy organizations overseeing the general health of the watershed has been instrumental in steering legislation aimed at solving both point and non-point sources of pollution.

The region's wastewater infrastructure as it stands today is performing at a level somewhere beneath the necessary standard for protecting the bay, much less reversing the current status of the watershed. We must focus funding and research into developing a clear and concise action plan for reversing the longstanding effects of our previous shortfalls. We can no longer pretend that the bay will right itself. We must move forward with the help of science and understanding with a broad reaching study of the bay, its tributaries, and its current state of decline.

Envirocorp's Role: Envirocorp has taken a seat at the table of those attempting to bring an action plan to the bay restoration efforts. Recognizing the importance both historically and economically of the Chesapeake and Delaware Bays, coupled with our unique geographical location on the cusp of both watersheds, we decided in 2007 to join the fast growing and enthusiastic organization -- the Nanticoke Watershed Alliance (NWA). As their statement reads, the *...mission of the Nanticoke Watershed Alliance is: Fostering dialogue, partnerships, and progress in conserving the natural, cultural, and recreational resources of the Nanticoke River watershed through collaborative outreach and education with stakeholders representing business, government, and non-profit organizations (www.nanticokeriver.org).*

This is a first in grassroots collaboration. Bringing together not only individuals concerned with the bay restoration, but also corporations and municipalities that directly effect the bay, NWA has bridged the necessary gap between the organizations upon whom the burden of responsibility has been placed and the state agencies that help regulate their impact. All parties can sit at the same table and openly discuss and design action plans for studying and monitoring the Nanticoke Watershed and ultimately the Chesapeake Bay. NWA is also the first organization to extend its arm to both Delaware and Maryland through its partnerships with organizations like the Delaware Department of Natural Resources (DNREC) and the Maryland Department of the Environment (MDE).

Through NWA's Creekwatcher program, a program that incorporates the monitoring of 40 sites in the watershed while covering a huge geography (370,000 acres) and crossing political boundaries historically difficult to bridge, a stringent precedent is being set. By demanding quality data and setting specific target analytes, while at the same time engaging business leaders and communities in the effort to collect and support the data, NWA is helping to protect and garner sustainability for the Nanticoke and its tributaries. Although Creekwatchers exist on numerous branches of the Chesapeake Bay tributaries, none has gained the notoriety and met the stringent guidelines as has the data set forth by the Nanticoke Creekwatcher Program. In partnership with John's Hopkins, the National Park Service, Horn Point Laboratory, and the aforementioned DNREC and MDE, Envirocorp Labs has signed on to donate more than \$50,000 dollars of in-kind analytical services to the NWA annually. Funding to support such testing on a scale that supports more than 1000 samples from multiple volunteer Creekwatcher samplers is non-existent. Recognizing the importance of providing this data to the NWA Envirocorp has

pledged its full support in continuing the monitoring and analytical service indefinitely. The data generated from this program, because it is produced according to EPA approved procedures and in accordance with the QAPP developed with DNREC and MDE, stands as a superior example as to what can be accomplished when civic organizations are combined with businesses and municipal partners. If this model of cooperation were to be extended throughout the watershed, coupled with the development and implementation of point source technologies, we believe that we can make real progress in improving the health of the bay.

Howard J. Gannon, III
Vice President
Envirocorp Laboratories
51 Clark Street
Harrington, DE 19952
www.envirocorplabs.com
joseph@envirocorplabs.com