Local Water Quality Protection when Using Credits for NPDES Permit Issuance and Compliance

EPA Technical Memorandum

November 1, 2013 Draft

For EPA TOWG and stakeholder review

Prepared by EPA Region III

CONTENTS

ABBREVIATIONS AND ACRONYMS

EPA .....United States Environmental Protection Agency

LA.....Load Allocation

NPDES.....National Pollutant Discharge Elimination System

TMDL.....Total Maximum Daily Load

WLA.....Waste Load Allocation

WQBEL .....Water quality-based effluent limit

SCOPE

This technical memorandum addresses protection of local water quality when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load[1] (Bay TMDL).

This technical memorandum is not official guidance and does not replace the EPA 2003 Trading Policy. Rather its purpose is to elaborate on EPA's expectations for offsets found in the Chesapeake Bay Watershed, set out in Appendix S and Section 10 of the Bay TMDL, for program design and integrity. Specifically, this technical memorandum identifies EPA's expectations for how the Bay jurisdictions' NPDES and trading and offset programs should address protection of local water quality. The Chesapeake Bay jurisdictions' trading and offset programs are expected to be consistent with and supportive of the water quality goals of the Bay TMDL. This technical memorandum is only applicable in the Chesapeake Bay watershed and may be revised in the future.

For the purposes of this technical memorandum, "local waters" means the receiving waters adjacent to where the credit is being generated as well as the receiving waters adjacent to where the credit is being used, namely, at the point of discharge.

EXECUTIVE SUMMARY

The Bay TMDL expects the Bay jurisdictions[2] to offset all new or increased loads and identifies trading as a tool that can be used to implement the Bay TMDL. The Clean Water Act provides a strong framework to protect water quality, including water quality standards adopted by each state and approved by EPA, TMDLs established or approved by EPA, the NPDES program and regulations. Trading and offset programs should 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 National Pollutant Discharge Elimination System (NPDES) Permit Writers.[5]

[1] Text of the Chesapeake Bay TMDL: http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html, last accessed 1/13/2013.
[2] The Bay jurisdictions are: Delaware, Maryland, Pennsylvania, New York, Virginia, West Virginia, and the District of Columbia.
[3] Clean Water Act, 33 U.S.C. §§ 1251 et seq.
[4] http://www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf
[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

This technical memorandum specifies considerations for the protection of local water quality in the context of conducting trades or offsets of nitrogen, phosphorus, and sediment loads consistent with the Bay TMDL.

There are multiple considerations for protection of local water quality regarding the physical location of where the credits are generated and used, including the location of entities using and generating the credits. Timing of any pollutant release also should be considered and adequately documented. Some credits may be generated in one time period but used during a different time period within the same annual compliance period. In addition, while any one trade or offset may not necessarily impact local water quality, multiple trades or offsets could have a cumulative positive or negative impact on local water quality. Thus, EPA also expects the cumulative result of all offsets or trades to be considered in the issuance of and/or compliance with each permit within the context of the local receiving water.

EPA expects these circumstances, identified in this technical memorandum, to be considered by the NPDES permitting agency and adequately documented in issued NPDES permits. The permit, its administrative record and associated fact sheet should include documentation of the factors addressed in this Technical Memorandum. NPDES permits that include trades or offsets are expected to include documentation that describes these trades or offsets as they relate to permit compliance. Specific situations involving NPDES permits are addressed in this technical memorandum. EPA intends to review all permits for significant dischargers in the Chesapeake Bay and permits for any new or increased dischargers**.**

INTRODUCTION

The Bay TMDL explicitly assumes that the Bay jurisdictions[6] will account for and manage all new or increased loads of nutrients and sediment by means of either a TMDL allocation for growth or by offsetting that new or increased load. The Bay jurisdictions' water quality trading and offset programs are expected to meet the common elements of Appendix S of the Bay TMDL and to be consistent with the Clean Water Act, its implementing regulations, EPA's 2003 Water Quality Trading Policy (USEPA 2003),[7] and 2007 Water Quality Trading Toolkit for NPDES Permit Writers (USEPA 2007).

Multiple mechanisms under the Clean Water Act protect local water quality, including water quality standards, TMDLs (including the Bay TMDL), and NPDES programs.

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

[7] United States Environmental Protection Agency, 2003 Water Quality Trading Policy. Available online at: http://www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf.

For every NPDES permit that uses credits , special attention should be paid to the impact of trading or offsetting activities on local water quality. For example: whether these activities are in the same or different watersheds, the distance between partners engaged in these activities, the relative location (up or downstream) of partners engaged in these activities, and whether the activities generating a credit impact other watersheds. In addition, consideration should be given to factors such as nutrient and sediment fate and transport, balancing the timing of credit creation and credit use, and the impact of trades and offsets on aggregate loads. These factors should be considered in each individual permit issued. In all cases, permit effluent limits (including those related to offsets) are required to achieve all applicable water quality standards. The complexity of protecting local water quality increases where numerical criteria for nitrogen, phosphorus or sediment applicable to local waters do not currently exist. In those cases, the Bay jurisdictions may need to interpret the applicable narrative water quality criteria to protect the designated and existing beneficial uses. This technical memorandum provides a number of principles that should be adequately addressed and documented when credits are used in an NPDES permit.

PRINCIPLES FOR NPDES PERMITTING AGENCIES TO CONSIDER

The Bay jurisdictions should take into account the principles articulated in the following sections in determining whether the generation or use of a credit would be appropriate in the context of the established NPDES permit limit developed to be protective of water quality. EPA expects that each of these principles will be explicitly addressed in the permit fact sheet regarding the protection of local water quality. If protective constraints on the use or generation of any particular credit (in addition to any protective constraints established in a jurisdiction's offset and/or trading program) are necessary for the protection of local water quality, then these constraints should be established in the permit and documented in its fact sheet and administrative record. Included in this documentation is the credit certification and verification documentation. The purpose of these principles is to insure that local water quality is protected.

LOCATION

EPA expects regulatory authorities to consider and adequately document the following in regard to the location of where the credit is generated relative to where the credit is used:

- The **location of the credit buyer relative to that of the credit seller**. The credit may be bought and sold by sources along a shared receiving stream or different streams. If along different streams, consideration should be made of the waters upstream of the receiving streams. Also, along a shared receiving stream consider which aspect of the

transaction is occurring upstream of the other, and what impact that might have on the receiving waters.

- **Location where the credit seller's load is released, if not on site**. For example, if the credit is being generated by manure being transported off-site, consider whether the location where the manure is being applied generates potential water quality concerns, even if out of the Chesapeake Bay watershed.
- Consider all current or planned diversions, tributaries, impoundments, drinking water intakes, or other water withdrawals between the credit seller's and buyer's loads.
- Consider the cumulative impact by all other point and nonpoint sources of the pollutant being bought or sold in the receiving water.
- Consider whether any additional pollutants (besides the ones being generated and purchased in the buyer and seller's transaction) are added to the receiving waters as a result of this transaction.

NUTRIENT AND SEDIMENT TRANSPORT

EPA expects the Bay jurisdictions to determine the water quality impacts in part by considering and adequately documenting the fate and transport characteristics of the pollutant(s) to be bought and sold. For example, regulatory authorities should account for cumulative loads from all sources in the watershed as well as the in-stream processes that attenuate nutrients. The Bay jurisdictions can consider use of location or delivery factors to account for the distance between the loads.

TIMING

EPA expects the Bay jurisdictions to consider and adequately document the impact to local water quality between the time of credit generation and the time of credit use. For example, where a credit is generated in the summer, but used in the winter, then water quality may be negatively impacted in the winter.

CUMULATIVE IMPACT ON AN AGGREGATE LOAD

EPA expects the Bay jurisdictions to consider and adequately document the impact on water quality of all of the trades or offsets conducted in a local water segment and the impact these trades or offsets may have on a cumulative scale. The impact on the cumulative scale should be assessed and documented for each credit transaction.

APPLICATION TO NPDES PERMITTING

The following examples may help illustrate the general principles described in this technical memorandum and thus help guide the permit writer in drafting an effective NPDES permit. The following definitions apply to these examples:

- "local TMDL" refers to a TMDL to address impairment of the local waterbody for nitrogen, phosphorus and/or sediment (or equivalent pollutants), as that term is defined on page 4 of this technical memorandum.
- "local WQBEL" refers to either the WQBEL consistent with the assumptions and requirements of the applicable local TMDL WLA or, if there is no local TMDL, the WQBEL sufficient to protect local water quality standards.
- "Bay WQBEL" refers to the WQBEL that is consistent with the assumptions and requirements of the applicable Bay TMDL WLA.

Federal regulations require NPDES permits to have effluent limits that are protective of applicable local WQS, as well as to be consistent with the assumptions and requirements of all applicable WLAs, including a local TMDL and the Bay TMDL. Federal regulations require the permit writer to make a reasonable potential analysis to determine whether a WQBEL is necessary. 40 C.F.R. 122.44(d)(1)(i). For pollutants such as nutrients or sediment, where the state may not have applicable numeric water quality criteria, the state permitting authority should perform the reasonable potential analysis in a manner that articulates the conditions adequate to prevent the exceedance of the state narrative criteria and associated beneficial uses. Where the reasonable potential analysis indicates, the NPDES permit should contain conditions and/or effluent limits to prevent the exceedance of applicable water quality standards.

Where there are different requirements set by local WQS, the local TMDL WLA, and/or the Bay TMDL WLA, the permit should have a limit implementing the most stringent requirement. To determine which TMDL requires a more stringent effluent limit, each TMDL should be reviewed in its entirety, including not just the allocation(s) for the source but the underlying assumptions and requirements of each TMDL. (See 40 C.F.R. 122.44(d)(1)(vii)). Pursuant to EPA guidance, no trades should occur in order to comply with technology-based effluent limitations (TBELs).

Case 1: Local Waters Not Listed as Impaired; No local TMDL

- **Existing Source, no increase in load: No restrictions.** Credits can be generated outside of local waters.

- **New Source, No applicable Bay TMDL WLA:** In dealing with local water quality considerations, the permitting authority can take two approaches. Either establishing a local WQBEL that would serve to restrict credit generation and use to local waters for loads to be offset above that WQBEL or restrict all credit generation and use to local waters.

- **Existing Source with applicable Bay TMDL WLA, proposed increase in load:** A source may use credits that were generated outside of local waters, provided that the load to be offset is below historical discharge levels at the time of the jurisdiction's water quality assessment ("the assessment"). Loads to be offset above the historical discharge level should be addressed as in the previous paragraph.

Case 2: Local Waters Listed as Impaired but No Local TMDL

- **Existing Source with applicable Bay TMDL WLA, no increase in load:** A source may use credits that were generated outside of local waters, provided that the load to be offset is below historical discharge levels at the time of the assessment. Loads to be offset above the historical discharge level should be offset using credits that were generated in local waters.

- **New Source: No applicable Bay TMDL WLA:** Entire load is required to be offset. In order to ensure no additional degradation of local water quality, all credits used should be generated in local waters.

- **Existing Source with applicable Bay TMDL WLA, proposed increase in load:** Credits used may be generated outside of local waters, provided that the load to be offset is below historical discharge levels at the time of the assessment. Loads to be offset above the historical discharge level should be offset using credits that were generated in local waters.

Case 3: Local TMDL in place

- **Existing Source with applicable WLAs in both local and Bay TMDLs**
    - If the local WQBEL is more stringent than the Bay WQBEL, the local WQBEL should serve as the NPDES effluent limit. Permitting authorities should restrict credit use to credits generated in local waters.
    - If the Bay WQBEL is more stringent, the Bay WQBEL should serve as the NPDES effluent limit. Credit use should be restricted to credits generated in local waters to meet the local WQBEL. Below the local WQBEL, credits can be used that were generated outside of local waters.

- **New Source with applicable WLA in <u>either</u> the local or Bay TMDL**
    - In this case, the new source without a WLA should be treated as having a WLA of zero, and the entire load must offset. Conditions for **"Existing Source with applicable WLAs in both TMDLs" apply**.

- **New Source with no applicable WLA (i.e. WLAs = 0) in <u>either</u> the local or Bay TMDL**
    - All loads must be completely offset and credits used should be generated in local waters.

CONCLUSION

To ensure that local water quality is protected, EPA intends to review all permits for significant dischargers in the Chesapeake Bay and for any new or increased dischargers**.** As part of its review, EPA will review the permit, the associated fact sheet, and supporting documentation to ensure that the permit contains the requisite analysis of reasonable potential of a discharge to cause or contribute to an exceedance of applicable water quality standards. EPA's review would include the jurisdiction's analysis of whether the WQBEL as well as any trades or offsets that allow for additional loading is protective of local water quality. The permit writer should provide clear documentation in the fact sheet regarding the basis of these limitations and any trades or offsets.