**Pennsylvania Nutrient Removal Program for Chesapeake Bay**

In 2010, the United States Environmental Protection Agency (EPA) established pollution load limits (annual mass based load limits) to restrict three major pollutants fouling the Bay’s waters: nitrogen and phosphorus (nutrients) and sediment (soil). These loading limits, which set clear goals for reducing excess pollution, are science-based estimates of the amount of each substance the Chesapeake Bay and its tributaries can receive and still meet standards for clean, healthy water. The goals, or pollution reduction targets, require the seven jurisdictions in the Chesapeake Bay watershed (Maryland, Virginia, Pennsylvania, Delaware, West Virginia, New York and the District of Columbia) to reduce their nutrient and sediment loadings to the Bay until these protective limits are met, within a specific time frame.

In response to the new pollution limits, also known as the Total Maximum Daily Load (TMDL), the seven Bay jurisdictions created individual Watershed Implementation Plans (WIPs), or restoration blueprints that detail specific actions each would take to meet their pollution reduction goals by 2025. The blueprints guide local and state Bay restoration efforts through the next decade and beyond.

EPA requires that the six states and the District of Columbia each reach 60 percent of their 2025 restoration targets for nitrogen, phosphorus and sediment pollution reduction by the year 2017. This progress is measured from the baseline established in the TMDL and compared to full blueprint implementation, which must be achieved by the year 2025.

The Pennsylvania Nutrient Programs covers the Susquehanna River watershed that discharges into Chesapeake Bay. The Susquehanna basin drains the central portion of Pennsylvania. There are 184 wastewater treatment plants in Pennsylvania that are regulated under the Chesapeake Bay watershed program and have nitrogen limits in their NPDES permits. Pennsylvania has the highest number of treatment plants discharging into Chesapeake Bay and the greatest nitrogen load delivered representing 44% of the entire nitrogen load to the bay including agricultural sources.

The Pennsylvania program permits treatment facilities with annual mass based nitrogen and phosphorus limits. The limits equate to approximately 6 mg/l total nitrogen discharged at design flow. This limit is considerably higher than the 3 mg/l limit in Maryland. Many of the Pennsylvania wastewater treatment plants can achieve the higher 6 mg/l total nitrogen discharge with limited intermittent or no supplemental carbon use.

The Pennsylvania Nutrient Program categorizes point source dischargers in three phases. Phase 1 represents 63 of the largest municipal wastewater treatment plants that have nitrogen limits. Of the 63 facilities 31 are either using supplemental carbon or have supplemental carbon capability existing or under construction. There are also several industrial treatment facilities that use supplemental carbon.

The 47 Phase 2 plants represent smaller treatment facilities of 1 million gallons per day or less. The 73 Phase 3 treatment plant are the smallest at 0.5 million gallons per day or less and will not achieve final compliance until after 2019.

Pennsylvania also has a nutrient trading program that allows treatment plants to trade annual mass based nitrogen and phosphorus credits. This program allows treatment plants to buy credits to meet the NPDES permit. Many of the smaller wastewater treatment plants will be able to defer plant upgrading for a number of years by purchasing nitrogen credits.