Establishing Offset and Trading Baselines in the Chesapeake Bay Watershed

EPA Technical Memorandum

ABBREVIATIONS AND ACRONYMNS

BMP ....Best Management Practice
CBP .... Chesapeake Bay Program
EPA .... United States Environmental Protection Agency
LA .... Load Allocation
MS4 .... Municipal Separate Storm Sewer Systems
NEIEN .... National Environmental Information Exchange Network
NPDES... National Pollutant Discharge Elimination System
TMDL .... Total Maximum Daily Load
WIP.. Watershed Implementation Plan
WLA..Waste Load Allocation
WQS ....Water Quality Standard

SCOPE

This technical memorandum outlines EPA's expectations for Chesapeake Bay jurisdictions[1] when establishing baselines for point and nonpoint sources generating credits, elaborating on the expectations set out in Section 10 and Appendix S of the 2010 Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment (Bay TMDL).[2] This technical memorandum also describes an example methodology that, if used, may reduce the risk of generating credits that are inconsistent with the Bay TMDL. The methods outlined herein are relevant to baseline evaluation, and are not necessarily relevant for use in developing Watershed Implementation Plans (WIPs), annual progress reviews, two-year milestones, or other EPA or Chesapeake Bay Program (CBP) partnership activities. This technical memorandum can be used as a guide by the Chesapeake Bay jurisdictions but it is not a rule or regulation, is not official agency guidance, and does not establish any binding legal requirements.

INTRODUCTION

This technical memorandum presents information for the Bay jurisdictions to consider when establishing baselines for point and nonpoint sources generating credits, and EPA's expectations for those baselines. The Bay TMDL assumes that the Bay jurisdictions will offset all new or increased loads that are not specifically accounted for in the TMDL's waste load allocations (WLAs) and load allocations (LAs). (Bay TMDL, Section 10.1). The Bay TMDL also identifies trading as a tool that could be used to implement the Bay TMDL. (Bay TMDL, Section 10.2). EPA also assumes that any Bay-related offset and trading programs will be consistent with the Clean Water Act,[3] its implementing regulations, EPA's 2003 Water Quality Trading Policy,[4] and EPA's 2007 Water Quality Trading Toolkit for NPDES Permit Writers.[5]

As stated in the 2003 Water Quality Trading Policy, "the baselines for generating pollution reduction credits should be derived from and consistent with water quality standards." (Policy, pp. 4-5). The term pollution reduction credits ("credits"), as used in EPA's 2003 Water Quality Trading Policy, "means pollutant reductions greater than those required by a regulatory requirement or established under a TMDL. For example, where a TMDL has been approved or established by EPA, the applicable point source [WLA] or nonpoint source [LA] would establish the baselines for generating credits." (Policy, p. 5).

The first step in generating credits is understanding and calculating a potential credit generator's baseline. EPA expects that a Bay jurisdiction's calculation of the baseline will be consistent with the methods, factual information and assumptions used in the development of the applicable (Bay and/or local) TMDL; this will reduce the risk of the baseline being inconsistent with the applicable TMDL.

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[1] The Chesapeake Bay jurisdictions are: Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia.

[2] See www.epa.gov/chesapeakebaytmdl.

[3] Clean Water Act, 33 U.S.C. §§ 1251 et seq.

[4] http://water.epa.gov/type/watersheds/trading/tradingbasics.cfm

[5] United States Environmental Protection Agency, "Water Quality Trading Toolkit for Permit Writers," updated June 2009. Available online at http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm

The baseline used for credit generation is the same regardless of whether those credits will be used as offsets for new or increased loads or trades for compliance purposes. EPA expects that baseline to be consistent with the Chesapeake Bay TMDL. The Bay TMDL (Appendix S, page S-3) says the following about developing baselines:

"(a)   for point sources generating credits, the TMDL assumes that the offsets baseline is the water quality-based effluent limit (WQBEL) included in that discharger's permit consistent with the applicable WLA in the TMDL. For some point sources, the baseline will be a numeric limitation; for others, it will be a suite of BMPs determined to be protective of WQS.

(b)   For nonpoint sources generating credits, baseline options should be consistent with the TMDL LA for the appropriate sector and may be further defined in terms of load, geographic scale, minimum practices, and schedule of implementation and/or time needed to facilitate improved environmental compliance with WQS."

Evaluation of the Bay jurisdictions' baselines is important to assuring that credit generation occurs only after the relevant baseline is met. To assure that baselines are consistent with applicable Bay TMDL allocations, or local TMDL allocations where more stringent, the Bay jurisdictions are expected to review their respective credit calculation process (e.g., models or tools) every five years or as appropriate. The results of such reviews will be reviewed by EPA for consistency with the Clean Water Act and its implementing regulations as described in Section 10.1.4 of the Chesapeake Bay TMDL. Also, EPA expects the results of these reviews to be made publicly available and to remain public on a schedule consistent with any and all state and federal document and/or record retention policies.

The Bay TMDL establishes individual allocations for certain individual point sources as well as aggregate allocations for other categories of point and nonpoint sources. In the case of aggregated TMDL allocations, the Bay jurisdictions will need to determine how those allocations may be broken down for the practical purpose of determining baselines at a scale that is useful for individual credit generators. Resulting individual baselines should be consistent with applicable TMDL allocations and should be expressed in a way that makes it practical for a potential credit seller to understand and appropriate to use to offset another source's loadings.

There are many methods to translate an aggregated TMDL allocation into a finer scale baseline for credit generation. This technical memorandum discusses two methods—practice-based and performance-based. EPA expects that the Bay jurisdictions will calculate baselines

and any subsequent credit-generating reductions in a manner that is consistent with the Bay TMDL. EPA will periodically review such baseline calculations to ensure that they are consistent with any applicable TMDL and the Clean Water Act.

METHODS USED TO DETERMINE BASELINE

To date, two methods for determining baseline have been used in the Chesapeake Bay watershed – implementation of specified practices (i.e., practice-based) and achieving a performance-based loading rate (i.e., performance-based). Either of these types of baseline, or a different type, may be used if it is consistent with the Bay TMDL. EPA is committed to working with the Bay jurisdictions to ensure that both practice-based and performance-based methods for defining baselines and calculating credits produce results that approximate and are consistent with any applicable TMDLs.

Where the local TMDL and the Bay TMDL have different WLAs based on different assumptions and requirements (see 40 C.F.R. 122.44(d) (1) (vii) (B)), the applicable baseline for credit generation should be consistent with the assumptions and requirements of the TMDL WLA that the purchaser is attempting to satisfy. In instances where a jurisdiction's trading program/policy allows buyers and sellers to participate in both a local trading program under a local TMDL and a Bay trading program under the Bay TMDL, the jurisdiction is expected to ensure the purchaser acquires the suitable credits (i.e., "local credits", "Bay credits") that satisfy the TMDL WLA that the purchaser is attempting to satisfy, and to account for any potential double counting between the two types of credits. In instances where the purchaser only needs to satisfy the Bay TMDL WLA, it is sufficient for the credit generator to only meet its share of the Bay TMDL; EPA recognizes, however, that some Bay states have adopted policies requiring the credit generator to meet the most stringent TMDL baseline. The generation and use of credits, once the appropriate baseline has been established, should insure protection of local water quality by following certain considerations and examples in the technical memorandum, "Local Water Quality Protection when Using Credits for NPDES Permit Issuance and Compliance"[6].

PRACTICE-BASED BASELINE

A practice-based baseline specifies practices that are required to be implemented before credits can be generated. The Bay jurisdiction should demonstrate that the selected set of practices is consistent with the applicable TMDL allocation. This set of practices should be as similar as possible throughout the jurisdiction's entire portion of the Bay watershed.

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[6]Local water Quality Protection when Using Credits for NPDES Permit Issuance and Compliance TM3-17-15

PERFORMANCE-BASED BASELINE

A performance-based baseline is one that expresses a numeric target or percentage reduction and leaves the decision of which projects or practices to implement in order to reach that target or percentage reduction up to the individual credit generator. For a nonpoint source, the baseline would be derived from the LA for the applicable sector. A performance-based baseline specifies the amount of load beyond which credits can be generated, regardless of which practices are implemented to achieve that level of loading. The baseline should be calculated at a scale applicable to the credit generating practice, i.e., agricultural or other source. For nonpoint source baselines derived from the load allocation for the applicable sector, additionality[7] should be taken into consideration on a site specific basis.

TRACKING AND ACCOUNTING FOR LOAD REDUCTIONS AND CREDIT GENERATION

When the Bay jurisdictions report their implemented BMPs for the annual progress review, EPA expects that the Bay jurisdictions will identify which of them, and any other projects and practices, were used to generate credits. This information should be reported through the National Environmental Information Exchange Network (NEIEN). NEIEN is being modified beginning with the 2015 Progress Review to allow for the identification of BMPs that generate credits and the location where the resulting load reduction is applied. As part of the TMDL assessment process, the CBP Partnership calculates the pounds of nitrogen, phosphorus, and sediment reduction from those credit-generating projects and practices at the state-basin scale.

EPA also expects the Bay jurisdictions to sum the load reductions (i.e., pounds) used in trades and offsets by major river basin in each year for each of the three pollutants – nitrogen, phosphorus and sediment. This should not require additional calculations, instead merely summing already quantified pounds of credits used as reported in the state's registry/tracking system. This information will then be used as feedback within TMDL assessments.

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[7] Components of Credit Calculation TM 5-14-14 page 9