

Request for Scientific and Technical Advisory Committee Peer Review of Criteria Assessment Protocol Workgroup's *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries* technical addendum.

July 2015

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The Chesapeake Bay Program's Criteria Assessment Protocol Workgroup, under the Scientific, Technical Assessment and Reporting Team (STAR), requests a review by the Scientific and Technical Advisory Committee (STAC) of the following Criteria Assessment Protocol Workgroup's technical report:

U.S. Environmental Protection Agency. 2015. *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries 2015 Technical Addendum*. EPA 903-R-XX-XXX. Region III Chesapeake Bay Program Office, Annapolis, MD.

Since 2007, through the work of its Criteria Assessment Protocols Workgroup, the Chesapeake Bay Program (CBP) partnership has an established forum for resolving issues, factoring in new scientific findings, and ensuring implementation of consistent bay-wide water quality criteria assessment procedure development and implementation. The Workgroup draws upon the talents and input from state, federal, river basin commission and academic partners as well as local government and municipal stakeholders. This 2015 Chesapeake Bay Criteria addendum provides previously undocumented features of the present procedures as well as refinements and clarifications to the previously published Chesapeake Bay water quality criteria assessment procedures.

- Chapter 2 documents recommendations for assessment of short duration Chesapeake Bay dissolved oxygen criteria based on sub-segmenting open-water designated use segments in up to three possible zones and applying the assessment procedures protective of each zone.
- Chapter 3 documents previously undocumented water volumes in three Chesapeake Bay segments: Western Branch Patuxent River Tidal Fresh, Maryland portion of Anacostia Tidal Fresh and Patuxent River Tidal Fresh, where volumes were missing and, therefore, limiting reporting in Maryland's Clean Water Act 303d listing assessments.
- Chapter 4 documents the development of a multi-metric Chesapeake Bay water quality indicator using the water quality standards attainment assessment results for dissolved oxygen, water clarity/underwater grasses and chlorophyll *a*, to support tracking progress toward achievement of the jurisdictions' Chesapeake Bay water quality standards.

- Chapter 5 documents an update to the Chesapeake Bay underwater grasses restoration goal and provides recommendations for alignment of the goal with the jurisdictions' Chesapeake Bay water quality standards submerged aquatic vegetation restoration acres.
- Chapter 6 documents refinements to the Chesapeake Bay benthic index of biotic integrity assessment of the aquatic life use and recommends interim rules for water quality 303d listing status supporting aquatic life use assessments.
- Chapter 7 documents monitoring support and recommended protocols for incorporating nontraditional partner water quality monitoring program data into regulatory Chesapeake Bay dissolved oxygen criteria attainment assessments.

Appendices to these chapters provide more detailed documentation on derivation of the recommended, refined criteria assessment procedures.

Background:

In April 2003, the U.S. Environmental Protection Agency (EPA) published the *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries* which was the foundation document defining Chesapeake Bay water quality criteria and recommended implementation procedures for monitoring and assessment (U.S. EPA 2003a). In October 2003, EPA published the *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability* which defined the five tidal water designated uses to be protected through the published Bay water quality criteria (U.S. EPA 2003b):

- Migratory fish spawning and nursery habitat;
- Open-water fish and shellfish habitat;
- Deep-water seasonal fish and shellfish habitat;
- Deep-channel seasonal refuge habitat; and
- Shallow-water bay grass habitat.

The detailed procedures for assessing attainment of the Chesapeake Bay water quality criteria continued to be advanced through the collective EPA, States and District of Columbia partnership efforts. These partners continue to develop and apply procedures that incorporate the most advanced state-of-the-science, magnitude, frequency, duration, space and time considerations of, as available, biologically-based reference conditions and cumulative frequency distributions. As a rule, the best test of any new method or procedure is putting it to application with partner involvement and stakeholder input.

A total of seven addendum documents have been published by EPA since April 2003. Four addenda were published documenting detailed refinements to the criteria attainment and assessment procedures (U.S. EPA 2004a, 2007a, 2008, 2010) previously published in the original April 2003 Chesapeake Bay water quality criteria document (U.S. EPA 2003a). One addendum published Chesapeake Bay numerical chlorophyll *a* criteria (U.S. EPA 2007b). Three addenda addressed detailed issues involving further delineation of tidal water designated uses (U.S. EPA 2004b, 2005, 2010) building from the original October 2003 tidal water designated uses document (U.S. EPA 2003b). Finally, one addendum documented the 92-segment

Chesapeake Bay segmentation scheme (U.S. EPA 2008) after refinements to the Chesapeake Bay Program analytical segmentation schemes were documented (U.S. EPA 2005) building from the original U.S. EPA 2004 document (U.S. EPA 2004b). This 2015 Chesapeake Bay Criteria addendum provides previously undocumented features of the present procedures as well as refinements and clarifications to the previously published Chesapeake Bay water quality criteria assessment procedures.

LITERATURE CITED

U.S. EPA (U.S. Environmental Protection Agency). 2003a. *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries (Regional Criteria Guidance)*. April 2003. EPA 903-R-03-002. Region III Chesapeake Bay Program Office, Annapolis, MD.

U.S. EPA (U.S. Environmental Protection Agency). 2003b. *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability*. October 2003. EPA 903-R-03-004. Region III Chesapeake Bay Program Office, Annapolis, MD.

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U.S. EPA (U.S. Environmental Protection Agency). 2005. *Chesapeake Bay Program Analytical Segmentation Scheme: Revisions, Decisions and Rationales 1983-2003. 2005 Addendum*. December 2005. Region III Chesapeake Bay Program Office, Annapolis, MD. EPA 903-R-05-004.

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U.S. EPA (U.S. Environmental Protection Agency). 2010. *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries – 2010 Technical Support for Criteria Assessment Protocols Addendum*. May 2010. EPA 903-R-10-002. Region III Chesapeake Bay Program Office, Annapolis, MD.