Response-To-Comment Document
for the
Proposed Total Maximum Daily Loads for PCBs
for Zones 2 - 5 of the Tidal Delaware River

U. S. Environmental Protection Agency Regions II and III

with the assistance of
the Delaware River Basin Commission and
the States of Delaware, New Jersey and Pennsylvania

December 15, 2003

"Response-To-Comment" Document for the
Proposed Total Maximum Daily Loads (TMDLs) for PCBs
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1.0 Introduction

U.S. Environmental Protection Agency (EPA) Regions 2 and 3 proposed and opened for comment the four TMDLs for PCBs for Zones 2 - 5 of the Tidal Delaware River on September 2, 2003. EPA acted on behalf of the States of Delaware, New Jersey and Pennsylvania (the "States") and in cooperation with the Delaware River Basin Commission to establish these four PCB TMDLs. Notices also appeared in the three state registers on September 2, 2003. Additional notices were published in regional newspapers. Three informational meetings were held – one in each estuary state – to present the technical basis and overall plan for establishment of these TMDLs and a formal public hearing was convened on October 16, 2003. On October 21, 2003, the public comment period ended. EPA received a total of 289 comments in written form from 30 individuals or entities and orally from 8 individuals at the public hearing. This document presents the detailed responses of the above-mentioned parties to the wealth of public comment on these TMDLs. EPA carefully considered these comments in finalizing the PCB TMDLs.

2.0 Two-Part Presentation of Responses

Five, overarching themes can be identified in the body of public comment. Therefore, EPA, the States and the Delaware River Basin Commission determined that the best approach for responding to the voluminous comments was by preparing a two-part presentation of responses, as follows in this document. In the first part, the five broad themes are identified and responded to with substantive, short-essay responses. In this manner, all of the public's major concerns are addressed. In the second part, every comment received - both in writing and orally – has been enumerated in a table and provided a direct response either by referencing the appropriate "theme response" or by providing additional, targeted information or by both.

3.0 Overarching Themes Found in the Public Comments

The five broad themes uncovered in the public comments and representing major areas of concern are presented on the next pages. Each theme is presented as a paraphrased remark and its respective response follows.

Theme 1

"Are these TMDLs based on a valid tool to describe the relationship between loading and response? Are the allocations correct from the technical, regulatory and legal standpoints?"

Assumptions Used in the Development of the Penta-PCB Model and the TMDLs

Several commenters noted that other source categories (i.e. loads from the open boundaries, gas adsorption, and contaminated sediments) were not included in figures depicting the loading sources of penta-PCBs probably because the model used prescribed boundary and initial conditions to internally compute them. Figures presented in both the model calibration and the TMDL report depict either only the external loads (such as Fig. 2.1, model calibration report) or the loadings minus tributary boundaries and categories such as contaminated sites (Fig. 9, TMDL report). Fluxes and tidal boundary loads have been included in the penta-PCB model and TMDL calculations, and are appropriately computed within the model framework. Where appropriate, and consistent with the context, figures have been modified to include these loadings such as Figures 29 to 32 in the TMDL report.

Inconsistency of Decadal Scale Simulations with Historical Sediment and Fish Data

The expert panel formed by the Commission to guide the development of the penta-PCB model has reviewed the results of the short-term model calibration and the decadal scale consistency check performed by the consultant to the Delaware Estuary TMDL coalition. At a joint meeting of the expert panel and the Commission's Toxic Advisory Committee on November 21, 2003, the panel concluded that based upon the results of the short-term calibration, the model captures the spatial and temporal distributions of the available penta-PCB data, and reflects the current state of the art in applied contaminant modeling. The panel further concluded that additional data and model refinements should be included in the development of the Stage 2 TMDLs. Regarding the purported inconsistencies with the data that were reported when decadal scale model simulations were performed, EPA and the expert panel both concluded that it is not possible to confirm the existence of any trend in the PCB concentrations in surficial sediment due to high data variability, and disagreed with the commenter's interpretation on the performance of the model. Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. The selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. The expert panel recommended that further analysis of the historical data from surficial sediment and dated cores should be performed in addition to evaluation of the loading trend used for decadal scale model simulations.

As discussed at the joint meeting on November 21, 2003 the expert panel concluded that the present model is acceptable for use in establishing Stage 1 TMDLs. EPA, DRBC and the States agree with this conclusion.

Need for a Food Chain Model to Describe the Relationship Between Water Column PCB Concentrations and Fish Tissue

Several commenters noted that the approach incorporated in the water quality criteria assumed that the fish and water concentrations were at a constant ratio, and that this was not applicable to the present situation in the Delaware Estuary because the recent historical data demonstrated that the ratio of fish tissue PCB concentrations to that of the water column was increasing. A food chain bioaccumulation model was therefore recommended to relate fish tissue PCB concentrations to that in the ambient water column and sediment bed. The U.S. EPA requested that the basis for the Stage 1 TMDLs be the current DRBC human health water quality standards for total PCBs. These standards use a bioconcentration factor (BCF), not a bioaccumulation factor (BAF).

EPA does not agree that the currently available data unequivocally show that the ratio of the fish tissue concentrations of PCBs to the water concentrations of PCBs is changing. Longer term monitoring is needed to ultimately determine whether this ratio is changing or whether perceived changes are normal variability within a currently stable regime. Continued monitoring of fish tissue concentrations in the estuary by the DRBC and the states is planned.

Refinements of the TMDLs in Stage 2 and in future years will likely be based upon different water quality criteria. EPA has issued a new methodology for developing human health water quality standards that recommends the use of BAFs for various trophic levels. DRBC has developed and will be conducting public participation on the revised human health criteria for carcinogens using this new methodology. Wildlife criteria will be developed by the DRBC in the next two years. While the controlling water quality criterion in the future is uncertain, the Stage 2 criterion will most likely be a water-based value. In consideration of these factors, the expert panel recommended at a joint meeting with the Commission's Toxic Advisory Committee on November 21, 2003 a phased approach to the development of a bioaccumulation model. The panel suggested the initial use of either the Thomann or Gobas bioaccumulation models, followed by the development of a bioenergetics model following Stage 2.

Environmentally Wrong to Assign Assimilative Capacity to Sediments

Any process that results in the loss of PCBs from the estuarine ecosystem such as volatilization, burial in sediments, dechlorination and exportation, will provide additional assimilative capacity in the ecosystem. As indicated in the model calibration report, the observed burial rates from dated core samples, sonar scan results, decadal scale consistency check, and professional judgment were used along with observed water column carbon concentrations to check model output. Along with loads and forcing

functions, settling/resuspension rates and decay rates, surface sediment mixed layer depth are determined as part of the model calibration. The approach of considering net burial of carbon (particulate PCBs) as a sink in the determination of the TMDLs is therefore deemed to be appropriate.

Extrapolation of Penta to Total PCBs is an Oversimplification

Since pentachlorobiphenyls (penta-PCBs) were the dominant homolog in fish tissue monitored in the estuary, and since ambient data indicated that throughout the estuary this homolog represents approximately 25 percent of the total PCBs present, the penta-PCBs were selected as a surrogate for total PCBs. Based upon the recommendations of the expert panel formed by the DRBC and a review of the available data, EPA adopted this approach. Further refinement of the total PCB TMDLs using a sum of the ten PCB homologs will occur in Stage 2.

Technical Flaws in Collection of PCB Data

Many commenters have raised issues concerning the analytical methodology required by DRBC and proposed to be utilized in Stage 2 and its applicability to these TMDLs. The DRBC required the utilization of congener-specific analytical methodologies for analysis of various media containing PCBs. This approach is based on the previous monitoring experiences of the DRBC and some of the estuary states for PCBs. Studies from the early 1990's of effluent, ambient water and sediment samples yielded non-detectable results utilizing conventional Aroclor methodology for PCB analysis. However, these results were inconsistent with fish tissue analysis results which indicated elevated levels of PCBs. Further studies were conducted by the DRBC in the mid- and late 1990's utilizing analytical techniques capable of detecting individual congeners which indicated detectable concentrations of PCBs. Analytical methodologies which can detect individual congeners have the following advantages as compared to conventional Aroclor method: lower detection limits, reduced number of false negative results, better characterization of concentrations of individual congeners and estimates of PCB loadings. The finding of this and previous studies support the use of low level congener method, as opposed to Aroclor methods for the identification and characterization of sources of PCBs. Some commenters have argued the applicability of 1668A for these studies, as well as in NPDES permits. We note that the method has undergone a single laboratory validation and is currently undergoing an inter-laboratory study as per EPA protocols. Furthermore, EPA recommended the use of Method 1668A for monitoring for generation of data used to determine TMDLs (EPA letter dated May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company).

Commenters also noted that not enough data was collected from point sources, contaminated sites and non-point sources to support the proposed TMDLs. In all instances, the TMDL is based on the best data available at the time the TMDLs were developed. The data were determined to be sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. Both the hydrodynamic and water quality models were calibrated and the calibration results are provided in supporting documents. Model calibration results were judged scientifically credible and adequate to support development of the Stage

1 PCB TMDL by a panel of independent scientists and modeling practitioners. Refinements to the loading estimation and modeling work will be continued in Stage 2 TMDLs development. In order to quickly initiate the collection of additional data, the DRBC adopted Resolution No. 2003-27 on December 3, 2003. This resolution authorizes and directs the Executive Director to require dischargers and other responsible parties to conduct monitoring and/or other data collection and analyses to further characterize point and non-point loadings of toxic contaminants, including PCBs, to the Delaware Estuary for purposes of developing and implementing TMDLs or actions under the DRBC Water Quality Regulations.

Flaws with Data Interpretation

Commenters have also questioned the use of qualified data and the use of one-half of the detection limit for non-detected congeners in loading calculations. We offer the following rational for the use of qualified data and the use of one-half the detection limit in calculations. Method 1668A defines detected and quantifiable concentrations of each PCB congener by defining Estimated Method Detection Limits (EMDLs) and Estimated Minimum Levels (EMLs). These provide an indication of the concentration of a congener within a sample, and the certainty with which that concentration is known. EMDLs are defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. Therefore, concentrations greater than the EMDL, although qualified, were used in calculations. Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detected data. This treatment is well established in the literature. Since the true concentration of a non-detect sample is somewhere between zero and the detection limit, setting the concentration equal to ½ the detection limit is equally likely to under predict or over predict the true concentration. We offer the following references in support of the use of one-half the detection limit.

1. EPA/540/1-89/002 (RAGS); Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, D.C. 1989.

2. EPA's "Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds; Part III: Integrated Summary and Risk Characterization for 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds. (EPA/600/P-00/001Ag, June 2000, p 57.

3. EPA's Proposal for Control of TEQ in Biosolids - On December 23, 1999 (64 FR 72045), EPA proposed regulations for control of TEQ in biosolids. In the proposal, EPA esta-blished TEQs assuming nondetects of zero, ½ the detection limit, and the detection limit.

Theme 2

"The water quality criteria are not achievable nor based on good science."

Applicable Water Quality Criteria

Several commenters questioned the basis for the water quality criteria used to calculate the TMDL. This was explained in Section 1.4 of the proposed TMDL and is covered in Section 1.4 of the final TMDL. EPA regulations (40 CFR 130.32) require that TMDLs be based on the applicable water quality criteria, i.e., those formally adopted by the States and approved by EPA. One of the DRBC's functions is to establish water quality standards for the Delaware River Basin, which are in turn deferred to by the States. Downstream designated uses must also be protected when a state develops and implements its water quality standards. DRBC's water quality criteria were adopted in 1996. In this case, both DRBC and the State of Delaware's water quality criterion of 7.9 pg/l for the protection of human health from carcinogenic effects is the controlling downstream criterion to be achieved in calculation of the TMDL. Delaware's criteria for Total PCBs were approved by EPA in 1990 as part of Delaware's triennial review of water quality standards. The criterion is based on a fish consumption rate of 37 grams per day used in that portion of the Delaware River below the Delaware Memorial Bridge. New Jersey and Pennsylvania currently use 6.5 grams per day. All of the applicable criteria were based on EPA's 1980 Methodology for deriving human health criteria. EPA's current recommended fish consumption value, established in EPA's Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000) (see http://www.epa.gov/waterscience/humanhealth/method/method.html) for fish consumption applicable to the general population and sport anglers is 17.5 grams per day. The 2000 Methodology also encourages States to use local fish consumption values to reflect consumer choices and also promotes the use of field-derived bioaccumulation factors (BAFs). The 2000 Human Health Methodology also revised the cancer potency slope factor for PCBs used in calculation of criteria from 7.7 mg/kg/day to 2 mg/kg/day. DRBC has been in the process of revising its criteria for PCBs, which will in turn affect the criteria which are applicable for the States' water quality standards. Using these two newer values in the calculation (2 mg/kg/day and 17.5 grams/day) has the potential to raise the criterion value for Zone 5 and lower the value for Zones 2 through 4. DRBC is also considering adopting wildlife criteria. Delaware is in the process of completing a triennial review of water quality standards. The proposed version contained language which would, if adopted, make DRBC's adopted criteria the effective criteria for the Delaware Estuary. Future revisions to the TMDL will incorporate the applicable criteria in effect at that time.

Health Effects of PCBs

Comments were raised regarding the potential health effects of PCBs. In 1996, at the direction of Congress, EPA completed a reassessment of PCB carcinogenicity, titled "PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures." Additional information can

be found at http://www.epa.gov/opptintr/pcb/effects.html. EPA's cancer reassessment was peer-reviewed and the reviewers agreed with EPA's conclusion that PCBs are probable human carcinogens. EPA reviewed all of the available literature on the carcinogenicity of PCBs in animals as part of the cancer reassessment. The literature presented overwhelming evidence that PCBs cause cancer in animals. The reassessment provided EPA with sufficient information to develop a range of potency estimates for different PCB mixtures, based on the incidence of liver cancer and in consideration of the mobility of PCBs in the environment. The reassessment concluded that the types of PCBs likely to be bioaccumulated in fish and bound to sediments are the most carcinogenic PCB mixtures.

In addition to the animal studies, a number of epidemiological studies of workers exposed to PCBs were reviewed. Results of human studies raise concerns for the potential carcinogenicity of PCBs. Studies of PCB workers found increases in rare liver cancers and malignant melanoma. The presence of cancer in the same target organ (liver) following exposures to PCBs both in animals and in humans and the finding of liver cancers and malignant melanomas across multiple human studies adds weight to the conclusion that PCBs are probable human carcinogens. PCBs also have significant noncancer effects, including effects on the immune system, the reproductive system, the nervous system and the endocrine system.

EPA conclusions regarding PCBs have been supported by others. The International Agency for Research on Cancer has declared PCBs to be probably carcinogenic to humans. The National Toxicology Program has stated that it is reasonable to conclude that PCBs are carcinogenic in humans. The National Institute for Occupational Safety and Health has also determined that PCBs are a potential occupational carcinogen.

Achieving the Standards & Use Attainability Analysis

EPA, DRBC, and the States have acknowledged that it will take decades to achieve the TMDL loads. DRBC has created a multi-disciplinary Implementation Advisory Committee (IAC) to develop creative and cost-effective solutions for reducing loadings of PCBs. The IAC's charge is identified in DRBC's Request for Nominations to TMDL Advisory Committee (June 2003). The IAC held its second meeting on December 10, 2003. Achieving the TMDL loads will require substantial effort across many programs both within the Estuary and to achieve reductions in the boundary inputs from the air, ocean, and upstream tributaries. The Great Lakes Program has already spent a number of years developing strategies and identifying alternatives to reduce bioaccumulative pollutants, such as PCBs.

PCB production ceased in the United States in 1977, although PCBs remain widely in use in electrical equipment, and are a frequent contaminant in waste sites and at disposal facilities. They may also be inadvertently manufactured and their future release must be prevented. PCBs in the environment have declined steadily in the Delaware Estuary and elsewhere over the past 30 years and we expect that the decline will continue.

EPA regulations (40 CFR 130.32) require that TMDLs be based on the applicable criteria. The Use Attainability Analysis (UAA) process is described in EPA's water quality standards regulation at 40 CFR 131.10(g). It can be pursued by States where the State can demonstrate that attaining the use is not feasible and it is not an existing use. The same criteria have also been used to approve temporary variances from water quality standards. An alternative use and criteria representing the highest attainable use must be put in place. These water quality standards revisions must be adopted by the States and submitted to EPA for review and approval. In addition to UAAs and variances, the use of compliance schedules is another option available to States.

In summary, there are several options available to States in circumstances where the attainment of the applicable water quality standard is not expected in the near term. These options will continue to be evaluated.

Theme 3

"Programs to address the gas phase, ocean boundary, tributaries and sediment are missing. The TMDLs rely heavily on Stage 2 TMDLs but there is no guarantee these will occur"

Several commenters expressed doubt about the achievability of the TMDL, especially considering the magnitude of the load reductions required from multiple sources. Some indicated that EPA had not articulated a plan to address the load reductions needed from sources other than NPDES discharges.

As stated in the TMDL, achieving the water quality standards for PCBs in the Delaware Estuary will require significant reductions from current loadings from both point and nonpoint sources. In addition to reducing PCB loads from sources discharging directly to the estuary, reductions from sources in the non-tidal portion of the river, local and regional air emissions, and sources contributing to elevated PCB concentrations in the coastal waters will be necessary to achieve and maintain the applicable PCB standards. In April 2003 EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also an Appendix to the TMDL Report. This plan includes category-specific strategies to reduce PCB loads from air, tributaries, contaminated sites, non-point stormwater runoff, and contaminated sediments.

Some commenters suggested that ubiquitous regional air concentrations originating from outside the basin would make control of air sources impossible. Air monitoring data coordinated by Rutgers University demonstrates that important local atmospheric sources exist within the basin. These local sources are targeted for identification and control through implementation of this TMDL. Implementation may not be limited to within basin sources, however. If, in the course of trackdown and identification, out of basin sources prove to be important, steps for controlling these sources will also be considered.

Some commenters mistakenly suggested that the TMDL neglected PCB inputs from sediment, tidal boundaries, and gas phase air concentrations, citing Figure 2.1 in the Model Calibration Report. However, Figure 2.1 depicts the external loads only that were used in the calibration of the PCB model. Fluxes (air and water, and sediment and water) and tidal boundary loads are most appropriately computed within the model framework and are in fact included in model runs used for model calibration as well as in the development of the TMDLs. Thus, the computed water column concentrations reflect inputs from external loads, fluxes associated with sediment and gas phase air concentrations, and tidal boundary concentrations.

The Stage 1 TMDL is based on the best data available at the time the study was performed. Additional characterization is planned for the Stage 2 TMDL.

Phased Approach Not Part of Intent of the CWA and Does Not Meet Consent Order Deadline

A TMDL whether phased or not is established to meet the applicable water quality standard. A TMDL, whether phased or not is: TMDL = WLAs + LAs + MOS.

Under the phased approach, the TMDL allocations are based on available data and information. The phased approach provides for pollution reduction without waiting for new data collection and analysis. TMDLs established using the phased approach include WLAs that confirm existing limits or require reductions for point sources, LAs that confirm existing controls or require reductions and new controls for nonpoint sources, and an appropriate MOS necessary to achieve compliance with the applicable ambient water quality standard.

A phased TMDL is a TMDL, and is therefore within the intent of the CWA, and, if established by the December 15, 2003 deadline contained in the Region 3 Consent Order, will meet the requirement of the Consent Order.

The Stage 1 TMDLs were designed to meet the current applicable PCB criteria. These TMDLs meet all statutory and regulatory requirements and are complete stand-alone TMDLs. EPA believes that the TMDL process is iterative and revisions can be made as better monitoring data nad analysis become available. The Stage 1 TMDLs are effective until and unless replaced or amended. PCB reduction programs will be implemented based on the Stage 1 TMDLs, regardless of whether Stage 2 TMDLs are established.

Relies Heavily on Stage 2 TMDLs but No Guarantee This Will Occur

EPA, DRBC and the States are committed to the establishment of a Stage 2 TMDL for PCBs based upon changes in the current applicable water quality criteria, additional ambient, point and nonpoint source monitoring data, and/or more sophisticated modeling approaches. However, these plans to proceed with Stage 2 TMDLs in no way undermine the integrity of the Stage 1 TMDLs.

Theme 4

"The requirements for the sources within the estuary are not reasonable, sufficient, nor achievable."

A number of commenters expressed that the TMDL places an unfair burden on point source dischargers, and that the requirements for point sources are not reasonable, nor achievable. Others expressed that the TMDL is not stringent enough on what is required of point sources. The following response touches upon the specific comments raised under this broad issue. Still others commented that there is insufficient detail on how nonpoint source controls will be achieved.

The Need for Point Source Controls

Some commenters disagree with the TMDL assigning WLAs that will require load reductions from point sources identified in the TMDL. These commenters state that most of the point sources are *de minimus* contributors to the PCB load to the Delaware, noting that greater loadings are attributed to air sources, nonpoint source runoff, tributaries, and the ocean boundary. EPA agrees that point sources do not represent the largest component of the overall PCB loading to the Delaware River. EPA considers, however, that point source loadings are not insignificant, and that point sources should be responsible for appropriate load reductions necessary for the Delaware to attain water quality standards. By regulation, NPDES point sources cannot cause or contribute to an exceedance of applicable water quality standards and the TMDL analysis shows that almost all of the point sources have existing PCB loads that cause or contribute to an exceedance of the applicable PCB water quality criterion. PCBs are classified as a probable human carcinogen, and elevated concentrations of PCBs measured in fish have been the basis of fish consumption advisories spanning all three states.

Individual, Numeric WLAs for Point Sources

Commenters questioned the need for individual, numeric WLAs, as opposed to zone or categorical WLAs as a part of these TMDLs. As required by regulation at 40 CFR Part 130, a TMDL must include, among other elements, a total allowable load as well as individual WLAs and LAs, and such allocations must be identified for each significant source of the pollutant of concern. According to the data used to develop the Delaware River PCB TMDLs, virtually all the NPDES dischargers identified in the TMDL report contribute PCB loadings in exceedance of the PCB water quality criterion, and some dischargers, on their own, have existing loadings far above the allowable penta-PCB load allocated to their respective Delaware River management zone. Based on EPA's analysis of that information, EPA assigns individual WLAs to the 142 NPDES point sources identified in the Delaware River PCB TMDLs, and a categorical WLA in each management zone for MS4s that likely discharge to the main stem Delaware River or tidal portions of tributaries. The TMDLs assign individual WLAs to all point sources for which EPA has sufficient information, based upon their current loadings, to show that the discharge causes or contributes to an exceedance of the applicable PCB water quality criterion.

EPA has the substantial discretionary authority to assign WLAs in this manner, as long as the sum of the allocations is equal to or less than the assimilative capacity of the receiving water and allows for a margin of safety.

The numeric WLAs represent the loadings of PCBs that can be discharged by point sources to the Delaware River when the sum of the non-point source loading is at their allocation in order to attain water quality standards. That is, TMDL = WLAs + LAs + MOS. The TMDL expresses WLAs in numeric form because they were derived from numeric water quality criteria and targets (in pg/L).

Burden, including Cost, to Reduce PCB Loadings is Not Reasonable

Some commenters find it unreasonable to require PCB load reductions from point sources, citing unduly high costs with a high degree of uncertainty about whether such controls will attain water quality standards. Others have commented that there is an absence of demonstrated treatment technology to meet the proposed WLAs. Commenters question whether waste minimization plans will be sufficient to meet the WLAs considering the magnitude of required reductions.

The regulation at 40 CFR 122.44(k) allows the use of a non-numeric, water quality-based effluent limit (WQBEL) based on a "best management practice" (BMP) where a BMP is determined to be an appropriate means to control pollutants under specified circumstances. The use of non-numeric WQBELs ensures that PCB discharges are reduced through implementation of a BMP approach.

EPA is aware that PCBs are no longer being produced for commercial purposes. The overall loading to the Delaware River of PCBs is thought to be primarily from contamination in and around the areas of the dischargers or from unknown sources during the industrial process, either directly from old leaking equipment or produced as an unwanted byproduct. An NPDES condition to eliminate the sources of the PCBs is a more effective and efficient method by which to reduce PCB loadings to the Delaware River than modifying end-of-pipe wastewater treatment to meet a numeric limit.

Based on the above, EPA believes it should be reasonable and consistent with TMDL and NPDES regulations that point sources contributing PCB loads be required to reduce PCB discharges through the development and implementation of PCB minimization plans that will be required by the NPDES permitting programs in Delaware, New Jersey, and Pennsylvania. EPA concludes that such non-numeric WQBELs would be consistent with the individual WLAs included in the TMDLs.

For purposes of these TMDLs, it is EPA's assumption and conclusion that such non-numeric WQBELs would be included in permits, and therefore for purposes of Section 122.44(d)(1)(vii)(B), effluent limits based on BMPs would be consistent with the individual WLAs included in these TMDLs.

EPA disagrees that the environmental benefit of reducing PCB loadings would be negligible. As noted in the TMDL report, PCBs are persistent in the environment, and accumulate in the tissue of fish and

other wildlife. Therefore, EPA believes that any removal of PCBs from the environment, including the water column, is beneficial. The CWA does not provide for consideration of costs in achieving the applicable water quality criteria by point sources. Under the CWA, while economic information (including costs) may be considered in designating uses in a waterbody, such economic factors are irrelevant in setting the criteria to meet those uses. Mississippi Comm'n Natural Resources v. Costle 625 F. 2d. 1269, 1277 (5th Cir 1989).

Reasonable Assurance for Nonpoint Controls

Some commenters feel that the TMDL does not provide reasonable assurance due to the lack of nonpoint source control measures. While EPA agrees that such planning is important, neither specific plans, nor an implementation strategy, for reducing PCB loads from nonpoint sources are necessary components of a TMDL. DRBC has taken the lead in forming a PCB TMDL Implementation Advisory Committee (IAC), with members from each of the estuary states, municipal and industrial dischargers, and fishery, wildlife and environmental organizations. The goal of the IAC is to develop strategies for achieving load reductions as identified in the Delaware River PCB TMDL in the short term and attaining water quality standards in the longer term. It is expected that the IAC will address the need for further nonpoint source control measures. It is also appropriate to note that DRBC has authority to require additional implementation controls beyond those required by the state NPDES permitting authorities.

Since PCBs were banned more than two decades ago and are no longer manufactured for commercial use, EPA believes there is an even greater need for cross-program coordination to address legacy sources of PCBs in the Delaware River watershed. EPA points out that clean-ups are occurring through the Superfund program and state hazardous site programs, and that resources are being spent to remove PCBs from, not only the water column, but also the airshed and from soils. Based on those activities and authorities, EPA finds there is reasonable assurance that the load allocation can be achieved, although it may take several decades to achieve the reductions.

Theme 5

"The TMDLs do not guarantee implementation."

The purpose of a TMDL is to establish the instream water quality targets and the pollutant load reductions needed to achieve those targets. As such, the TMDL is not required to prescribe all the activities needed to achieve the TMDLs. This theme response addresses activities that are planned by DRBC and the states to begin the long process to achieve the reductions needed. The regulations that currently apply to the development and approval of TMDLs are those that were issued in 1985 and amended in 1992 (40 CFR Part 130, section 130.7). The regulations do not include implementation plans as a necessary elements of a TMDL.

Point Source Implementation

For permitted point discharges, the reasonable assurance that the waste load allocations will be met rests with the permitting process and the development and enforcement of water quality based effluent limits (WQBELs) consistent with NPDES permitting requirements. The states of Delaware, New Jersey and Pennsylvania, as the permitting authorities, have agreed that the best approach for implementing the WLAs in Stage 1 is to develop non-numeric WQBELs as an NPDES condition consistent with the individual WLAs. These conditions will require point sources to trackdown and then take the actions necessary to eliminate any uncontrolled PCB discharges. In addition, permitted sources will be required to monitor both influent and effluent for extremely low-level detection of PCBs using EPA Method 1668A. In this manner, it will be possible to determine the quantity of PCB loadings being reduced through implementation of these pollutant minimization plans.

Several commenters questioned whether the states would re-open NPDES permits before their expiration date. The States are working with DRBC to quickly require dischargers to conduct the necessary additional monitoring via letters issued by DRBC under their authority. This will ensure timely monitoring and data collection. As stated in the proposed TMDLs, the States will include the Stage 1 TMDL requirements in all permits issued, reissued or modified after the establishment of the Stage 1 TMDL. The States will aggressively work to accomplish the incorporation of the Stage 1 TMDL requirements into permits in the most expeditious manner practicable taking into account agency workloads and resources.

NPDES permits that are modified to include Stage 1 TMDL requirements will include a required date for submission of the PCB minimization plans, and that regulatory review will be expedited as resources allow. These plans will be public information and available. Though PCB minimization plans do not require formal notice and public comment, they will be available for public review and comment.

In this way, actions to reduce point source loadings will occur in the near term. In addition, several dischargers have indicated that they would voluntarily begin to develop the pollutant minimization plans

even before they were required by permit.

Regarding EPA's oversight role, EPA Region 3 requires that all permits (majors and minors) in Pennsylvania and Delaware be submitted to EPA for review when a TMDL has been established. Although EPA Region 2 does not generally review individual permits prior to issuance, it ensures through programmatic oversight that New Jersey issues permits that implement approved TMDLs.

Non-Point Source Implementation

The DRBC has organized a broad-based stakeholder committee to identify both immediate and long-term actions to reduce source PCB loadings. The Implementation Advisory Committee, to date has been charged with identifying activities which will address nonpoint sources, among others, to reduce PCB loads.

It is clear that the required reductions will take a significant amount of time to achieve. It will be a continuous process of iterative reductions in order to achieve the water quality standards in effect. The modeling informs the process and suggests that it will take decades for the river to meet the standards. EPA points out that clean-ups are occurring through the Superfund program and state hazardous site programs, and that resources are being spent to remove PCBs from, not only the water column, but also the airshed and from soils.

The states do receive funding under Section 319 to support planning functions as well as on the ground projects to reduce nonpoint source loads. Pennsylvania also provides substantial funding through its Growing Greener Program. New Jersey also uses its Corporate Business Tax authorized under the Watershed Protection Act to address non-point source pollution including implementation of TMDLs. The 319 program requires that watershed restoration plans be developed when project funds are being expended and also focuses these funds on watersheds having identified impairments and where TMDLs have been established.

Commenters on Delaware Estuary PCB TMDL

Letter ID	Commenter	Affiliation	Notes
1	J. Bart Ruiter	DuPont	
2	Verne Shortell	Pepco Holdings, Inc	
3	Scott A. Gould, Alexandra Chiaruttini (McNees Wallace & Nurick LLC)	The Boeing Company	
4	Maya K. van Rossum	Delaware Riverkeeper Network	
5	Fredric P. Andes	Federal Water Quality Coalition	
6	Douglas O'Malley	New Jersey Public Interest Research Group	
7	T. Mayes Starke	Georgia-Pacific Corporation	
8	David Katz	City of Philadelphia	
9	Roy Deitchman	National Railroad Passenger Corporation (Amtrak)	
10	Margaret Lattin Bazany	Rohm and Haas Company	
11	Elizabeth Bourbon	Valero Refining – New Jersey	
12	Robert M. Matty, Jr.	Exelon Power	
13a	Kevin Donnelly	Delaware Department of Natural Resources and Environmental Control	
13b	Richard Greene	Delaware Department of Natural Resources and Environmental Control	
14	Pamela Bush/Maya van Rossum	DRBC/Riverkeeper Network	Documentation of e-mail correspondence
15	Russell J. Furnari	PSEG Services Corporation	
16	Willam T. Hall (Hall & Associates)	Hamilton Township and City of Trenton	
17	Kash Srinivasan	City of Wilmington	
18	Timothy D. Glazer, James R. May	Widener University Environmental and Natural Resources Law Clinic	
19	Tracy Z. Surles	New Castle County, Delaware Department of Special Services	
20	Paul Wittekind	Kimberly-Clark	
21	John Bruzzi	Exxon Mobil Corporation	
22	Benjamin G. Stonelake, Jr. (Blank Rome LLP)	Delaware County Regional Water Quality Control Authority (DELCORA)	
23	James Stuhltrager	Mid-Atlantic Environmental Law Center	
24	George Van Rossum	NA	

25	Ramesh C. Dwivedy	Greeley & Hansen LLC	Request for information
26	Marc E. Gold (Manko, Gold, Katcher & Fox, LLP)	Delaware Estuary TMDL Coalition	
27	Carolyn L. Green	Sunoco, Inc.	
28	Estelle Bronstein	NA	
29	Andrew Kricun	The Camden County Municipal Utilities Authority	
31	Richard McNutt	STAND	
32	David Ruskoski	OxyChem	
33T1	Kevin Donnelly - Transcript	Delaware Department of Natural Resources and Environmental Control	
33T2	Timothy Glazer - Transcript	Widener University Environmental and Natural Resources Law Clinic	
33T3	Marc Gold, Dominic DiToro - Transcript	Delaware Estuary TMDL Coalition	
33T4	Jim Stuhltrager - Transcript	Mid-Atlantic Environmental Law Center	
33T5	Fred Andes - Transcript	Federal Water Quality Coalition	
33T6	Maya van Rossum - Transcript	Delaware Riverkeeper Network	
33T7	Tim Dillingham - Transcript	American Littoral Society	
33T8	David Katz - Transcript	City of Philadelphia	

Delaware Estuary PCB TMDL - Response to Comments
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Letter ID	Public Comment	Response
01-001	Reasonable assurances have not been provided that the wasteload allocations contained in the TMDL can be attained. No demonstrated wastewater treatment technology exists to meet proposed wasteload allocations (1-90 pg/L) that would require PCB reductions of 99.9+%. Reasonable assurances have not been provided that non-point sources control measures will achieve expected load reductions. Examples cited include air sources, NPS runoff and ocean boundary.	See Theme 3 and responses.
01-002	The TMDL submittal did not identify all non-point sources such as air, New Jersey contaminated sites and MS4s, including location of sources(s) and the quantity of loading. DRBC did not identify the non-point sources or the location of these sources that contribute PCBs to the atmosphere, thus how can they be reduced. New Jersey contaminated sites PCBs loading were not included in the TMDL. The TMDL submittal did not present current and future growth trends that may impact PCB loadings to the estuary. Future new or increased stormwater discharges (i.e. MS4) due to new impervious surfaces area will increase PCB load to surface waters.	As indicated, the NJ contaminated site load estimates were not completed in time for inclusion in the modeling. When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration. Regarding air sources, trackdown of individual air sources is beyond the scope of the TMDL. However, DRBC is coordinating with Rutgers University on a project to track down local atmospheric sources in the basin. Current and future growth trend estimates are not a requirement for preparing a TMDL. The explicit Margin of Safety addresses anticipated growth.
01-003	The TMDL submittal did not present current and future growth trends that may impact PCB loadings to the estuary.	See response to comment 01-002.
01-004	The TMDL must include a description of the appropriate water quality standard. The standard used in the TMDL is not per the DRBC regulations which, require that the water quality standard be set to the pollutant concentration not subject to control (i.e., set at the background concentration resulting from uncontrollable source to the Delaware Estuary).	The TMDL report does specify that the water quality standard that is the basis for the TMDLs for Zones 2 to 5 is the applicable, current DRBC water quality standards. These standards are the same standards as those of the states of Delaware, New Jersey and Pennsylvania with the exception of the Delaware standards for upper Zones 5 which are less stringent than the DRBC standards. Furthermore, the requirements of the DRBC regulations do not apply since the establishment of these TMDLs is not an action of the Commission, but an action of EPA.

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Letter ID	Public Comment	Response
01-005	The proposed TMDLs do not accurately identify the loading capacity of the Delaware Estuary. The method described to establish cause-and-effect relationship between numeric target and identified sources is not adequate.	The models were calibrated using the best available data at the time. Both the hydrodynamic and water quality models were calibrated, and the calibration results are provided in supporting documents. Model calibration results were judged scientifically credible and adequate to support development of the TMDL by a panel of independent scientists and modeling practitioners. The commenter's question on what area of development is not adequate is unclear. In fact, the cause and effect relationship was not developed for the numeric target as stated in the comment. Rather, the relationship was developed between the loading and its response. The steps are well described in the TMDL document.
01-006	DRBC, States and EPA need to develop an approach for conducting a Use Attainability Analysis or some other adaptive management approach to develop attainable water quality standards. Significant evidence exists that the proposed TMDL cannot be attained; therefore, EPA/DRBC/States should perform a UAA to formally document if the PCB TMDL is or is not attainable.	See Theme 2 response.
01-007	The source of atmospheric PCB is global and cannot be controlled in the proposed PCB TMDL.	Air monitoring data coordinated by Rutgers University demonstrates that important local atmospheric sources exist within the basin. These local sources are targeted for identification and control through implementation of this TMDL. Implementation may not be limited to within basin sources, however. If, in the course of track down and identification, out of basin sources prove to be important, steps for controlling these sources will also be considered in any future TMDL revisions.
01-008	Rural and urban stormwater [in other locations] exceed the water quality standard.	Elevated PCB concentrations and their impacts occurring outside the basin are beyond the scope of the TMDL.
01-010	Delaware River Basin rainfall and air concentrations exceed the criteria.	See response to comment 01-007.
01-011	Rinsate, Equipment, and Method blanks (1668A) exceed the water quality standards.	Samples results were not adjusted for blank concentrations in Stage 1. The presence of blank contamination does not prove a false positive. See Theme 1 response.
01-012	DRBC never attempts to demonstrate that its intended "fishable" designated use is in any way attainable. DRBC must determine if the use is attainable.	See Theme 2 response.

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Letter ID	Public Comment	Response
01-013	No Demonstrated Wastewater Treatment Technology Exists to meet proposed Wasteload or Load Allocations.	A TMDL and its allocation scheme should be based on the assimilative capacity of the waterbody for a given pollutant, not on the availability of treatment technology of reductions required, to attain the applicable water quality standards. See Theme 4 response.
01-014	Cost of compliance for point discharges, for nonpoint sources and future development is excessive.	See Theme 4 response.
01-015	The analytical method recommended by DRBC in the development of the Water Quality Model and the PCB TMDLs is inaccurate and imprecise at the detection limits required for this purpose.	The TMDL is based on the best data available at the time the study was performed. Qualitative and quantitative determination procedures are identified in the methodology including; signal to noise ratios, retention times, internal calibration standards and recovery all have to meet method requirements. See Theme 1 response.
01-016	DRBC, in its request that point source dischargers perform monitoring in support of the PCB TMDL study, did not specify the use of a particular analytical method, but did require an analysis of PCB congeners that was consistent with USEPA Method 1668.	Comment noted.
01-017	DRBC did not adequately define the intended use and appropriate data quality requirements for the PCB TMDL study when it was initiated. As a result, the collected data appears to be insufficient to support the promulgation of the PCB TMDLs.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data were used is not required in a TMDL. Where DRBC used method 1668A, sample results were rigorously scrutinized by the lab. Target concentrations were determined by isotopic dilution/internal standards methods and sample specific detection limits were determined. Laboratory qualifier flags were defined prior to analysis. Method blanks were collected and analyzed as part of a Ongoing Precision and Recovery program. System and laboratory performance was undertaken for all analysis; retention time, recovery data, ion abundance ration were compared to method requirements. Those analyses which did not meet method requirements were either reanalyzed or noted in the QA/QC report.
01-018	DRBC has not demonstrated that the data used to develop estimates of the PCB loading to the Delaware Estuary are reliable, and in fact, appears to have based estimates on data that do not meet the criteria for the analytical method, standard practice, or QAPP requirements.	See response to comment 01-017.

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Letter ID	Public Comment	Response
01-019	The QAPP developed by the Coalition includes a data validation process that is consistent with standard data validation practice.	Comment noted.
01-020	Data from Method 1668A cannot be considered reliable and accurate if the potential impact of laboratory or field contamination on sample results is ignored.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not a requirement of a TMDL. Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive. See Theme 1 response.
01-021	Until interlaboratory validation of Method 1668A is completed, data from Method 1668A should only be used for screening purposes, unless the data have been validated by a qualified reviewer independent of the laboratory generating the data, consistent with current data validation guidance.	In all instances the best data available data was used. EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company). Since data validation protocols were not universally discussed and agreed upon for the TMDL, data from all sources were treated equally in order to estimate discharger concentrations and calculate loadings. That is, all detected concentrations were used to loadings calculations.
01-022	DRBC did not address false positive results in the PCB TMDL Report, and must do so in order to satisfy QA/QC requirements	Neither sample nor ambient results were adjusted for blank concentrations in Stage 1. Blank contamination does not prove a false positive. See Theme 1 response.
01-023	DRBC must revisit the Method 1668A data sets and apply the appropriate reporting limit, i.e. the minimum level of quantitation, rather than the minimum detection level or estimated minimum detection level.	The TMDL was based on the best available data. Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used to calculate loadings.
01-024	Consistent and achievable interlaboratory quantitation limits, based on sound scientific principles and considering all potential sources of error and uncertainty, must be developed.	The interlaboratory validation study is underway for Method 1668A. We encourage and support this process.

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Letter ID	Public Comment	Response
01-025	DRBC should consider other potential limitations known to be associated with Method 1668A (retention time shifts and co-elution of congeners due to column degradation or other causes). Potential limitations of Method 1668A are discussed in greater detail in comments on the Method in "Comments on EPA's Proposed Standards for the Use or Disposal of Sewage Sludge" prepared by the Alliance of Automobile Manufacturers, et al. (March, 22, 2000). Comments are included in the appendices.	Agreed. Potential limitations regarding the method will be more fully explored in the interlaboratory validation study currently under way, and incorporated into the revised methodology.
01-026	DRBC provided no information on data quality review in the PCB TMDL Report, thus preventing a determination as to whether the data quality goals of the DRBC QAPPs have been satisfied.	There are currently no requirements that the supporting document for a TMDL contain a description of the data quality review. The model calibration report does describe the data and procedures used to develop model inputs including penta-PCB loadings. Where DRBC used method 1668A, sample results were rigorously scrutinized by the lab. Target concentrations were determined by isotopic dilution/internal standards methods and sample specific detection limits were determined. Laboratory qualifier flags were defined prior to analysis. Method blanks were collected and analyzed as part of a Ongoing Precision and Recovery program. System and laboratory performance was undertaken for all analysis; retention time, recovery data, ion abundance ration were compared to method requirements. Those analyses which did not meet method requirements were either reanalyzed or noted in the QA/QC report. Further description of the protocols used to validate data will be established for the Stage 2 TMDLs.
01-027	In the PCB TMDL Report, DRBC erroneously ignored blank contamination indicating false positives.	Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive. See Theme 1 response.
01-028	DRBC failed to provide technical or legal justification for its use of a one-half detection limit for non-detected values.	Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. Project specific justification is not required. See Theme 1 response.
01-029	Long-term decadal scale behavior of DRBC's model suggested that the estuary response time may be longer than that predicted by the model. Consequently, evaluations of PCB source management strategies using the results from DRBC's model should be interpreted cautiously.	It is anticipated that some decadal scale model refinement will be performed as part of Stage 2. Given that the predicted system response is on the order of decades in all cases, long term monitoring will ultimately document system response and the effectiveness of management strategies.

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Letter ID	Public Comment	Response
01-030	The summary figure of PCB loads to the estuary presented in the model calibration report (Figure 2.1, p. 37) was not representative of all the sources of PCBs. It neglected (i) gas absorption, (ii) downstream boundaries (i.e., Atlantic Ocean and the C&D Canal), and (iii) current PCBs in the sediment bed. Accounting for these sources, the current contribution of point sources to PCBs in the water column on a concentration basis was small and less than 9% throughout the estuary. At the critical location, point source discharges contributed less than 7% of the PCB contribution to the critical location (i.e., river mile 68.1). The average of all the model segments including CSOs was 7% and the volume-weighted average over the estuary was 2%.	Figure 2.1 depicts the external loads. Fluxes and tidal boundary loads are most appropriately computed within the model framework. As indicated by the commenter, gas phase air concentrations, downstream boundaries, and sediment concentrations are important sources of PCBs but are addressed in these TMDLs.
01-031	The model predicts that (i) very aggressive point source control strategies in which PCB discharges are eliminated will not result in meaningful progress towards achieving the water quality criteria and (ii) significant reductions relative to contemporary concentrations from the less easily managed sources will be necessary in order to make progress towards achieving the water quality criteria.	Achieving the WLAs alone will not be sufficient to achieve the TMDL, but improvements would be made. Substantial reductions will also be needed for the other source categories in any future TMDL revisions.
01-032	The present approach incorporated in the water quality criteria assumed that the fish and water concentrations were at a constant ratio (e.g. constant BAF/BCF). This was not applicable to the present situation in the Delaware Estuary because the recent historical data demonstrated that the ratio of fish tissue PCB concentrations to that of the water column was increasing. Since reducing PCB concentrations in fish tissue was the ultimate goal of the PCB TMDL, the value of the present approach is severely limited. A food chain bioaccumulation model is needed to relate fish tissue PCB concentrations to that in the ambient water column and sediment bed.	Regulations at 40 CFR Part 130 require that a TMDL be based on the applicable water quality standards, which is the current DRBC human health water quality standards for total PCBs. These standards use a bioconcentration factor (BCF) not a bioaccumulation factor (BAF). We do not agree that the currently available data indicate that the ratio of the fish tissue concentrations of PCBs to the water concentrations of PCBs is changing. Longer term monitoring is needed to ultimately determine whether this ratio is changing or whether perceived changes are normal variability within a currently stable regime. Additional monitoring of fish tissue concentrations in the estuary by the DRBC and the states is continuing. A food chain model may be considered for Stage 2.

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Letter ID	Public Comment	Response
02-001	The proposed methodology has not been validated by the EPA or any other Federal/State regulatory body. PHI companies have concerns about using a monitoring method that has not undergone rigorous quality assurance and quality control (QA/QC) procedures to establish the validity of the method. In the absence of an intensive validation process, it is not possible to know if the method produces reproducible, accurate and precise results. The requirement to use an unvalidated monitoring method is further complicated by the unavailability of qualified and approved/certified laboratories that can perform this tests at a reasonable cost and within the required time frame.	Method 1668A has undergone a single laboratory validation and is currently undergoing an interlaboratory validation study as per EPA protocols. Furthermore, EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter dated May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company).
02-002	The proposed PCB TMDLs for Group 1 and Group 2 fail to specify monitoring frequency. The proposal should be revised to correct this deficiency. In addition, the rules should provide for a reduction in the required frequency of monitoring for a facility at which monitoring data demonstrates no increase or decrease in PCB discharge.	This is beyond the scope of the TMDL. Issues pertaining to monitoring frequency are handled by the applicable Federal and state requirements, specifically the state permitting program. However, monitoring frequency for Group 1 and 2 discharges is currently under consideration by the DRBC and State permitting agencies.
02-003	For facilities with outfalls falling into different TMDL groups, the proposed PCB TMDLs should be revised to facilitate the placement of all outfalls in the group that characterizes the majority of the facility's outfalls. With this revision, outfalls will continue to be monitored during Stage 1 implementation regardless of which group a facility is placed.	Many individual outfalls have unique characteristics and therefore one outfall cannot be used to characterize the majority of a facility's outfalls. Additional monitoring is required for Group 1 and 2 discharges in Stage 2.

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Letter ID	Public Comment	Response
02-004	The proposed PCB TMDLs require proportionate reductions equally across each zone. This means that facilities with already low baseline discharges are required to expend greater resources to reduce these already low concentrations than facilities with significantly greater PCB discharges. For example, WLAs developed for the majority of point source dischargers are higher than the already low current loadings for PHI company facility discharges. In addition, the proposed WLAs for low baseline discharges are lower than the ambient background levels. These regulatory provisions are inherently inequitable in that they impose greater burdens on point source dischargers that do not make a significant contribution to PCB contamination in the Delaware River. The proposed requirement to identify and control PCBs to the 0.00004 mg/day threshold imposes significant expense on PHI company facilities without any guarantee that such expenditures would satisfy the water quality criteria and provide any greater protection to human health and the environment. The inequities of the proposed TMDL rule could be remedied by establishing, at least for low dischargers, a site-specific reduction that can be achieved by the facility.	The regulations in 40 CFR Part 130 require that a TMDL and its allocation scheme be developed based on the assimilative capacity of the waterbody for a given pollutant, not based on the cost-effectiveness of the level of reductions required. This TMDL was designed to attain applicable water quality standards and, ultimately, to achieve the designated uses of the Delaware River including the protection of human health. See Theme 4 response. DRBC policy was established in the TMDL report and may be revised for the Stage 2 TMDL.
02-005	The proposed PCB TMDLs do not clearly outline how nonpoint sources will be controlled and reduced.	In April 2003, EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also an Appendix to the TMDL (Appendix 1, page 12). This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments. Additionally, DRBC has organized a broad-based stakeholder committee to identify both immediate and long-term actions to reduce source PCB loadings. The "Implementation Advisory Committee," to date has been charged with identifying activities which will address nonpoint sources, among others, to reduce PCB loads.
03-001	The Stage 1 PCB TMDL Regulation unreasonably and inequitably allocates loadings between point sources and nonpoint sources. The allocation of PCB loadings should be more proportionally allocated to nonpoint sources and point sources (the LA should be lowered, and the collective WLAs should be increased).	EPA disagrees and finds that the TMDL reasonably allocates the loadings between the various sources. See Theme 4 response.

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Letter ID	Public Comment	Response
03-002	The allocation of substantial loading to the upper Delaware and the tributaries enables upstream sources, including upstream point sources, to discharge PCBs at the expense of the point source dischargers in Zones 2-5. The fact is that the largest sources of loadings should represent the greatest opportunity for reduction. Thus, the upper Delaware and the tributaries should be subjected to greater reductions, and the implementation plan should set forth measures to ensure those reductions. Because the upper Delaware and the tributaries are major sources of PCB loadings throughout Zones 2-5, the implementation plan should address those loadings first. However, the Stage 1 PCB TMDL Regulations focus only on reduction of sources within Zones 2-5, and do not provide any real strategy for reduction of upstream sources. That approach is illogical. Reductions must begin upstream. While the draft regulation indicates that the tidal flows act to reverse the general rule that upstream water quality effects downstream water quality, Boeing respectfully suggests that tidal influences do not have sufficient reversal effect throughout estuary to even begin to diminish the impact of upstream sources.	Allowable loading from the upstream portions of the Delaware River into Zone 2 is appropriately considered in the TMDL development by assigning allowable boundary concentration at Trenton, New Jersey. Note that because the TMDL was developed for the Zones 2 through 5, an identification of a reduction strategy for upstream sources goes beyond the scope of the TMDL. However, the upper portions of the Delaware River have recently been identified on New Jersey's proposed Clean Water Act Section 303(d) list of impaired waters for PCBs.
03-003	It is unreasonable to subject Boeing's four storm water-only outfalls (with low concentrations of PCBs) to the WQBELs as proposed in the draft regulation. Until a meaningful structure is put in place for reducing the air and rainfall deposition of PCBs, storm water outfalls with low concentrations of PCBs should not be subject to WQBELs. The implementation strategy as proposed in the Stage PCB TMDL Regulation fails to set forth a strategy to address those depositions. Boeing respectfully suggests that the regulation be revised to eliminate the WLA for storm water outfalls with low concentrations of PCBs, or in the alternative, provide a WLA and impose the WQBELs by source category or facility.	The DRBC is coordinating with Rutgers University on a project to track down local atmospheric sources in the basin and use this information to reduce these sources to the atmosphere. However, we disagree with the proposed elimination of WLAs for storm water outfalls with low concentrations of PCBs. Loadings from storm water outfall are influenced by many factors including concentration and flow and therefore are an important component of WLAs.
03-004	The WLAs are so low that they exceed the sensitivity of any sampling method (including Method 1668A). The concentrations of PCBs that would be necessary to meet the WLAs are below the detection limits of any sampling method. Accordingly, there is no means to demonstrate compliance with the WLAs.	A TMDL, and the WLAs and LAs identified in the TMDL, are based on the assimilative capacity of a waterbody for a given pollutant. Consideration of detection limits of sampling methodologies is not required in determining the appropriate WLAs to attain and maintain the applicable water quality criteria. See Theme 4 response.

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Letter ID	Public Comment	Response
03-005	The draft PCB TMDL Regulation fails to set forth a strategy to reduce PCB loadings from nonpoint sources. The regulation only addresses PCB loadings from point sources. The TMDLs cannot be met without implementation of strategies to fully address the nonpoint sources. Without a meaningful structure in which to address the nonpoint source loading, the NPDES permittees in the basin will shoulder all of the burden to decrease loadings and the TMDLs will still not be met. Without a workable implementation plan for the reduction of loading from nonpoint sources, the TMDLs are deficient and cannot be achieved. The Stage 1 PCB TMDL Regulation should be revised to include specific implementation measures for the reduction of nonpoint source loadings.	See Theme 3 and 4 responses. The DRBC has established the Implementation Advisory Committee ("IAC"), which is tasked with developing creative and cost-effective strategies for reducing loadings of PCBs and achieving the TMDLs for PCBs in the Delaware Estuary. The IAC will address all sources of PCBs including nonpoint sources. The IAC will develop strategies and make recommendations for the Stage 2 TMDL.
03-006	The Stage 1 PCB TMDL Regulation should not assign WLAs to individual outfalls, but rather should assign WLAs to categories of point sources within each zone.	See Theme 4 response.
03-007	The Stage 1 PCB TMDL Regulation improperly includes municipal storm sewer systems (MS4s) as nonpoint rather than point sources. The data used to develop the draft regulation indicates that MS4s contribute significant PCB loadings to the estuary. MS4s were not included as point sources, but were instead included as nonpoint sources.	MS4s were considered as point sources in the final TMDL. See Appendix 6 of the TMDL report for the methodologies used to address MS4s.
03-008	The Stage 1 PCB TMDL Regulation and the underlying data are flawed or incomplete, and the regulation should not be approved until the issues are resolved. EPA and DRBC do not have (a) an accurate picture of the regional background concentrations of PCB in the estuary airshed or the impact of gas phase deposition, (b) an accurate assessment of the contribution of contaminated sites (all of which are estimated), (c) a complete understanding of the loadings contributed by municipal storm sewer systems, or (d) an accurate assessment of the sources of upstream PCB loadings. In addition, the Stage 1 Regulation fails to consider existing PCBs in stream sediment as a nonpoint source. Furthermore, in developing the Stage 1 PCB TMDL, the 1996 303(d) list was utilized. That list does not include the upper Delaware or the tributaries to the river. Therefore the PCB loadings in those streams and segments are not being addressed in the current process.	(a) Data collected by Rutgers University at seven sites in the airshed of the Delaware Estuary and were used to develop regional air background concentrations, and to develop relationships describing the flux of penta-PCBs between the air and water. (b) The TMDL was based on the best available data at the time. We agree that a more refined and comprehensive estimate of the contaminated site load is desired. (c) MS4 loads were incorporated the final TMDL. (d) Locations of upstream sources of PCBs will be evaluated in cooperation with the Implementation Advisory Committee. See Theme 3 response.

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Letter ID	Public Comment	Response
03-009	The policy-based assumption (expressed in April 16, 2003 letter from Regional Administrators from Regions II and III) was that there is higher fish consumption in the lower portion of the estuary, lowering the TMDL in that segment. That assumption results in higher TMDLs in the upper reaches of the estuary than in the lower portion of the estuary. However, no data or basis for the fish consumption is provided in the Stage 1 Regulation. Additionally, there is no established relationship between fish tissue concentrations and water column concentrations.	See Theme 1 response.
03-010	The Technical Advisory Committee and the Stage 1 Regulations provide no basis or reasoning for establishing a 5% margin of safety. EPA guidelines only require a MOS, but do not establish an appropriate value. The 5% MOS number appears to be arbitrary.	An explicit five percent for the Margin of Safety was based upon the use of a one-year cycling period for the hydrodynamic and water quality model that mimics the period of record for the two major tributaries to the estuary, rather than design tributary flows. This MOS was also based upon the use of tide data, precipitation data and the actual effluent flows that occurred during the one-year cycling period. EPA finds these recommendations of the expert panel reasonable and supported by evidence, and adopted them in these TMDLs.
03-011	The human health effects of PCBs have not been demonstrated in a significant study. EPA's studies have shown a statistically significant incidence of certain health effects in mice, but not cancer in humans.	See Theme 2 response.
04-001	Stage 1 does not require specific PCB load/discharge reductions from the 142 existing, potential point sources. Instead it requires increased monitoring, a PCB minimization plan using BMPs, and implementation of "appropriate, cost-effective PCB minimization measures.	The TMDL includes individual numeric WLAs for each of the 142 point sources where data show that the discharge causes or contributes to an exceedance of applicable water quality criteria. In addition, the TMDL itself establishes categorical WLA for MS4s within each zone to address direct or indirect communities that likely discharge into the Delaware River. This information, along with the existing loadings specified, show the necessary PCB reductions necessary to attain water quality standards. The TMDL does not require PCB minimization plans and related activities. Rather, the TMDL report discusses various strategies to implement the TMDL WLAs to reduce PCB discharges from point sources and the general NPDES permitting requirements the states may use to implement the TMDL. Additionally, the DRBC has an Implementation Advisory Committee, which has been charged with identifying activities which address nonpoint source, among others, to reduce PCB loads. See Theme 4 and 5 responses.

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Letter ID	Public Comment	Response
04-002	Does not require quantified or quantifiable reductions of point source loads.	The TMDL includes individual numeric WLAs for each of the 142 point sources where data show that the discharge causes or contributes to an exceedance of applicable water quality criteria. In addition, the TMDL itself establishes categorical WLA for MS4s within each zone to address direct or indirect communities that likely discharge into the Delaware River. This information, along with the existing loadings specified, show the necessary reductions.
04-003	Automatic reopeners should be used for all permit subject to the TMDLs. The TMDL as designed will put off implementation of many sources until 2010. Requirements will only apply to dischargers as their permits expire.	See response to comment 04-006.
04-004	Monitoring requirement will not inform State 2 as asserted. Permit reissuance date will not provide timely monitoring and data collection.	The States are working with DRBC to quickly require dischargers to conduct the necessary additional monitoring via letters issued by DRBC under their authority. This will ensure timely monitoring and data collection.
04-005	PCB minimization plans are not an effective or appropriate strategy for reducing PCB loadings. Plans are to be created by the dischargers and are not required or intended to secure known, quantified reductions.	See Theme 5 response. It is not always possible to judge the effectiveness of waste minimization plans before they are implemented, although the plans will be required and intended to secure real reductions in loads.
04-006	Reopen all point source permits December 16, 2004 and put in place the monitoring and planning requirements immediately.	EPA, on behalf of the States, understand and appreciate the comment. As discussed in the draft TMDL, EPA understands that the States will include such implementation requirements in all permits issued, reissued or modified after the establishment of the TMDL. The States will aggressively work to accomplish the incorporation of the TMDL requirements into permits in the most expeditious manner practicable taking into account agency workloads and resources. In addition, the States are working with DRBC to quickly require dischargers to conduct necessary additional monitoring via letters issued by DRBC under their authority.
04-007	Require regulatory review, public comment and regulatory approval of all minimization plans by a date certain.	The States have indicated that NPDES permits modified to address the TMDL requirements will include a required date for submission of the PCB minimization plans, and that regulatory review will be expedited as resources allow. These plans will be public information and available. Even though PCB minimization plans may not require formal notice and public comment, the States will make them available for public review and comment.

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04-008	Require minimization plans to articulate the level of PCB reductions they will achieve.	Due to the wide variation in possible industrial and municipal sources of PCBs and the unknown levels of contamination of these sources, it is not appropriate to assign a set reduction in a minimization plan. Also, due to the extreme PCB reduction low levels required to meet the TMDL, it is appropriate for the point sources to eliminate or reduce to the maximum extent possible any sources found.
04-009	Require full implementation of minimization plans by a date certain	When the States reissue or amend the NPDES permits issued, EPA understands that permit will require implementation of the PCB minimization plan in accordance with the reviewed and approved schedule contained in the plan.
04-010	Focus of PCB minimization efforts must be on pollution removal effectiveness, not cost effectiveness	See response to comment 24-002.
04-011	The emphasis of the TMDL is on the cost to the polluter, not the resulting cost of pollution to our River and the communities who depend upon and appreciate it.	The TMDL is the computed sum of WLAs, LAs, and MOS sufficient to meet applicable water quality standards regardless of costs. There is no inherent emphasis. Implementation of the TMDL contemplates coordinated effort to identify and remove sources of PCBs in the watershed. Source removal will result in real reductions of PCB loads from all source categories, not just point dischargers. This strategy is the most appropriate means of effecting significant and permanent water column concentration reductions in the Delaware River.
04-012	The primary focus of TMDL requirements must be on the effectiveness of PCB removal and not cost of cleanup to the polluter.	See response to comment 24-002.
04-013	Future reduction strategies can be used to modify LAs and WLAs, but cannot be used as an excuse not to act according to the law now.	EPA agrees. However, EPA believes that the plans outlined by the States for addressing how to best achieve PCB reductions consistent with the Stage 1 LAs and WLAs is in accordance with the intent and requirements of the Clean Water Act. Therefore, EPA has not put forth any excuse or reason for not acting in accordance with the law.

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04-014	It is not appropriate for the point source input into the model to be at actual discharge levels.	The comment is technically incorrect. Model calibration requires that inputs during the calibration period be specified as close as possible to the actual loading for each source category. Purposely specifying artificially high or low loadings for any category during the model calibration period would adversely impact model calibration. During the TMDL model runs, the TMDL for each zone was determined and the WLA portion was allocated proportionally among the point discharges in the zone using the proportion of current loads. Although current loads were used to allocate the TMDL WLA, that WLA represents a three order of magnitude decrease in point discharge load.
04-015	TMDL includes continuing point source discharges at current levels, not allowable permit limits. As a result, point sources with higher permit limits will be able to increase their discharges without review or limitation.	The TMDL does not continue point source discharges at existing levels. Rather, the TMDL specifies WLAs and identifies load reductions necessary from point sources to attain WLAs and water quality standards. The TMDL does not establish NPDES effluent limits. NPDES permit limits must be consistent with the WLAs specified within the TMDL.
04-016	As part of a permit reopener requirement, reduce all permitted PCB discharge limits to the quantity used in the PCB TMDL modeling.	It does not seem appropriate, based on the available data at this time, to establish a regulatory ceiling level for existing discharges of PCBs in the renewal or reopened NPDES permits. Additional effluent data will be required through the monitoring requirements imposed by regulatory agencies to better characterize the discharge. Effluent trends will be monitored, and if PCB levels increase, additional source identification or control may be required.
04-017	Tributary input to the model should not be set at the water quality standard for that waterway, but set at actual levels.	During model calibration, tributary loads were specified using observed concentrations and observed daily flows, as indicated in the Model Calibration Report. Model calibration requires that inputs during the calibration period be specified as close as possible to the actual loading for each source category. In the TMDL model runs, tributary concentrations were specified at the Water Quality Standard. Since the TMDL is defined as WLAs+LAs+MOS that will allow Water Quality Standards to be met, specifying a tributary load that would cause an exceedance of the WQS is technically incorrect and is inconsistent with the stated objective of calculating a TMDL. Inputs from major tributaries (Delaware River at Trenton and Schuylkill River) are required to assign lower than the water quality standards, not to cause exceedance at the critical location in TMDL development. EPA expects that TMDLs will be established for each major tributary.

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04-018	Permit level in discharge permits [for tributaries] needs to be brought down to actual levels so that discharges cannot increase.	See response to comment 4-015.
04-019	There needs to be some enforceable timeline on creation of TMDLs for tributaries and for these tributaries achieving water quality standards.	Allowable loading from the upstream portions of the Delaware River into Zone 2 is appropriately considered in the TMDL development by assigning allowable boundary concentration at Trenton, New Jersey. EPA notes that the upper portions of the Delaware River have recently been identified on New Jersey's proposed Clean Water Act Section 303(d) list of impaired waters for PCBs. Regarding the Schuylkill River tributary, PCB impairments were identified on Pennsylvania's 1996 Section 303(d) list. As such, PCB TMDL development for the Schuylkill River is required by April 2007 under EPA's Consent Decree.
04-020	It is inappropriate to assign assimilation capacity to river bottom sediments that PCBs attach to. The TMDL document considers burial of PCBs in Estuary sediments to be a net loss to the system and include it in the model as assimilation capacity, thereby allowing an equivalent level of PCBs to be allocated to dischargers and therefore continue to enter the Estuary system via ongoing sources. Characterizing and including burial in the sediments as assimilation capacity is not appropriate. Dredging, deep draft ships, etc can resuspend sediments and associated toxins into the water column and the system. Thus, while there may be a perceived temporary loss of these PCBs to the system, the reality is that these toxins are in fact still in the system and subject to reintroduction due to foreseeable and unforeseeable causes in the future -- there is not a total and permanent loss to the system.	The model was developed to track the processes in the system as nearly as the available data would allow. Sediment burial is included because sediment burial occurs. Other commenters have suggested that episodic events be considered in Stage 2. Refined incorporation of the impacts of dredging, both resuspension and removal, may also be considered in Stage 2. Episodic sediment resuspension associated with deep draft navigation and vessel grounding could also be considered if there is sufficient data to characterize the net impacts. However, to artificially adjust the computed water column results to eliminate the effects of sediment burial is technically infeasible and unrealistic. The sediment burial rates were determined from the marsh core information, sonar scan results, decadal scale consistency check, and professional judgment. Again, the final sedimentation rates (gross settling and resuspension rates of PDC) were determined through short-term calibration results and decadal scale consistency check.
04-021	If DRBC relied on Army Corps information regarding resuspension of sediments into the water column (a study released as part of the discussion and debate regarding the Delaware River Deepening proposal) as an information source, what consideration was given to the fact that these studies were conducted on different waterway systems with different flow, tidal and circulation regimes?	DRBC did not rely on the referenced information.
04-022	This TMDL is not independently complete and final.	EPA disagrees. EPA finds that the TMDL meets all regulatory and statutory requirements. See response to comment 04-023.

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04-023	No enforceable mechanism, funding or commitment to establish Stage 2.	While EPA supports the development and establishment of a Stage 2 TMDL as a refinement of Stage 1 efforts, EPA finds that this Stage 1 TMDL meets all regulatory and statutory requirements. EPA continues to believe that the TMDL process is iterative and expects revisions as better monitoring data and analysis becomes available. EPA is establishing the Stage 1 TMDL which is effective until and unless it is replaced or amended. The comment regarding future TMDL establishment plans does not undermine the integrity of the Stage 1 TMDL.
04-024	This TMDL does not fulfill the language or spirit of our consent decree.	EPA respectfully disagrees. These TMDLs fulfill both the spirit and requirements of the EPA Consent Decree (D.De) (as amended) to establish a final TMDL for PCBs by December 15, 2003. These TMDLs are based on monitoring and modeling efforts that are considerably more comprehensive and rigorous than most TMDLs. EPA finds that this TMDL meets all regulatory and statutory requirements.
04-025	We support use of a 5% explicit margin of safety in this TMDL.	Comment noted.
04-026	On Table 4, why are the "Allowable Concentrations or Loadings" larger than "Concentration at the Critical Location". This waterway is already in exceedance for PCB loadings -- this table makes it appear as though we would allow even greater loadings.	As indicated in Table 4, the allowable concentrations or loadings in the 6th column will yield the concentration at the critical location, as shown in the 5th column. These are two expressions of the same mass of PCBs related by the contribution factor, not higher and lower allowable loadings.
04-027	TMDL calls for discharger created reduction plans that are more concerned with the cost to the polluter than with their effectiveness at reducing PCBs in the River and these plans may never even be fully implemented according to the TMDL proposal.	See response to comment 4-005. It is not always possible to judge the effectiveness of waste minimization plans before they are implemented, although the plans will be required and intended to secure real reductions in loads. EPA notes that it is good government to estimate and consider what costs will be incurred to address the overall problem. This does not mean that applicable NPDES permitting requirements are in any way relaxed by that consideration.
04-028	This TMDL relies heavily on a Stage 2 TMDL that in fact may never happen.	See response to comment 04-023.

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05-001	EPA has issued draft TMDLs that appear to focus the entire burden of making loading reductions on the point source dischargers to the River, even though there EPA has provided no evidence that those reductions will result in attainment of the standards, or that the standards can ever be achieved. We urge the Agency to reconsider this course of action. It is clear, from the information presented in the Draft TMDLs, that even if the point sources were allowed no discharge of PCBs at all, the resulting reductions would not lead to attainment of the standards in the River. Yet, as to these sources (much of whose PCB loadings can originate in their intake waters, which can be drawn from the River in the first place), the Agency calculates individual wasteload allocations for each individual source, and then specifies that, in addition to being required to develop and implement a minimization program, the sources will have to meet control requirements that are consistent with those wasteload allocations. Those allocations require reductions in loadings of over 99% from each of those sources. The agency has identified no methods by which such reductions can be attained, let alone methods that are technically and economically feasible.	See Theme 2 and 4 responses. The TMDL establishes LAs and WLAs for a wide variety of sources to the river, in addition to point source dischargers to the river. While production of PCBs has been banned, PCBs are still found in active uses which are allowed. We agree that it is important to assure that these PCBs receive appropriate handling, treatment and disposal as expeditiously as possible.
05-002	The lack of a feasibility analysis connects to a more fundamental problem with the Draft TMDLs: EPA has not shown that the water quality standards that they are based on can be attained. In the case of the Draft TMDLs for the Delaware River, EPA has presented no evidence that the standards are attainable. To reach those standards, which range as low as 7.9 parts per quadrillion, would require greater than 99% reduction in loadings from all sources, point and nonpoint. We are not aware of any means by which those reductions could be accomplished, let alone means that would be economically feasible for the affected parties. Those parties should not be subjected to new requirements without some demonstration that those requirements are supported by a valid TMDL analysis, which projects that the resulting loading reductions will bring the waterbody in attainment of the standards. EPA has not provided such an analysis for the Delaware River. In such a situation, the attainability of the standards should be assessed before EPA proceeds further in the TMDL process. If it is determined that the standards are not attainable, the responsible agency should revise the standards appropriately.	See Theme 2 response.

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05-003	There are serious questions as to whether PCBs can be measured or even detected reliably at the levels at issue in the Draft TMDLs. At present, Method 1668A for measuring PCBs has not been validated or approved for use in 40 CFR Part 136. Moreover, that method has only estimated minimum detection levels (EMDLs) and minimum levels (EMLs), and there is no indication that these levels are truly representative of what laboratories generating data for the Draft TMDLs might be able to achieve. Until it has been subjected to a validation study, which is opened to public comment, and the method is then determined by EPA to meet all of the criteria for scientific acceptance, Method 1668A should not be used to make regulatory decisions.	Method 1668A is currently undergoing an interlaboratory validation study as per EPA protocols. EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company). Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present.
05-004	The way in which EPA has interpreted analytical data can result in overestimating the loadings from point sources. We are also concerned about aspects of how EPA utilizes the data that have been generated using Method 1668A; in particular, the Agency's decision, in estimating point source PCB loadings, to use a value of ½ the detection limit when a congener is undetected (as indicated in Appendix 1), can substantially overstate the mass of PCBs entering the ecosystem. There are a total of 46 pentachloro PCB congeners with EMDLs in method 1668A; those EMDLs range from 103 to 278 pg/L. Thus, use of ½ the detection limit for any individual congener, when it is not detected, would result in a conclusion that due to that individual congener alone, the Delaware River has PCB levels above the water quality standards (which range from 7.9 to 44.8 pg/L) and therefore is impaired. Applying this assumption (using ½ the detection limit for all non-detected congeners) to all 46 penta congeners would result in a determination that the River has a PCB level of 2396 pg/L, even in a situation where none were detected or actually present. This assumption, therefore, gives an extremely unrealistic picture of the actual state of the waterbody, and should not be used in developing PCB TMDLs for the Delaware River.	We disagree that the point discharge contribution is drastically overstated. The methodologies for sample collection were reviewed for consistency. The differences in analytical method do not lead to an overestimation of PCB concentration. Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment of non-detect data is well established in the literature. Since the true concentration of a non-detect sample is somewhere between zero and the detection limit, setting the concentration equal to ½ the detection limit is equally likely to underpredict or overpredict the true concentration.

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06-001	The concept of the TMDL program under the Clean Water Act was a good one - provide a mechanism for cleaning up polluted waterways. The concept was, of course, powerful because it went after the source of contamination on waterways and created a system where that contamination was reduced. This current TMDL breaks both the broad concept of the program as well as its necessary details, and is especially egregious because of the Delaware's status as a drinking water source, and its civic prominence. The proposed PCBs TMDL violates the requirements of the law and will not effectively reduce PCB contamination of the Delaware River anytime soon.	Comment noted. See Theme 3 response.
06-002	The proposed TMDL does not include any quantified or quantifiable reductions in PCB loadings to the River. Instead, it requires more monitoring, and for dischargers to develop their own BMP plans for reducing PCBs. The primary guidance given in the TMDL for these PCB minimization plans is that they focus on use of cost-effective measures, as opposed to measures that are most effective at reducing PCBs. Monitoring, discharger plans, and "cost-effective" "appropriate" BMP plans with no requirement for full implementation cannot provide us the PCBs reductions and protections we need and the law requires.	The TMDL identifies numeric allocations and reductions necessary to attain applicable PCB criteria. EPA believes that the approach to include development and implementation of PCB minimization plans are an appropriate step that may result in achievement of the individual WLA. These pollutant minimization plans must be implemented fully.
06-003	The staged approach embodied in the proposal is flawed and provides no assurance of timely PCB reductions or even completion of the stated stages themselves. As a result of the staged approach and EPA's failure to require reopening of permits for implementation of the TMDL requirements (instead relying on existing expiration timelines) means that Stage 1 will not result in the monitoring data EPA asserts it needs to do Stage 2 (i.e. many of the permits don't expire until 2004 or 2005 and in some cases 2006, therefore they cannot provide data in time, if at all, for a 2005 Stage 2 deadline). And Stage 2, in many instances, won't even be required of many sources of PCBs, including some of the more significant point sources, until the year 2010, 7 years from now. There is no commitment that Stage 2 ever be implemented. The TMDL currently being proposed relies heavily on future action in a Stage 2 TMDL. And yet there is no enforceable commitment to, or mechanism for, ensuring that Stage 2 will ever even happen.	See Theme 5 response regarding permit reopener issue. While EPA supports the development and establishment of a Stage 2 TMDL as a refinement of Stage 1 efforts, EPA finds that this Stage 1 TMDL meets all regulatory and statutory requirements. EPA continues to believe that the TMDL process is iterative and expects revisions as better monitoring data and analysis becomes available. It is EPA's intention that the Stage 1 TMDL will be established and effective until and unless replaced or amended. The comment regarding future TMDL establishment plans does not undermine the integrity of the Stage 1 TMDL.
06-004	The PCBs TMDL being proposed cannot be defined as a final TMDL.	EPA finds that this TMDL meets all regulatory and statutory requirements. See Theme 3 response.

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06-005	The PCBs TMDL being proposed will not provide timely and needed reductions in PCBs contamination of the Delaware River, fish and wildlife.	EPA believes needed reductions in PCBs in the Delaware River will be taking place as expeditiously as possible.
06-006	The PCBs TMDL being proposed needs to include quantified, required reductions in PCBs from point and nonpoint sources of contamination and include an automatic reopener clause to provide for immediate implementation.	The TMDL quantifies the load reductions necessary from point and nonpoint sources to attain water quality standards. See Theme 5 response and response to comment 04-006.
06-007	One thing we do like is that an explicit margin of safety of 5% was included as part of the TMDL - that EPA got right.	Comment noted.
07-001	The listing of this facility (NPDES No. NJ0004669) in Appendices 2 and 3 as "Georgia-Pacific" is incorrect, since this facility was sold to NGC Industries in 2001. This ownership is verifiable in EPA's PCS system. Please correct Appendix 2, Table 2-1 (Serial No. 43) and Appendix 3, Table 3-3, Page ix to delete the reference to Georgia-Pacific and reference instead "NGC Industries". Please also change any other report references to Georgia-Pacific.	Changes indicating NGC Industries as the new owner have been made in the TMDL document.
08-001	The City of Philadelphia wishes to thank the Delaware River Basin Commission (DRBC) for its extraordinary efforts in putting this TMDL together. This TMDL is an enormously complicated one, from both a scientific and policy perspective.	Comment noted.
08-002	Request that the TMDL not utilize any of the PCB influent data from the Philadelphia Water Department's (PWD's) Southeast and Southwest Plants in determining Combined Sewer Overflow (CSO) loads.	As stated in the calibration report for the penta-PCB water quality model, treatment plant influent data for the City of Philadelphia's Southeast Plant was not used to determine CSO loadings since a deliberate spill of PCBs was introduced into the collection system for this plant, potentially affecting the 1996 measurements used to calculate the loadings. Similarly, the data for one of the influent samples collected at the City's Southwest Plant was also not used in the loading calculations since this sample may have been influenced by wastewater from the facility that treats sewage sludge from the Southeast Plant.
08-003	Figures 29 through 32 of the TMDL should be redone. Currently these figures exclude two of the largest loads--boundary conditions and contaminated sites. By excluding these loads the pie charts are misleading, making the cited loadings appear proportionally greater than they actually are.	Figures 29 through 32 have been modified in the final TMDL report.

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08-004	We must continue in Phase 2 to identify and quantify all loadings to the Estuary. We must refine our understanding of already identified loads (point sources, non point sources, contaminated sites, tributaries and sediment. We must also be sure that we are not missing any other sources of loadings. (For example are there any NPDES permitted loadings of PCBs discharging to the Delaware, Schuylkill or other tributaries.)	Comment noted. Additional source characterization will be conducted during Stage 2.
08-005	Please delete the words, "and will likely reflect application of the procedures set forth in the DRBC Water Quality Regulations." The allocation methodology will be determined by the Implementation Advisory Committee (IAC) after extensive discussion and debate. The existing DRBC Water Quality Regulations should not limit or restrict the IAC in any manner. As currently written it restricts the flexibility of the IAC.	The section and sentence of the TMDL Report referred to in the comment discusses actions that are anticipated to occur in the development of the Stage 2 TMDLs. That statement is based upon the expectation that the DRBC will develop and issue wasteload allocations and load allocations that will be forwarded to state agencies for their use, as necessary, in establishing permit requirements. This DRBC action will reflect the application of any procedures set forth in the DRBC regulations. This requirement does not restrict the Implementation Advisory Committee from recommending changes to the DRBC regulations regarding procedures for establishing these wasteload and load allocations.
08-006	In Phase 2 the MS4 loadings will be separated out from the general non point loadings and calculated. There was no discussion as to how this will be accomplished. We expect that this will be discussed extensively at the Toxics Advisory Committee as well as through the joint collaborative scientific process that has been developed through Phase 1.	A categorical WLA for MS4s was separated out of the LA component in the final TMDL, and the methodology used is described within Appendix 6 of the TMDL report. During the public comment period, EPA solicited comments on proposed options for assigning such WLAs and how direct and indirect dischargers should be addressed.

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09-001	In DRBC's Executive Summary and at page 13 of the draft TMDLs, reference is made to nonpoint source "contaminated sites" and the need to address them as sources of PCBs. There is a representation at page x of the Executive Summary that "EPA's Superfund programs and the states evaluated forty-nine contaminated sites within the estuary watershed (see Appendix 4)." Appendix Table 4-1 lists these 49 sites. Beyond the fact that it's not clear whether any New Jersey sites are included in the list, Amtrak is concerned that its Consolidated National Operations Center (CNOC) is listed. CNOC is a facility from which Amtrak controls its nationwide rail operations. CNOC is located in an office building in Wilmington, DE that is not, and so far as Amtrak is aware never has been, a source of PCBs. This fact appears to be substantiated by Appendix 4-1, which represents that the daily penta-PCB load from "Amtrak CNOC" is zero. Amtrak does not know why DNREC evaluated the CNOC site, but having done so, and having determined that the daily penta-PCB load is zero, CNOC should now be removed from the list of "Contaminated Sites.	See Theme 1 response. See response to comment 11-033.
10-001	A staged approach will enable the DRBC to meet its court ordered deadline for issuance of the TMDL, and permit the continued collection of the data necessary to identify the most appropriate means to reduce PCB levels in the lower Delaware.	Comment noted.

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10-002	Rohm and Haas has two outfalls listed as Group 1 and were analyzed in accordance with the SAP/QAP and not a single congener was reported as detected by this analysis in accordance with EPA protocols. Since a cursory review of the revised data sets showed that both outfalls averaged four or more "detections" of Penta PCBs, these discharges were classified as Group 1, the most significant classification in the TMDL. None of these detections are sufficiently reliable data to be considered valid indications of actual PCB levels. Outfalls which are classified in Group 1 would be expected to have a potentially significant impact on the concentrations of PCBs in the estuary. In this case, the impact of outfall 003 on the Delaware River is expected to be very small, as the average daily flow from this outfall was only 0.1515 MGD for the calendar year 2002. Detection of these congeners in the effluent samples run at the same time as the suspect blank are also suspect, and should not be relied upon to identify a positive detection of the congener, much less a significant discharge. It is impossible for us to understand the impact of blank contamination for these results as they were not reported in the method blank, and these values are also suspect and may not indicate a positive detection of the congener. The detection of the congeners in the method blank affects the reliability of the results at the low levels detected for Outfall 003. The fact that our Rinsate/Equipment/Field blank has significantly fewer detections at the EDL that the laboratory method blank seems to indicate that analytical noise may be the source of the apparent detections at or above the EDL. The process used to determine the most significant sources of PCBs to the Delaware Estuary is using data that is well below the capabilities of the analytical method. It is unreasonable to make regulatory decisions based on data that is clearly so flawed that the presence of PCBs at all is questionable.	The TMDL is based on the best data available at the time the study was performed. Although selected dischargers analyzed samples and reported results in accordance with the requirement of the SAP/QAP, data validation protocols were not universally discussed and agreed upon for the TMDL. Therefore, in order to estimate discharger concentrations and calculate loadings, data from all dischargers were treated equally. That is, all detected concentrations were used in loadings calculations. Furthermore, all samples collected for the TMDL were utilized in the same manner. Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used to calculate loadings. Furthermore, neither discharge sample nor ambient sample results were adjusted for blank concentrations in Stage 1. Blank contamination does not prove a false positive.
10-003	It is an established fact that PCBs in ambient air are often at high enough concentrations to transfer PCBs to the water in levels that are well above any proposed water quality criteria.	Data collected by Rutgers University at seven sites in the airshed of the Delaware Estuary were used to develop relationships describing the flux of penta-PCBs between the air and water. While these indicate that PCBs are lost to the atmosphere in most of the estuary except in lower Zone 3 and Zone 4, the TMDL assumes that the air will be in equilibria with the estuarine waters when water quality criteria are met. This will require implementation initiatives to identify and reduce primarily local sources of PCBs.

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10-004	The process for determining whether a source should be considered significant and receive priority attention in the TMDL process should include the following elements: (1) A framework for collecting data and information needed to make preliminary characterization of pollutant concentrations for sources, pathways and ambient media. (2) An analysis of all ambient data sets to determine what the current environmental background levels are for the pollutant(s) for each media. (3) Each source and pathway should be statistically evaluated against the appropriate threshold level to determine whether it is statistically higher than ambient conditions. (4) Sources/Pathways that have concentrations that are statistically above the established threshold levels should be further evaluated. (5) This process should be iterated as ambient conditions in the estuary change, or sampling/analytical technologies improve.	The TMDL does not place priority attention on specific sources. Rather, the TMDL accounts for all known sources of PCBs to the Delaware River and assigns load allocation to those sources. The TMDL is based on the best data available at the time the study was performed. We support an iterative process to refine the TMDL as more data become available.
10-005	Rohm and Haas does not believe this is the appropriate time to raise use attainability and standard attainability issues; Rohm and Haas asserts it may be appropriate to raise these issues following Phase 2 of the TMDL, when more information on loadings, potential reductions, and attainability of water quality standards is available.	See Theme 2 response.
11-001	Endorses the comments submitted by the Coalition.	Comment noted.
11-002	Supports use of best management practices.	Comment noted.
11-003	Objects to being labeled a significant discharger.	An explanation for the potential point source groupings is contained in Appendix 3 of the TMDL report. The commenter is referred to Table 3-2 for the criteria used to determine those assignments. The term "significant discharger" was not used within TMDL document. Rather, Valero was identified as a significant discharger in Appendix 1, Figure 1 of the TMDL report. Data used to make that determination was limited to data received through January 2003. Identification as a significant discharger may be modified as additional data become available.
11-004	The TMDLs should be implemented in stages.	Comment noted.
11-005	The Stage 1 TMDLs should not contain WLAs assigned to each individual point source discharger.	See Theme 4 response.

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11-006	The elements of the proposed NPDES permitting process set forth in Appendix 3 of the TMDL Report need to be clarified and revised.	In order to begin to implement these TMDLs, the NPDES permitting authorities believe that it is appropriate for these discharges to receive non-numeric water quality-based effluent limits (WQBELs) consistent with their respective individual WLAs when their NPDES permits are reissued or otherwise modified. Requirements in NPDES permits or through DRBC regulations may include: (1) the use of Method 1668A, a highly sensitive analytical method capable of detecting very small amounts of PCBs, for any monitoring of influent and effluent to better quantify individual PCB congeners; (2) the development of a PCB minimization plan; and (3) implementation of appropriate PCB minimization measures identified through PCB minimization planning. The respective NPDES permitting authorities will determine the discharge-specific effluent controls consistent with the WLAs, and may consider the following factors: the relative loading of penta-PCBs, the type of discharge, the type of analytical method used to measure the 19 penta-PCB congeners, the number of the penta-PCB congeners that were detected, and the proportion of the zone WLA that is represented by the discharge loading. When Stage 2 TMDLs are issued, it is expected that all NPDES permits issued, reissued or modified will include numeric or non-numeric requirements consistent with the Stage 2 WLAs for each zone.
11-007	The point source contribution of PCBs to the Delaware Estuary is drastically overstated because of: (1) the lack of uniformity in sample collection methodologies and analysis; (2) DRBC's application of the data, which led to conclusions that PCBs were present where none were actually detected using the most sensitive analytical methods; and (3) inconsistent application of the ratio of the penta congener to total PCBs, since a 25% factor was used for point sources to develop the WLAs whereas only a 14.65% factor was used for nonpoint sources to develop the LAs.	We disagree that the point discharge contribution is drastically overstated. The methodologies for sample collection were reviewed for consistency. The differences in analytical method do not lead to an overestimation of PCB concentration. Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. Since the true concentration of a non-detect sample is somewhere between zero and the detection limit, setting the concentration equal to ½ the detection limit is equally likely to underpredict or overpredict the true concentration. Comparisons among source categories were performed at the penta-PCB level. For point discharges, this meant using the actual measured penta-PCBs. For contaminated sites it meant estimating the penta fraction using the proportion of domestic production that was penta PCB. At the penta level, neither of these approaches would result in overestimating point discharges or underestimating contaminated sites. The scale up from penta to total PCBs used a factor of 4 for all source categories. Therefore, point discharges were not biased high.

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11-008	The data submitted to DRBC for consideration as part of the development of the PCB TMDLs was misapplied in several significant respects. For example, DRBC assumed PCB concentrations for sample results determined to be nondetect using the most sensitive analytical methods, failed to apply standard QA/QC procedures by ignoring data that showed contamination in sample blanks and failing to address false positive results, and did not take into account known limitations of Method 1668A.	Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive. See Theme 1 response.
11-009	The database for contaminated sites is inadequate, thereby underestimating their potential source contribution of PCBs to the Estuary.	As indicated, the NJ contaminated site load estimates were not completed in time for inclusion in the modeling. When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration. A more refined and comprehensive estimate of the contaminated site load is anticipated for Stage 2. The contaminated site list will be revised as additional data become available.
11-010	There is no discussion about the relationship between the numeric water quality standards and the fish consumption advisories that led to the stream impairment designations by the states. A more detailed assessment of the causes of fish tissue concentrations might lead to an alternate set of TMDL requirements with different interim targets or endpoints.	See Theme 2 response.
11-011	The efforts of the Implementation Advisory Committee should not be constrained by DRBC's policies and procedures. The Committee needs to take an unfettered look at the PCB TMDLs and freely evaluate cost-effective strategies for reducing PCB loadings to the Delaware Estuary.	Same comment as 26-010. The Implementation Advisory Committee ("IAC"), which is tasked to develop creative and cost-effective strategies for reducing loadings of PCBs and achieving the TMDLs for PCBs in the Delaware Estuary. The IAC will develop strategies and make recommendations for the Stage 2 TMDL.

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11-012	The PCB load reduction required by the PCB TMDLs is dramatic for both point and nonpoint sources, ranging in excess of 95%. Nevertheless, there is no analysis of the feasibility of achieving the WLAs or LAs or the costs of compliance. Given the pervasiveness of PCBs in the environment and their discovery in uninhabited areas around the world, the likelihood that the current water quality criteria for PCBs in the Delaware Estuary can be achieved is questionable.	A TMDL and its allocation scheme should be based on the assimilative capacity of the waterbody for a given pollutant, not on the cost-effectiveness of reductions required, to attain the applicable water quality standards. EPA, DRBC, and the States are aware that attainment of the current water criteria are attainable will require time.
11-013	EPA's position on the issue of the scope of potential judicial review of the Stage 1 TMDLs needs to be discussed when the PCB TMDLs are established in December.	For recent TMDL cases discussing judicial review, see City of Arcadia, the EPA May 16, 2003 (2003 Wal 21262022 N.D.Cal) Friends of the Earth, the Whitman, D.C. Cir. 02-1123 and 02-1124 (Sl. Op. June 20, 2003).
11-014	DRBC provided no information on data quality review in the PCB TMDL Report, thus preventing a determination as to whether the data quality goals of the DRBC QAPPs have been satisfied.	See response to comments 1-026 and 26-022.
11-015	In the PCB TMDL Report, DRBC erroneously ignored blank contamination indicating false positives.	Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive.
11-016	DRBC failed to provide technical or legal justification for its use of a one-half detection limit for non-detected values.	Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. Project specific justification is not required.
11-017	(1) Calibration of the Water Quality Model is put into question; (2) Source loadings and ambient concentrations developed by DRBC are inaccurate, leading to greater uncertainty in the Water Quality Model than what has been identified; (3) The WLAs and LAs are inaccurate, due to the inaccurate Water Quality Model and loadings; and (4) PCB loadings from some point source discharges are inaccurately presented."	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. Both the hydrodynamic and water quality models were calibrated and the calibration results are provided in supporting documents. Model calibration results were judged scientifically credible and adequate to support development of the TMDL by a panel of independent scientists and modeling practitioners. Refinements to the loading estimation and modeling work are expected to continue in Stage 2 TMDL development.
11-018	Better Definition of Loads from Nonpoint Sources is Required.	Same comment as 26-025.

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11-019	(1) DRBC, in its request that point source dischargers perform monitoring in support of the PCB TMDL study, did not specify the use of a particular analytical method, but did require an analysis of PCB congeners that was consistent with USEPA Method 1668. (2) DRBC did not adequately define the intended use and appropriate data quality requirements for the PCB TMDL study when it was initiated. As a result, the collected data appears to be insufficient to support the promulgation of the PCB TMDLs. (3) DRBC has not demonstrated that the data used to develop estimates of the PCB loading to the Delaware Estuary are reliable, and in fact, appears to have based estimates on data that do not meet the criteria for the analytical method, standard practice, or QAPP requirements. (4) The QAPP developed by the Coalition includes a data validation process that is consistent with standard data validation practice. The Coalition developed a QAPP for sampling and analysis that was used by its members. DRBC also made the Coalition's QAPP available to other point source dischargers for their use. This QAPP included two major requirements not included in the DRBC QAPPs: (a) A requirement that all data would be validated consistent with USEPA's National Functional Guidelines; and (b) An assessment of the impact of contaminants reported in blanks on data usability, consistent with current data validation guidance.	(1) Comment noted. (2) In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. (3) In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. This TMDL considers the results of over 800 analytical samples from various matrices including the main stem Delaware River and tributary water, sediment, air, and effluent. Where DRBC used method 1668A, sample results were rigorously scrutinized by the lab. Target concentrations were determined by isotopic dilution/internal standards methods and sample specific detection limits were determined. Laboratory qualifier flags were defined prior to analysis. Method blanks were collected and analyzed as part of a Ongoing Precision and Recovery program. System and laboratory performance was undertaken for all analysis; retention time, recovery data, ion abundance ration were compared to method requirements. Those analyses which did not meet method requirements were either reanalyzed or noted in the QA/QC report. (4) Comment noted.

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11-020	(1) Data from Method 1668A cannot be considered reliable and accurate if the potential impact of laboratory or field contamination on sample results is ignored. (2) Until interlaboratory validation of Method 1668A is completed, data from Method 1668A should only be used for screening purposes, unless the data have been validated by a qualified reviewer independent of the laboratory generating the data, consistent with current data validation guidance. (3) DRBC did not address false positive results in the PCB TMDL Report, and must do so in order to satisfy QA/QC requirements. (4) DRBC must revisit the Method 1668A data sets and apply the appropriate reporting limit, i.e. the minimum level of quantitation, rather than the minimum detection level or estimated minimum detection level. (5) Consistent and achievable interlaboratory quantitation limits, based on sound scientific principles and considering all potential sources of error and uncertainty, must be developed. (6) DRBC should consider other potential limitations known to be associated with Method 1668A.	(1) In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required for an approvable TMDL. Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive. In all instances, the best data available data was used. EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company). Since data validation protocols were not universally discussed and agreed upon for the Stage 1 TMDL, data from all sources were treated equally in order to estimate discharger concentrations and calculate loadings. That is, all detected concentrations were used in loadings calculations. Data validation protocols that address data use will be established for the Stage 2 TMDLs. (3) Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive. Alternative approaches will be considered for Stage 2. (4) Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used to calculate loadings. (5) The interlaboratory validation study is underway for Method 1668A. This process is encouraged and supported. (6) DRBC agrees with the comment. Potential limitations regarding the method will be more fully explored in the interlaboratory validation study currently under way, and incorporated into the revised methodology.

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11-021	(1) DRBC provided no information on data quality review in the PCB TMDL Report, thus preventing a determination as to whether the data quality goals of the DRBC QAPPs have been satisfied. (2) In the PCB TMDL Report, DRBC erroneously ignored blank contamination indicating false positives. (3) DRBC failed to provide technical or legal justification for its use of a one-half detection limit for non-detected values.	(1) See Comment 11-014 = 1-026 = 26-0222. See Comment 1-027 = 11-016 = 26-023. See Comment 1-028 = 11-016 = 26-024. There are currently no requirements that the supporting document for a TMDL contain a description of the data quality review. The model calibration report does describe the data and procedures used to develop model inputs including penta-PCB loadings. Further description of the protocols used to validate data will be established for the Stage 2 TMDLs. (2) Neither sample nor ambient results were adjusted for blank concentrations in Stage 1. Blank contamination does not prove a false positive. (3) Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment of non-detect data is well established in the literature. Project specific justification is not required.
11-022	PCB Loads from point sources appear to be overestimated, and loads from nonpoint sources underestimated.	Same comment as 26-026.
11-023	Specific plans for nonpoint source reductions are not presented.	See Theme 5 Response. Same comment as 26-027. The Implementation Advisory Committee ("IAC"), which is tasked to develop creative and cost-effective strategies for reducing loadings of PCBs and achieving the TMDLs for PCBs in the Delaware Estuary, includes addressing nonpoint source evaluation and control. We acknowledge that additional specific plans to implement the TMDL are needed.
11-024	The basis and achievability of the ambient water quality objective should be revisited.	See Theme 2 response. Same comment as 26-028.
11-025	Achieving the WLAs will not materially affect conditions in the Estuary.	Achieving the WLAs alone will not be sufficient to achieve the TMDL, but improvements would be made. Substantial reductions will also be needed for the other source categories. Same comment as 26-029.

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11-026	The summary figure of PCB loads to the estuary presented in the model calibration report (Figure 2.1, p. 37) is not representative of all the sources of PCBs. It neglects (1) gas absorption, (2) downstream boundaries (e.g. Atlantic Ocean) and (3) current PCBs in the sediment bed. Based on unit load calculations using the DRBC model, the current contribution of point sources to PCBs in the water column is small and less than 9% throughout the estuary. The average of all the model segments is 5% and the volume-weighted average over the estuary is 1%. When CSOs are included average of the model segments is 7% and the volume-weighted average is 2%. This analysis accounts for all sources of PCBs (e.g. gas absorption), unlike the summary of loads presented in the DRBC model calibration report.	Figure 2.1 depicts the external loads. Fluxes and tidal boundary loads are most appropriately computed within the model framework. As indicated by the commenter, gas phase air concentrations, downstream boundaries, and sediment concentrations are important sources of PCBs.
11-027	The model predicts that: (1) Under any management scenario, including complete and instantaneous elimination of all PCB loadings categories (incl. Atlantic Ocean, atmosphere), the PCB water quality criteria will not be met for the next several decades; (2) Significant reductions from the more prominent sources will be necessary in order to make progress towards achieving the water quality criteria; (3) Even a very aggressive point source control strategy will not result in meaningful progress towards achieving the water quality criteria.	See Theme 2 and 4 responses.
11-028	Additional data collection and model development is necessary before the present model is calibrated for purposes of (1) the Stage 2 WLAs and LAs and (2) predicting the time to achieve applicable water quality targets in the Delaware River Estuary.	(1) Additional data collection and model enhancement will be conducted for the Stage 2 TMDL. (2) Even with minor uncertainties, models will provide future trend better than any other tools at this time.

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11-029	Long-term decadal scale behavior of the model appears to be inconsistent with historical fish tissue and sediment bed concentrations. This is important because it suggests the model is incapable of correctly forecasting the response to changes in loadings. It is likely that the estuary response time is longer than the present model predicts.	The model developed by DRBC was not designed to predict PCBs concentrations in fish tissue. Making judgment on the model performance by comparing non-simulated variable is not appropriate. From the comparative plots results of PCB between water column and fish tissue, it is clear that the aforementioned uncertainty came from the wide range of distributions (both spatially and temporarily) of fish tissue data rather than the issue of the model. We believe that it is not possible to confirm the existence of any trend in the PCB concentrations in surficial sediment due to high data variability. Thus, we disagree with the commenter's interpretation on the performance of the model. Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. The selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. A reality check of the hindcast loading trend for recent data and an estimate of the uncertainty of the hindcast loading trend could be included for Stage 2.
11-030	The model is not able to predict contemporary spatial PCB sediment concentrations in the lower portions of the estuary.	Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. We are aware that the selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. A reality check of the hindcast loading trend for recent data and an estimate of the uncertainty of the hindcast loading trend are being considered for Stage 2.
11-031	The present approach incorporated in the water quality criteria assumes that the fish and water concentrations are at a constant ratio (e.g. constant BAF/BCF). This is not applicable to the present situation in the Delaware Estuary because the recent historical data show that fish tissue to water column concentration ratio is increasing. Since reducing PCB concentrations in fish tissue is the ultimate goal of the PCB TMDL, the utility of the present approach is severely limited. A food chain bioaccumulation model is needed to relate fish tissue concentrations to ambient water column and sediment bed concentrations.	We do not agree that the currently available data indicate that the ratio of the fish tissue concentrations of PCBs to the water concentrations of PCBs is changing. Longer term monitoring is needed to ultimately determine whether this ratio is changing or whether perceived changes are normal variability within a currently stable regime. Additional monitoring of fish tissue concentrations in the estuary by the DRBC and the states is continuing.

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11-032	The organic carbon model does not reproduce estuarine turbidity maximum and the effect of this on PCB predictions is not addressed. This may be related to the results of the decadal scale consistency check, which suggested a problem with the sediment-water column dynamics.	The organic carbon model has been reviewed and judged scientifically credible and adequate by panel of experts. Improvements to carbon simulation are considered for Stage 2.
11-033	The estimate of loadings from Contaminated Sites is incomplete. Contaminated Sites are a major source category and therefore a complete estimate of their loadings has to be included in the short-term calibration before the model can be considered calibrated.	As indicated, the NJ contaminated site load estimates were not completed in time for inclusion in the modeling. When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration. We agree that a more refined and comprehensive estimate of the contaminated site load is desired.
12-001	Insufficient data to back up the assigned individual WLAs	See Theme 4 response. The TMDL is based on the best available data.
12-002	EPA acknowledges that because of insufficient and unreliable information, the numeric Stage 1 WLAs will not be included in individual NPDES permits. In addition, DRBC has stated that the applicable water quality standards for PCBs in the Delaware Estuary are likely to be amended next year, thereby revising the key TMDL target. Neither the TMDL regulations nor EPA's interpretation of those regulations require EPA to structure the WLAs in such a fashion.	See Theme 4 response. Contrary to what is indicated in the comment, the reason why numeric NPDES effluent limits consistent with the individual WLA will not be included in NPDES permits is not due to EPA's acknowledgment of insufficient and unreliable information. Rather, the state permitting agencies believe that WQBELs in the form of non-numeric conditions are consistent with the WLA and sufficient to meet the TMDL WLAs as the most appropriate way to identify and control discharges of PCBs. EPA supports this approach.
12-003	The data presented by DRBC (2003) indicates that, overall, tributaries and other Nonpoint sources contribute more than 90% of the current PCB loads to the tidal Delaware River. However, most of the data collection intended to quantify loads has been for point sources. This bias is evidenced in Section 1.6 of DRBC (2003) which presents virtually no detail regarding the procedures, data or assumptions used in estimating any of the nonpoint sources loads.	The TMDL is based on the best available data at the time. Calculation methods of carbon and penta-PCBs loadings from nonpoint sources are described in detail in the Section 2 of the DRBC report (2003) entitled, "Calibration of the PCB water quality model for the Delaware Estuary for Penta-PCBs and Carbon" which is one of the supporting documents for the PCB TMDL report.

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Letter ID	Public Comment	Response
12-004	Because of the focus on point sources, DRBC has not presented any specific plans for reducing PCB loads from nonpoint sources. Even if the WLAs for all point sources were to be achieved tomorrow, average PCB concentrations in fish in the tidal Delaware River would not be appreciably lower unless current PCB loads from tributaries and nonpoint sources were also dramatically reduced. Even if point sources were allowed no discharge of PCBs at all, the resulting reductions would not lead to attainment of the standards of the River.	See Theme 2 and 3 responses. As stated in the TMDL, achieving the water quality standards for PCBs in the Delaware Estuary will require significant reductions from current loadings from both point and nonpoint sources. In addition to reducing PCB loads from sources discharging directly to the estuary, reductions from sources in the non-tidal portion of the river, local and regional air emissions, and sources contributing to elevated PCB concentrations in the Atlantic Ocean will be necessary to achieve and maintain the applicable PCB standards.
12-005	EPA has not developed TMDLs that are technically defensible, and which divide reduction obligations equitably among the sources that are responsible for those loadings. EPA is required to show there is "reasonable assurance" that those reductions will actually occur. However, the Agency has made no attempt to do so. The agency has identified no methods by which such reductions can be attained, let alone methods that are technically and economically feasible.	In April 2003 EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also included in Appendix 1 of the TMDL report. This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments. Additionally, the DRBC has established the Implementation Advisory Committee ("IAC"), which is tasked to develop creative and cost-effective strategies for reducing loadings of PCBs and achieving the TMDLs for PCBs in the Delaware Estuary. The IAC will address all sources of PCBs including nonpoint sources. See Theme 3 response.

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Letter ID	Public Comment	Response
12-006	For Method 1668A, an appropriate level of data review (e.g. data validation) must be used to eliminate false positive results indicated by contaminants detected in any blanks. DRBC did not address false positive results in the PCB TMDL Report. DRBC's request to re-report data to the MDL or EMDL contradicts the express requirements of the Method in Section 17.6.1.4. Reporting below the ML greatly increases the potential for reporting of false positives. There is a clear need for consistent achievable interlaboratory quantitation limits (Mls) based on sound scientific principles considering all potential sources of error and uncertainty. Comments by the Alliance of Automobile Manufacturer's, et al. to EPA regarding Method 1668A identified a number of potential limitations of Method. These issues still exist in the application of the method by DRBC: (1) DRBC did not adequately define the intended use and appropriate data quality requirements at the outset of the PCB TMDL study. (2) DRBC has not demonstrated that the data used to develop estimates are reliable, and in fact, appears to have based estimates on data that do not meet the requirements of the analytical method, standard practice, or QAPP requirements. (3) Method 1668A has not yet been validated in interlaboratory studies, so that routinely achievable detection and quantitation limits are not known, and potential matrix and QA/QC problems may not be known. (4) Method 1668A is so sensitive that it is highly susceptible to false positive results from sampling and analytical artifacts, particularly for results near the detection limit. (5) Data validation, specifically considering blank results to minimize false positive results, is critical to the development of a data set that can be used for the intended purpose of providing "accurate, precise and defensible estimates of the PCB loading to the Delaware Estuary" as required by the DRBC QAPPs. These issues should be addressed to the extent possible based on existing data and information, prior to finalizing the proposed Stage 1 TMDLs.	Although selected dischargers analyzed samples and reported results in accordance with the requirement of the SAP/QAP, data validation protocols were not universally discussed and agreed upon for the TMDL. Therefore, in order to estimate discharger concentrations and calculate loadings, data from all dischargers were treated equally. That is, all detected concentrations were used in loadings calculations. Furthermore, all samples collected for the TMDL were utilized in the same manner. Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used in calculate loadings. Method 1668A has undergone a single laboratory validation and is currently undergoing an interlaboratory validation study as per EPA protocols. Furthermore, EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company).

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12-007	The most stringent PCB water quality objective used in Stage I (7.9 pg/L) is approximately 8 times lower than the EPA (2002a) current National water quality criterion (64 pg/L). The conservative assumptions used in developing the PCB water quality objective of 7.9 pg/L, it corresponds to a very low PCB larget in fish. Such low concentrations in fish are very rarely achieved, even in the most remote surface water bodies. Fish tissues from almost all surface water bodies sampled in the Mid-Atlantic region have concentrations exceeding the DRBC target (examples cited in original comments). This result is consistent with the ubiquitous nature of PCBs, and the finding that nonpoint sources are dominant. The TMDL does not demonstrate that ambient water quality can be achieved.	See Theme 2 response. The existing, applicable water quality criteria the endpoints for this TMDL.
13b-001	Figure 3 on page 6 of the TMDL Report shows a chart of PCB concentrations in white perch collected from the Delaware Estuary between 1969 and 2001. That chart is attributed to Richard Greene from the Delaware DNREC. As the author of that chart, I appreciate its inclusion in the TMDL Report. I would, however, recommend that an updated version replace the version shown in the report. (See comment letter for the chart)	The TMDL Report has been modified to include the updated chart.
13b-002	Page 108 of the report entitled, "Calibration of the PCB Water Quality Model for the Delaware Estuary For Penta-PCBs and Carbon", states that, "In 1977 and 1979 White Perch collected from Zone 2 were analyzed using packed column Aroclor analysis techniques." These samples were analyzed in 1977 and 1979 using capillary column Aroclor analysis techniques, not packed column Aroclor techniques. It is true that at least some of the white perch samples analyzed between 1969 and 1973 were analyzed using packed column Aroclor techniques.	The clarification is noted and has been corrected.

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13b-003	Delaware would encourage the EPA and the DRBC to evaluate an appropriate modeling scenario to determine whether active point source loading is sufficient, in and of itself, to cause exceedances of applicable water quality criteria on a zone by zone basis. By extension, we would encourage the evaluation of additional loading scenarios to determine if other individual source categories (e.g., waste sites, stormwater, tributaries, etc.) are sufficient, by themselves, to cause exceedances of criteria. This type of evaluation could ultimately be extended to evaluate whether the loading from individual sources within a particular source category and zone is sufficient to cause an exceedance. Due to time constraints, it is recognized that this final type of analysis is almost certainly not feasible during Stage 1. We would however encourage the EPA and the DRBC to evaluate, as a part of the Stage 1 TMDL, the less complex problem of whether point source loading is sufficient, independent of other sources, to cause exceedances of applicable criteria on a zone-by-zone basis. We would encourage the EPA and the DRBC to address the more complex problem of individual attribution and allocation during the Stage 2 PCB TMDL.	Comment noted. Following establishment of the TMDLs, the DRBC staff will determine whether the point source category and any individual point source discharge is sufficient in and of itself to cause an exceedance of the existing water quality criteria. A similar analysis on other source categories and individual sources will follow as time and resources allow.
15-001	PSEGSC is a member of the Delaware Estuary TMDL Coalition (the "Coalition") and endorses the comments submitted by the Coalition today.	Comment noted.
15-002	The estimates of PCB loads from tributaries for wet weather events have a high level of uncertainty. Reliable estimates can only be obtained by measuring PCB concentrations and stream flows over entire runoff events and then integrating the results, or by obtaining flow weighted composite samples. Estimated based on a few grab samples have an unquantifiable level of uncertainty, and are not adequate input to a load certainty analysis (See Appendix F in "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon"). A true estimate of the uncertainty can only be obtained by comparing the actual total PCB load based on one or two grab samples with results based on measurements over the runoff event or flow-weighted composite samples.	Uncertainty associated with the tributary load is comparable to the uncertainty associated with other load categories, including point discharges. While increased sampling and sampling over various flow regimes will help to reduce that uncertainty for all source categories, the costs associated with that approach should be carefully considered. Characterization for all source categories should maximize the certainty of the load and minimize the cost of data collection.

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15-003	Figures 29-32 of Total Maximum Daily Loads for Polychlorinated Biphenyls (PCBs) for Zones 2-5 of the Tidal Delaware River exclude contributions from contaminated sediments, and the boundaries. (It seems likely that loadings due to gas adsorption also are excluded). A distribution of percent contributions to PCB loadings that is based on a subset of all the source categories provides no real value. In this case, the resulting percentages by Zone divert attention from source categories that are larger and more difficult to control, overstate the percent allocations that would result if all source categories were considered, and are subject to misinterpretation. The only useful characterization of existing PCB loadings to the Delaware Estuary is one that includes all the known source categories.	Figures 29-32 have been revised to include all external loading sources. The internal exchanges were not included in the final TMDL report because the net air-water exchange will be zero and sedimentation will work as a sink of PCBs.
15-004	If ambient water column concentrations are primarily the result of point and nonpoint source loadings rather than sediment loads (See Chapter 1 in "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon"), then the ratio of penta-PCBs to total PCBs in the water column should be consistent with the ratio of penta-PCBs of the major source categories. The technical reports do not address the inconsistency (i.e. 14.65% versus 25%), or why it is not relevant to the model calibration. In the TMDL, LA and WLA calculations, it is not clear why the 25% scaling factor would be applied to source categories for which the DRBC estimated a different (i.e. 14.65%) scaling factor.	The observed penta and total PCB concentrations observed in the Delaware River integrate loads from point and nonpoint sources, sediments, boundary concentrations, and gas phase air concentrations. Since the penta to total ratio varied from zone to zone and from source category data set to data set, the overall ratio will match closely with some data sets but not with others. For contaminated sites, estimating the penta-PCB fraction required using the proportion of domestic production that was penta-PCB, since the contaminated site data was Aroclor data and not congener data. The scale up from penta to total PCBs used a factor of 4 for all source categories.
15-005	Section 2.4.2 is ambiguous on the inclusion of PCBs loads from contaminated sites in New Jersey in the short-term model calibration. The first paragraph of Section 2.4.2 states that PCB loads were estimated, and that the EPA and states reviewed the sites under their jurisdiction. However, according to the last paragraph of this section, the state of New Jersey provided a copy of the EQUIS database for contaminated sites, but the "window of opportunity for incorporating new load estimates closed before NJ site load estimates could be developed." Since little if any information was provided for the New Jersey contaminated sites, it is impossible to determine whether the Load Uncertainty Analysis (See Section 2.7 and Appendix F in "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon") adequately accounts for the additional variability of PCB loadings from the omitted New Jersey contaminated sites.	As indicated, the NJ contaminated site load estimates were not completed in time for inclusion in the modeling. When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration.

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15-006	DRBC estimated that point-source discharges (excluding non-contact cooling water) account for 13% of the total penta-PCB load (See Figure 2.10). This estimate is likely to be high because the estimates were not adjusted for PCB concentrations measured in field, trip, or rinsate blanks. For those facilities, which withdraw and treat water form the Estuary, it is not clear if the estimates were adjusted to account for PCBs that were removed as part of the treatment process.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required for an approvable TMDL. Neither sample nor ambient results were adjusted for blank concentrations in Stage 1. Blank contamination does not prove a false positive.
15-007	The short-term calibration was based on penta-PCBs. All penta-PCB loads (nonpoint source, point source, atmospheric, sediment, tributary, etc.), water column concentrations, and sediment concentrations should be expressed using all, or the same subset of, penta-PCB congeners. The report on the calibration should: (1) clearly list the composition of each input (i.e. whether it includes all penta-congeners or a subset of congeners), (2) describe how the inputs were made consistent; and (3) address the potential impact on the calibration if consistence was ignored.	The original list of 82 congeners adequately captures the majority of penta-PCBs present in the environment. Since the expanded list of congeners contains the original list of 82 as a subset, it also captures the majority of penta-PCB congeners in the environment, as does the estimated penta fraction from Aroclor data. These three approximations of the sum of penta-PCBs are therefore assumed consistent.
15-008	The assimilative capacity of the Delaware Estuary is dependent on dilution due to inflows and tidal mixing, burial of sediments, and volatilization to the atmosphere. The technical reports for the TMDL do not adequately discuss how burial rates (including their spatial variability) were determined, how assigned burial rates were judged to represent actual conditions, or the sensitivity of the (water column and sediment) PCB calculations to the assigned burial rates. The extent to which variations in burial rates might resolve the inconsistency in predicted and observed water-column and sediment PCB concentrations (identified in the Decadal Scale Consistency Check) needs to be determined.	As indicated in the model calibration report, the observed burial rates from dated core samples, sonar scan results, decadal scale consistency check, and professional judgment were used along with observed water column carbon concentrations to check model output. Along with loads and forcing functions, settling/resuspension rates and decay rates, surface sediment mixed layer depth are determined as part of the model calibration. Carbon calibration refinements and data collection following establishment of these TMDLs may reduce uncertainties associated with sediment burial rates.

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15-009	Figure 2.10 in "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon" includes only estimates of PCB loads that are input directly into the model. Other source categories (i.e. loads from the open boundaries, gas adsorption, and contaminated sediments) were not included probably because the model used prescribed boundary and initial conditions to internally compute them. For completeness, the DRBC should have extracted these (computed) loads from the model output and included another figure comparing the loads from all the sources categories. This comparison would provide valuable insight into the relative contributions by all the source categories to the total PCB load and the long-term strategy that will be needed to reduce PCB concentrations in the Estuary.	Figure 2.1 depicts the external loads. Fluxes and tidal boundary loads are most appropriately computed within the model framework. As indicated by the commenter, gas phase air concentrations, downstream boundaries, and sediment concentrations are important sources of PCBs.
15-010	The bivariate plots for simulated and observed DDPCB and PPCB concentrations (See Figure 4.13 in "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon") indicate that the root mean square error is several orders of magnitude greater than the water quality standards for PCBs in Zones 2 through 5 of the Estuary. Much of the error (i.e. the observed concentration minus the predicted concentration) is visually suppressed because the scales of the X- and Y- axes are quite different. The magnitudes of the errors reflect the large uncertainties in the PCB loadings from the various categories, and the various approximations used to simulate the fate and transport of PCBs in the Estuary. Until the uncertainties in the PCB loadings are substantially reduced, it is impossible to establish the accuracy of the PCB fate and transport calculations. An acceptable accuracy must be achieved before the model can be used as a reliable management tool for predicting whether or not proposed PCB control strategies will reduce water-column and sediment concentrations of PCBs to acceptable levels within expected time-frames.	As indicated in the Model Calibration Report, the values of the correlation coefficients for the referenced bivariate plots exceed EPA's recommended correlation coefficient acceptance criteria for water quality variables. The scales of the X and Y axis are not different.
15-011	In addition to the comments submitted by the Coalition, PSEGSC is submitting more specific comments on the representation and quantification of PCB loading estimates that were included in the various reports which describe the derivation of the TMDLs, and on the calibration of the PCB fate and transport model.	Comment noted.

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16-001	In the case of the City of Trenton POTW and the Hamilton Township POTW, this load reduction requires these facilities to reduce their total PCB concentrations from approximately 10 pg/L (picograms per liter, 0.010 mg/L) to less than 0.1 pg/L. These values are infinitesimal in comparison to the other known sources and are not expected to produce any discernible improvement in fish tissue levels (e.g., the objective of the TMDL). The allocation, therefore, has no reasonable relationship to environmental needs or consequences but is simply an arbitrary target set for point sources to achieve. This proposal violates fundamental concepts of due process and fairness. It violates common law principles of damage allocation applicable to TMDL decision-making. Accordingly, we request that such limits or allocations be withdrawn from the TMDL.	EPA does not agree with the comment and believes that the City of Trenton and Hamilton Township POTWs should be included in the TMDL as the POTWs have been identified in the TMDL as contributing PCB loads. In some instances, removal of known or suspected sources of PCBs through waste minimization plans and monitoring will result in reduced PCB loads over a longer time scale. Some facilities will likely identify many opportunities for load reduction while others will find fewer opportunities. However, a coordinated effort to find and remove PCBs from the estuary is still critical to overall success. See Theme 4 response.
16-002	DRBC and the delegated state agencies believe that it is appropriate to establish interim non-numeric (e.g., best management practice) water quality-based effluent limits, rather than the calculated numeric loads, to further TMDL compliance. The non-numeric approach includes influent and effluent monitoring using very sensitive analytical methods, development of a PCB minimization plan, and implementation of appropriate PCB minimization measures. This would not include any change in treatment processes which are expected to be a complete waste of local resources.	Comment noted.
16-003	In order to develop a TMDL that has any chance of achieving water quality standards, EPA and DRBC must first determine the cause of the elevated PCB levels in the tributaries, the atmosphere, and the ocean. Absent such information, requesting significant action be undertaken by the municipal entities is inappropriate. The current condition appears to be an irretrievable man-induced condition given that PCBs were banned almost two decades ago.	See Theme 2 response. We acknowledge that control of point sources alone will not achieve the TMDL, however with time and control of other sources, the TMDL is expected to be achieved.

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16-004	It is premature to require extensive non-numeric requirements in NPDES permits as contemplated for the following reasons: (1) Ability to Provide Effective Treatment - The effluent concentration of PCBs is extremely low and no treatment technology is available to achieve the nanogram per liter effluent concentrations that would be required under this TMDL. (2) Management Practices - The use of PCBs is already banned. This prohibition represents the most effective management practice that can be implemented. Any management practice implemented under the TMDL should be limited to the identification and removal of PCB-bearing equipment. Such an approach should provide the Agency and DRBC adequate time to determine whether the observed point source loads are primarily due to atmospheric deposition of PCBs within the service area that would require off-site control.	See Theme 2 and 4 responses. While production of PCBs has been banned, PCBs are still found in active uses which are allowed. We agree that it is important to assure that these PCBs receive appropriate handling, treatment and disposal as expeditiously as possible.
17-001	We are concerned about the attainability of the existing water quality standards for PCBs in the Delaware River. It appears to us that legacy pollution alone will continue to cause exceedances of the standards and that the proposed levels of reductions from point and nonpoint sources is unattainable. Accordingly, we believe it is essential that EPA acknowledge the attainability question and commit to identifying an attainable PCB standard as part of the Phase II TMDL. EPA should note in the Phase I TMDL that no effluent limitations or conditions will be imposed upon NPDES permittees until an attainability review is completed and any revisions to that TMDL that may be appropriate are made.	See Theme 2 response. EPA, DRBC, and the States agree that the current water quality standards are attainable with time. Regarding requirements posed upon permittees, they must be consistent with this TMDL as established. Should a new TMDL be developed, or should the water quality criteria change, requirements could be modified.
17-002	We are concerned that the TMDL proposes a 99.7 percent reduction in PCBs from our wastewater treatment plant. While we have very few detectable PCB readings from our treatment plant effluent, such a major reduction is likely to be impossible given the wide range of community sources that discharge to our system. Moreover, because we are a regional facility, we will need additional time to try to craft PCB reduction strategies with the other jurisdictions and industries that we serve.	See Theme 5 response. The States have discretion over the timing allotted to developing PCB minimization plans.

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17-003	The proposed TMDL would impact our combined sewer overflow program. The draft allocates PCB waste loads to Combined Sewer Overflows (CSOs) in Zone 5. It is unclear to us how these allocations were derived and how they compare to existing CSO loads. We have invested considerable time and effort in developing a CSO long-term control plan. It is imperative that the TMDL for PCBs – to the extent it will affect our CSOs – is integrated with our LTCP. Otherwise, the TMDL could disrupt our entire program.	Detailed descriptions of the CSO load estimates are included in the Model Calibration Report. The TMDL was allocated based on the existing load proportions for all point discharges, including CSOs. Long-term control plans (LTCPs) for CSOs have been developed, or are underway, in a number of communities discharging to the Delaware Estuary. To date, these LTCPs have not addressed PCBs, but have focused on reducing or eliminating discharges of untreated sewage during wet weather.
17-004	It is not clear how other tributary sources in Zone 5 were considered. It should be noted that the City of Wilmington CSOs do not discharge directly to the Delaware River, but to tributaries to the Delaware, mainly the Christina River and Brandywine Creek. It should also be noted that these tributaries are on Delaware's 303(d) list, and DNREC is in the process of developing TMDLs for these tributaries. DRBC and EPA must allow this process to take place so that scientifically accepted waste loads can be allocated to CSOs and other sources of PCB on the basis of tributary contribution of PCBs to the Delaware River, and the TMDL for these tributaries.	CSO outfalls located within the Brandywine and Christina model segments were included as explicit loads directly into Delaware River in Stage 1. Outfalls above the model boundaries were assumed to be captured in the tributary load. EPA, Delaware, and Pennsylvania are preparing TMDLs for the Christina River Basin to address bacteria, dissolved oxygen, and nutrient attainment under high flow conditions.
17-005	We believe it is premature to assign a numerical waste load to CSOs at this time. It is recommended that the draft should defer any load allocations to CSOs pending the development of TMDLs for the tributaries. This would be consistent with the deferral of assigning waste load allocations to MS4s and pending input on how to address "indirect" dischargers to the tributaries versus direct dischargers to the Delaware.	See Theme 4 response. CSOs were explicitly considered in the TMDLs. WLA were assigned to MS4s in the final TMDL.
17-006	The TMDL proposes significant, extremely aggressive reductions in PCB point source loads without addressing whether these reductions are technically and/or economically achievable. The TMDL should incorporate a requirement for a Use Attainability Analysis during Stage 1 implementation, and prior to Stage 2 load and wasteload allocations.	See Theme 2 response. A Use Attainability Analysis (UAA) is beyond the scope of the TMDL process. States, at their discretion, may pursue development of UAAs.

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17-007	The major sources of PCBs to the Delaware River are contaminated sites and other nonpoint Source discharges. However, the TMDL does not adequately address how and when the desired load reductions from these sources will be achieved. The TMDL should include a plan and schedule for load reductions from these discharges. Because these are the major sources of PCB loads, an implementation schedule should be developed that would defer major costs at minor sources until EPA can determine what, if any, reductions from these sources are attainable.	As stated in the TMDL, achieving the water quality standards for PCBs in the Delaware Estuary will require significant reductions from current loadings from both point and nonpoint sources. In addition to reducing PCB loads from sources discharging directly to the estuary, reductions from sources in the non-tidal portion of the river, local and regional air emissions, and sources contributing to elevated PCB concentrations in the Atlantic Ocean will be necessary to achieve and maintain the applicable PCB standards. In April 2003, EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is included in Appendix 1 of the TMDL. This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments.
17-008	It is evident that the computer runs are based on a very limited database. Additionally, the limited input data for PCB discharges from various sources was generated using inconsistent test methods. Consequently, numerical assignments of waste load allocations to individual dischargers should be deferred until reliable, consistent data are available.	In all instances, the TMDL is based on the best data available at the time the study was performed. This TMDL considers the results of over 800 analytical samples from various matrices including the main stem Delaware River and tributary water, sediment, air, and effluent. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. The partners believe that the data is sufficient to support the TMDL. Furthermore, the Model Calibration Report includes comprehensive descriptions of the data and its application.
18-001	Design of the proposed TMDL is based on one of ten homologous subsets that include only 46 of 209 known PCB congeners referred to as "Penta-PCBs." Water quality modeling considering only penta-PCBs is an oversimplification that does not account for the varying physical and chemical properties such as solubility and volatilization rates of the individual congeners and homologs across the total PCB spectrum. When considering the extremely low target for the Total PCB TMDL, any small variations in the modeling assumptions can have a profound effect on the results of the modeling. Given the inherent data variability from environmental sampling and laboratory analyses, computer modeling and statistical extrapolations including rounding issues and significant figures, the Total PCB TMDL as derived from the penta-PCB modeling will not meet the water quality standards for achieving the estuary's designated use as fishable waters.	Since pentachlorobiphenyls (penta-PCBs) were the dominant homolog in fish tissue monitored in the estuary, and since ambient data indicated that throughout the estuary this homolog represents approximately 25 percent of the total PCBs present, the penta-PCBs were selected to serve as a surrogate for the source of individual homologs (i.e., the amount of penta-PCBs was multiplied by 4 to approximate the total PCBs). Based on these observations and a review of the data, EPA adopted this approach. Given the fact that existing loads are 2 to 3 orders of magnitude higher than the TMDLs, this approach is appropriate for the TMDL. Refinements in both data collection and models will be performed as additional data become available and a Stage 2 TMDL is developed.

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18-002	DRBC data indicates that significant point source discharges account for less than 10% of the total daily load of PCBs into the estuary zones 2 through 5, whereas nonpoint source discharges account for over 85% of the total daily load. DRBC has identified the significant point source discharges through the NPDES permit system and has developed wasteload allocations. DRBC has also identified significant nonpoint source stormwater discharges associated with NPDES permittees. However, DRBC has not identified other significant nonpoint sources such as CERCLA and RCRA hazardous waste sites, tributaries, and sources of airborne PCBs that represent nearly an order of magnitude greater PCB loading than the point sources. The TMDL development process does not identify and calculate the required load allocations for the significant sources of nonpoint discharges. By virtually ignoring the significant nonpoint source contributions, this TMDL will never result in the achievement of water quality standards.	Load allocations were considered as a part of the TMDL development to the extent that data were available. All possible loadings, including all nonpoint source loadings, were considered in these TMDL calculations. We agree that further refinement of these load allocations is desired. Loads derived from nonpoint sources such as CERCLA and RCRA hazardous waste sites, tributaries, and sources of airborne PCBs are included in the model and are described in comprehensive detail in the Model Calibration Report.
18-003	The TMDL development process does not result in allocations for the various sources that are reasonable both technologically and politically, and that could be expected to be achieved when implemented. Considering the limited penta-PCB data set, simplified water quality modeling and assumptions, and the significant data gap from inadequate identification and characterization of significant nonpoint sources that make up the vast majority of the total PCB loading into the Delaware Estuary, EPA can provide no assurances that proposed "Stage 1 TMDLs" are reasonable from technological and political perspectives and can be achieved when implemented.	The WLAs and LAs are allocated in order to achieve the applicable water quality standards regardless of whether they can achieve those reductions immediately. EPA finds the allocations reasonable and equitable for the reasons set forth in the TMDL discussion on how the allocations were established. This TMDL considers the results of over 800 analytical samples from various matrices including the main stem Delaware River and tributary water, sediment, air, and effluent. We believe the data is sufficient to support the TMDL. Furthermore, we find that the Model Calibration Report includes comprehensive descriptions of the data and its application.
19-001	It is unclear whether EPA and the DRBC have conducted an analysis of whether the PCB targets for this TMDL are achievable. Given the complexity of PCB reduction and the ubiquitous nature of PCBs in the watershed, the County questions whether such low ambient PCB levels can be attained.	See Theme 2 response.
19-002	It is imperative that EPA and the DRBC build into the TMDL an acknowledgment of the attainability question, as well as a lengthy schedule for evaluating the effectiveness of the best management practices contemplated in the Phase I TMDL.	See Theme 2 response regarding water quality standards attainability. The effectiveness of the nonpoint and point source controls will be evaluated over the long term through continued water quality and fish tissue monitoring.

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19-003	Regarding how the wasteload allocations should be established (by zone or individual sources), the County recommends that EPA hold off on making a final decision until it gets a better idea of how effective the Waste Management and Reduction Plans called for in the TMDL may be.	The TMDLs, WLAs, and LAs established in this document are final. However, a TMDL can always be revised in the future as new data become available.
19-004	It would help the County to understand whether the water quality goals are attainable, if EPA will summarize in the TMDL the approach taken in any other similar PCB TMDLs that may have been implemented to date and discuss the levels of reduction attained through the various implementation strategies used in those TMDLs. If there are no other similar TMDLs, this should be cause for further caution on the attainability question as well as the time needed to implement a final TMDL.	See Theme 2 response. To date, TMDL development for PCBs has not be widespread, but efforts are increasing. The Implementation Advisory Committee is looking at identifying this type of information to inform this process.
19-005	Successfully reducing PCBs in the wastewater and storm water that the County receives will take a community-wide effort, as well as intergovernmental cooperation with the City of Wilmington and the State of Delaware. This will take time and an iterative approach is a must. Any TMDL should reflect this reality – especially in any implementation schedule.	Comment noted.
20-001	Kimberly-Clark agrees that the issue of PCB contamination of the Delaware River Estuary is important and must be addressed. However, we believe that the process used to create the proposed TMDL is flawed and respectfully submit comments regarding the TMDL and the data that was used to produce it.	We believe that the TMDL is based on sound science. See Theme 1 response.

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20-002	The DRBC required the use of EPA Method 1668A for the analysis of PCB congeners for the development of the data base used in the modeling work and in evaluating the dischargers. Kimberly-Clark has several objections to the use of this procedure in the manner prescribed by the DRBC. (1) First, this testing method has not been promulgated as an official test method for use in NPDES permits as required by 40 CFR 136. The procedure was published by EPA in 1999 after a significant amount of development work, but the method was validated by only one laboratory (See "Method 1668, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment and Tissue by HRGC/HRMS", EPA No. EPA-821-R-00-002, December 1999 ("EPA Method 1668"), p. 66). The fact that the method has not been validated by a round-robin laboratory study is reflected in the high amount of variability in the analytical results being obtained as well as the large number of false positive results obtained for method blanks and equipment blanks. This variability and propensity for false positives means that some dischargers will inevitably be labeled as dischargers of PCBs when in fact they are not. We believe that this is the case with the data submitted by Kimberly-Clark. (2) Second, Kimberly-Clark originally submitted Method 1668 results down to the Quantitation Limit or Estimated Minimum Level (EML) as is normally done for such low-level analytical procedures. As defined in EPA Method 1668, the EML is the lowest concentration that a chlorinated biphenyl can be measured reliably with common laboratory interferences present (See EPA Method 1668, Glossary, p. 109). However, in December 2002, the DRBC required dischargers who had used EPA Method 1668 to also report their data in terms of the Estimated Method Detection Limits (EMDL). The EMDL is defined as the lowest concentration at which a chlorinated biphenyl may be detected with common laboratory interferences present. This resulted in numerous dischargers being required to report detected congeners at levels lower than the EPA Method 1668 recommends for use in normal regulatory activities. It is unreasonable for the DRBC to use data reported as EMDLs to develop the regulatory TMDLs for the dischargers. With the known variability in this data set and the laboratory interferences documented in the lab report qualifiers, many dischargers will be required to take actions based on data that is inherently flawed. Kimberly-Clark believes that this approach is wrong and that the DRBC should revise the TMDLs to be based on the EMLs.	(1) Method 1668A is currently undergoing an interlaboratory validation study as per EPA protocols. We encourage and support this process. Furthermore, EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company). (2) In order to estimate discharger concentrations and calculate loadings, data from all dischargers were treated equally. That is, all detected concentrations were used in loadings calculations. Furthermore, all samples collected for the TMDL were utilized in the same manner. Method 1668A defines detected and quantifiable concentration. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used to calculate loadings.

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20-003	The September 2003 TMDL document listed Kimberly-Clark as a potential Group 1 discharger. While not conceding that Kimberly-Clark should have a TMDL imposed upon the KCPA facility at all, we submit that this designation is in error based on the DRBC's own criteria for Group 1 and 2 dischargers as outlined in Appendix 3 of the TMDL document. If one assumes that Kimberly-Clark is in fact a discharger of PCBs at all, it should be considered a Group 2 discharger not a Group 1 discharger. Kimberly-Clark is located within Estuary Zone 4. According to the table of Stage 1 TMDLs for Total PCBs shown on page viii of the Executive Summary of the TMDL document, the WLA (Waste Load Allocation) for Zone 4 is 5.17 mg/day. According to Appendix Table 2-1 of the TMDL document, the Current Loading from Kimberly-Clark is only 0.086 mg/day, well below 10 percent of the Zone WLA. Therefore, under the DRBC definition, Kimberly-Clark should be classified as a Group 2 discharger.	The commenter misunderstood the criteria used to classify NPDES point discharges. Kimberly-Clark is identified as a Group 1 discharger in Zone 4 because it meets the requirements for classification as a Group 1 discharger described in Appendix 3 of the TMDL document. The criterion for calculated loadings considers the cumulative loading percentage to the Zone WLA, as opposed to a single discharger's loading percentage.
20-004	Appendix 3 of the TMDL document specifies that both groups will be required to perform additional monitoring as well as a waste minimization and reduction program. Kimberly-Clark believes that these requirements are unreasonable and unnecessary, and in many cases will achieve no reductions in PCB loadings to the Delaware River estuary. For example, Kimberly-Clark does not use PCBs and never has used PCBs in its processes. There are seven PCB containing transformers still left on the site, but these transformers are all installed within secondary containment to capture any potential spills or leaks of PCB laden oil and are maintained and monitored in accordance with 40 CFR 761.	Waste minimization plans and monitoring will need to be considered on a case by case basis. In some instances, removal of known or suspected sources of PCBs will result in reduced PCB loads over a longer time scale. Some facilities will likely identify many opportunities for load reduction while others will find fewer opportunities. However, a coordinated effort to find and remove PCBs from the estuary is still critical to overall success.
20-005	There is no known source on-site that would contribute to the low levels of PCBs indicated in the laboratory reports. The area is not contaminated by PCB oils or other PCB containing chemicals, and is paved. The only potential source of PCBs in this area is air deposition from off-site sources of air pollution. Aside from the laboratory interferences discussed above, the only real potential source of PCBs in the storm water from the Kimberly-Clark site is air deposition over which we have no control. Therefore, it is unreasonable to impose a requirement for a waste reduction program when we have no way of accomplishing any source controls to achieve a reduction. It is unreasonable to require a discharger to spend money when there is no realistic expectation of any environmental improvement.	Loadings from storm water outfall are influenced by many factors. Therefore, as facilities undertake waste minimization plans, sources of PCBs will likely be identified. In some instances, removal of known or suspected sources of PCBs will result in reduced PCB loads over a longer time scale. Some facilities will likely identify many opportunities for load reduction while others will find fewer opportunities. However, a coordinated effort to find and remove PCBs from the estuary is still critical to overall success.

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20-006	The DRBC should amend the TMDL to use only EPA Method 1668A with data reported at the Estimated Minimum Level (EML). The DRBC should create a third group of de minimus discharges whose current loading is so low that it is not practical to require a waste minimization and reduction program.	(1) The TMDL is based on the best data available at the time the study was performed. Method 1668A defines detected and quantifiable concentrations. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, concentrations greater than the EMDL were used to calculate loadings. (2) The use of two groups of dischargers is appropriate.

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21-001	Exxon Mobil is concerned that although EPA and DRBC have carried out the mechanics of deriving a numerical loading to surface water that could, if all loadings to surface water were controlled, eventually result in achievement of the surface water standard(s), the approach clearly will not result in a significant long-term decrease in environmental risk to human or wildlife receptors because significant reductions in sediment PCB concentrations do not occur -- as depicted in the model figures for sediment PCB concentrations (e.g., Figures 20, 24 and 26 of the report). The model uses sediments as a compartment in which to sequester PCBs from the water column without acknowledging bioaccumulation from sediment to aquatic biota is the greatest contributor to PCB body burdens in many fish, thus overlooking a more significant factor in exposure risk than surface water concentrations per se (particularly when the surface water concentrations are low and sediment concentrations remain high). This factor reduces even more the significance of controlling point source discharges to surface water, which is where the primary burden of surface loading reductions is likely to be aimed. Permitted sources contributing less than 30% of the surface water loading will bear 100% of the cost of source reduction in the Stage I TMDL, without a significant reduction in risk. In most of the other "TMDLs" reviewed by Exxon Mobil, sediment is appropriately considered as a source, not a sink, of PCBs and reduction of sediment PCB loads is considered critical to reducing the risk to human health and the environment. The total omission of sediment as a contributing factor to human and wildlife exposure in the Delaware River Estuary TMDL represents a fatal flaw in a process designed not to achieve surface water concentrations for concentrations' sake, but to protect those receptors. Implementation of the TMDL as defined in the report, and as conceptually described for Stage 2, will not significantly reduce the risk to consumers of fish from the estuary within or beyond the several decades acknowledged by DRBC as needed to realize significant decreases in surface water PCB concentrations using the proposed TMDL.	We disagree. In this model, as in other toxics water quality models, sediment/water column interactions are driven by concentration gradients and settling/resuspension of carbon bounded PCBs. Whether sediment acts as a sink or source for PCBs depends on the relative concentrations in the sediment and water column. This is a fundamental process formulation that is essentially consistent from platform to platform. The suggestion that this model uses sediment as a sink where other models use sediment as a source is incorrect. Similarly, the suggestion that the Delaware Estuary TMDL omits sediment as a contributing factor to human and wildlife exposure is also incorrect. The TMDLs are the projected condition and should not be confused with the existing condition. TMDLs are calculated under condition that all systems are in equilibrium. The model demonstrates that reductions in loads will result in reductions in sediment concentrations as well as water column concentrations on a decadal time scale. EPA requested that the basis for the TMDLs be the current DRBC human health water quality standards for total PCBs. These standards use a bioconcentration factor (BCF) to link water column concentrations to fish tissue. This linkage means that reductions in water column and sediment PCBs will similarly reduce fish tissue concentrations regardless of food chain. Lastly, the end target for the TMDL is the applicable water quality criterion not the PCBs in fish tissue.

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22-001	The proposed Stage 1 TMDLs are inappropriate because: (1) They are based on an extremely limited amount of data gathered over a relatively short period of time. (2) Only a relatively small subset of potential PCB sources (142) were sampled. (3) Many potential PCB sources were not sampled at all. (4) The limited sample data obtained from the relatively few sources that were sampled does not provide a statistically reliable basis for defining the minimum, maximum and average PCB concentrations and loadings from these facilities. (5) The limited data base ignores the potential for substantial variation in the concentration of PCBs in those discharges over time. (6) The samples were analyzed with a relatively new and highly controversial test method (EPA's Draft Test Method No. 1668A) that has not been approved by EPA for use under the federal Clean Water Act or any other statute. (7) The proposed TMDLs do not properly account for the fate and transport of PCB-contaminated sediments throughout the river bed that are attributable to historic releases of PCBs and that are capable of re-releasing PCBs into the water column. (8) The proposed TMDLs do not properly account for potential increases in PCB loadings to separate storm sewers and combined municipal sewers that could result from stormwater runoff that may be contaminated in the future from atmospheric deposition of PCBs within each sewer authority's drainage area and diversion of new stormwater flows from old contaminated sites or new drainage areas that are serviced in the future by expansion of municipal sewer service. (9) The TMDLs propose numerical waste load allocations (""WLAs"") and Load Allocations (""LAs"") in only limited portions of the river (zones 2 through 5). (10) The proposed TMDLs allocate a disproportionate share of the LA's to zones 1 and 2. (11) They do not propose WLAs or Las for one of the dirtiest zones (zone 1) or zone 5, which receives PCBs from the tidal flow of the Atlantic Ocean at concentrations that exceed EPA's Ambient Water Quality Criteria (""AWC""). (12) DRBC failed to quantify potential PCB discharges from: (a) many other potential sources in zones 2 through 5; (b) all point sources in zones 1 and 6; (c) many nonpoint sources throughout the entire river system. (13) The proposed TMDLs and WLA's were calculated to achieve an unreasonably stringent AWC that is based on an outdated Cancer Potency Factor (""CPF"") that EPA acknowledges substantially overstates the alleged upper bound carcinogenic risk attributable to PCBs through the use of discredited animal studies. (14) Some of the WLA's would require dischargers to meet concentrations that are even lower than this old, unreasonably stringent AWC.	(1) The report, "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon," provides detailed discussion of nonpoint sources and detailed discussion of the procedures, data, and assumptions used in estimating the nonpoint source loads. Furthermore, we disagree that most of the data collected to quantify loads has been for point sources. Through the course of this study, DRBC and others collected 51 surficial sediment samples, 59 sections from over 300 core samples, 84 tributary samples, 120 ambient samples, and 210 air samples to quantify loads from other sources. (2) Contrary to the commenter's statement, 142 accounts only for the continuous NPDES point discharges. (3, 4, 5) The TMDL is based on the best available data at the time. Further sampling work will be performed in Stage 2. (6) We used the best available data. Furthermore, EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company). (7) We disagree. The proposed TMDLs consider the fate and transport of sediment. The TMDLs are developed under the equilibrium condition between the sediment layer and the water column. At the equilibrium condition, the sediment layer will not be a source anymore. (8) CSOs were explicitly considered in the TMDLs. MS4s were included in load allocation in the proposed TMDL, but the final TMDLs have been corrected accordingly. (9) The TMDLs were developed only for Zones 2 through 5. (10) The TMDLs did not include the Zone 1. The relatively large load allocation for Zone 2 is based on the main stem Delaware River and is appropriate. (11) We disagree. The segment upstream of Zone 2 and Atlantic Ocean boundary are relatively "cleaner" compared to the waters in the Delaware Estuary. The segments upstream of Zone 2 and downstream of Zone 6 were considered as boundary conditions in the model and TMDL development. (12) We disagree. The commenter is referred to the Model Calibration Report. (13, 14) The current applicable water quality criteria were valid goals for the TMDLs. See Theme 2 response.

22-002	DELCORA denies that it is necessary, feasible or reasonable to achieve the outdated unreasonably stringent AWC. However, even if it was a proper goal, the proposed WLA for DELCORA should be increased by a factor of at least 4.5. Therefore since a significant component of DELCORA's discharge is impacted by precipitation, the Stage 1 TMDL should not include a numerical WLA for any PCBs in DELCORA's discharge. If, however, EPA and DRBC insist on establishing a numerical WLA for DELCORA in the Stage 1 TMDL, the WLA should allow for a wet weather flow that, like Philadelphia, could be 200% of DELCORA's design flow. This approach would increase DELCORA's WLA by an additional factor of 100%.	The targets for the TMDLs are the applicable water quality criteria. See Theme 2 response. Average daily flows, which were provided by the discharger, were used in the calculations. Thus, the influence by precipitation is already considered.
22-003	No numerical WLA should be established now for DELCORA's discharge because the extremely small data set collected to date does not provide a statistically reliable basis for predicting the minimum, maximum and average concentration or quantity of PCBs in DELCORA's wet weather discharge.	See Theme 4 response. The TMDL is based on the best available data at the time.
22-004	The proposed WLAs for sources in Zones 2 to 5 would require a PCB reduction of 2 to 3 orders of magnitude, which is 99% to 99.9%. If DELCORA's maximum PCB discharge was actually 309.423 milligrams per day (mg/day), a quantity we do not concede, the proposed TMDL and WLA would require a reduction from that quantity to 0.332244 mg/day. This would represent a reduction of approximately 99.9%. It is unreasonably harsh, inequitable and disproportionate to require such a reduction by DELCORA because it is impossible for the Stage 1 TMDLs to achieve the AWC and DRBC and EPA are not requiring comparable reductions of PCBs from the uncontrolled "background" sources in the Delaware River above Trenton, in the C&D Canal and in the Atlantic Ocean.	EPA agrees. The TMDL requires substantial reductions in WLAs and LAs compared to existing loads in order to meet water quality standards. The loads contributed by upstream sources will need to be considered in the future. See Theme 3 and 4 responses.

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22-005	It is not scientifically sound to establish such extremely stringent WLAs (that require 2 to 3 order of magnitude reductions in PCB discharges) for sources in Zones 2 to 5 of the river as long as no corresponding WLAs are established for Zones 1 and 6. It is unreasonably harsh and pointless to establish a numerical WLA for DELCORA in the Stage 1 TMDL when the water quality at and near DELCORA's outfall will continue to exceed the AWC by over two orders of magnitude. Alternatively, the Commission and EPA should only impose non-numerical WLAs in the Stage 1 TMDL. If necessary, numerical WLAs could be established in the Stage 2 TMDL after the Commission collects more data and establishes a comprehensive plan for regulating all PCB discharges into the river. If and when DRBC determines it can reasonably achieve an appropriate water quality standard, it would be reasonable to establish numerical WLAs for all discharges in a process that establishes an equitable burden on all affected parties at the same time.	See Theme 4 response. We agree that the loads contributed by upstream and downstream sources will also need to be considered in the future. EPA notes that the upper portions of the Delaware River have recently been identified on New Jersey's proposed Clean Water Act Section 303(d) list of impaired waters for PCBs. Delaware's Section 303(d) list already identifies Zone 6 as having PCB impairments on.
23-001	The proposed TMDLs are deficient because they do not contain individual WLAs. Instead, the TMDLs propose the use of "non-numeric" water quality-based effluent limitation ("WQBELs"). EPA's regulations authorize the imposition of non-numeric limits – such as best management practices ("BMPs) – if numeric effluent limits are infeasible or BMPs are reasonably necessary to achieve standards. 40 CFR. § 122.44(k)(3) and (4). As to the former, EPA has failed to demonstrate that numeric effluent limits are infeasible. For the latter, this regulation merely allows EPA to require BMPs in addition to numeric WQBELs. It does not authorize EPA to substitute BMPs for numeric WQBELs.	The TMDL does contain individual, numeric WLAs for the 142 point sources wherever data shows that the discharge has the potential to cause or contribute to exceedance of water quality standards. In addition, the TMDL itself establishes categorical WLA for MS4s within each zone to address direct or indirect communities that likely discharge into the Delaware River. The WLAs are contained in Appendix 2 of the TMDL report. While discussed extensively in the TMDL in part to identify the reasonable assurance these TMDLs can be achieved, implementation issues, such as the ones raised by the commenter, are beyond the scope of a TMDL. Such issues are properly addressed in the reissuance of NPDES permits wherein all interested parties may comment, and if not satisfied, appeal the issuance of such NPDES permits in the appropriate state or Federal forum. The TMDL does not, and is not required to contain an implementation plan as part of the TMDL. The TMDL is in essence a plan and framework by which to orchestrate reductions necessary to attain water quality standards. The plan provides for a logical and effective approach for reducing PCBs to the Estuary.

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23-002	The Clean Water Act does not allow a "staged" approach to TMDL development. Indeed, the Act imposes strict deadlines on EPA review, approval, and promulgation of TMDLs.	See Theme 3 response. While EPA supports the development and establishment of a Stage 2 TMDL as a refinement of Stage 1 efforts, EPA finds that this Stage 1 TMDL meets all regulatory and statutory requirements. EPA continues to believe that the TMDL process is iterative and expects revisions as better monitoring data and analysis becomes available. EPA establishes this Stage 1 TMDL which will be effective until and unless the Stage 1 TMDL is replaced or amended. The comment regarding future TMDL establishment plans does not undermine the integrity of the Stage 1 TMDL.
23-003	The proposed TMDLs are not designed to meet water quality standards for the Delaware Estuary. Design of the proposed TMDLs are based on one of ten homologous subsets that include only 46 of 209 known PCB congeners referred to as "Penta-PCBs." Water quality modeling considering only penta-PCBs is an oversimplification that does not account for the varying physical and chemical properties such as solubility and volatilization rates of the individual congeners and homologs across the total PCB spectrum.	EPA disagrees. These TMDLs are designed to achieve the applicable water quality standards. Since pentachlorobiphenyls (penta-PCBs) were the dominant homolog in fish tissue monitored in the estuary, and since ambient data indicated that throughout the estuary this homolog represents approximately 25 percent of the total PCBs present, the penta-PCBs were selected. Based on the recommendations of the expert panel, a review of the data, and recognizing some uncertainty. EPA adopted this approach. Given the fact that existing loads are 2 to 3 orders of magnitude higher than TMDLs, this approach seems appropriate.
23-004	The proposed TMDLs do not include allocations of allowable loads to the significant nonpoint sources and existing stream loads. The TMDLs do not identify other significant nonpoint sources such as CERCLA and RCRA hazardous waste sites, tributaries, and sources of airborne PCBs that represent nearly an order of magnitude greater PCB loading than the point sources.	EPA disagrees. The TMDL does provide information on load allocations contributed by contaminated sites, MS4s, and combined sewers, in addition to nonpoint sources. This TMDL considers the results of over 800 analytical samples from various matrices including the main stem Delaware River and tributary water, sediment, air, and effluent.
23-005	The TMDL development process does not result in allocations for the various sources that are reasonable both technologically and politically, and that could be expected to be achieved when implemented.	The WLAs and LAs are allocated in order to achieve the applicable WQS regardless of whether they can achieve those reductions immediately. EPA finds the allocations reasonable and equitable for the reasons set forth in the TMDL discussion how the allocations were established.

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24-001	Current proposals of defining an adequate level of PCBs in the Estuary are inadequate because they depend on dischargers to define their own plans.	The TMDL identifies WLAs and load reductions necessary to attain and maintain water quality standards. The TMDL does not establish NPDES permit conditions. NPDES permitting regulations require any effluent limits to be consistent with the assumptions and requirements of the approved WLAs. EPA believes that the approach to include development and implementation of PCB minimization plans are an appropriate step that may result in achievement of the individual WLA. What is required in a PCB minimization plan is ultimately the state's decision. EPA does reserve its discretionary authority to object to any NPDES permit effluent limit that it finds is inconsistent with Federal NPDES permitting requirements. Likewise, if the Permittee or the public disagrees with any proposed NPDES permit and timely comments, that person may appeal that permit in the appropriate NPDES forum in order to adjudicate the issue. The requirement for dischargers to conduct waste minimization programs and perform additional monitoring for PCB congeners is only the first step in reducing the loadings of PCBs to the estuary.
24-002	Dischargers will continue to insist on cost-effectiveness as a crucial criterion for the level of reduction attained rather than the welfare of the river water and its users.	Section 303(d) of the CWA and the implementing regulations in 40 CFR Part 130 require that a TMDL and its allocation scheme be developed based on the assimilative capacity of the waterbody for a given pollutant, not based on the cost-effectiveness of the level of reductions required. Consistent with those requirements, this TMDL was designed to attain applicable water quality standards and, ultimately, to achieve the designated uses of the Delaware River. In accordance with Section 303(d) of the CWA and implementing regulations, the current applicable PCB criteria to protect human health do not provide for adjustments to PCB reduction levels based on cost-effectiveness. Such uses include the protection of not only human health due to consumption of fish caught in the estuary, but also the health of fish and wildlife in the estuary since the standards to protect these uses are less stringent than the human health standards. Any NPDES requirements for dischargers imposed consistent with the WLAs to conduct waste minimization programs and perform additional monitoring for PCB congeners is only the first step in reducing the loadings of PCBs to the estuary.
24-003	Concentrations of PCBs in living organisms are subject to biomagnification. The quantification of such effects is far from being understood, so extreme caution should be exercised in setting limits.	See Theme 2 response. The impact of biomagnification through the food chains present in the Delaware estuary will be addressed after a bioaccumulation factor is incorporated in a revised human health criteria.

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26-001	The Stage 1 TMDLs should not contain WLAs assigned to each individual point source discharger.	EPA disagrees. See Theme 4 response.
26-002	The elements of the proposed NPDES permitting process set forth in Appendix 3 of the TMDL Report need to be clarified and revised. The basis for determining "significant" point source dischargers is both flawed and inconsistent with the materials distributed by the agencies at the April 29, 2003 public briefing that are included as Appendix 1 of the TMDL Report.	Same as comment 11-006.
26-003	Given the manner by which the PCB sampling data was used to develop the Stage 1 WLAs (discussed in more detail in Appendix A of these comments), point source dischargers with no net addition of PCBs to the Estuary may be subject to the WMRP requirements. Without some statistically reliable measure of the true significance of a discharge, a meaningful WMRP cannot be prepared and the effort will not result in pollutant reductions at all. Therefore, confirming the presence of PCBs in a discharge at statistically significant levels on a net basis should be the prerequisite to the WMRP requirement in Stage 1.	Waste minimization plans and monitoring will need to be considered on a case by case basis. In some instances, removal of known or suspected sources of PCBs will result in reduced PCB loads over a longer time scale. Some facilities will likely identify many opportunities for load reduction while others will find fewer opportunities. However, a coordinated effort to find and remove PCBs from the estuary is still critical to overall success. Although EPA discusses possible permit requirements that could be found consistent with the TMDL WLA in Appendix 3, the suggested criteria on which to base the need for a WMRP ultimately lies within the discretion of the state permitting programs.
26-004	Method 1668A, which is specified as the analytical method, is not an approved EPA method and therefore cannot be included as an enforceable condition of an NPDES permit. Moreover, even if the analytical method could legally be included as a condition of an NPDES permit, there are no established standards either for the use of the method or for the reporting protocols that are established when analytical methods are formally approved.	Method 1668A has undergone a single laboratory validation and is currently undergoing an interlaboratory validation study as per EPA protocols. Furthermore, EPA has recommended the use of Method 1668A for monitoring for the generation of data used to determine total daily maximum loads (TMDLs) (EPA letter dated May 31, 2000 from William A. Telliard to Joe Rogan, PECO Energy Company).

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26-005	The description of the NPDES permitting process is silent on the timeframes anticipated for compliance with the WLAs in spite of the fact that the TMDL Report acknowledges that meeting the water quality standards through the implementation of the TMDLs could take decades. The interplay between NPDES permitting cycles and the enforceability of TMDL requirements needs to be explained now in the context of the overall TMDL approach. Permitting issues such as "net" effluent limitations, interim effluent limitations, monitoring requirements and compliance schedules are important elements of the TMDL regulatory strategy for point sources and are not discussed at all in the TMDL Report, thereby precluding meaningful comments at this time.	See Theme 5 response. Although the TMDL report describes the general NPDES permitting process the three states will use to implement the TMDL, EPA does not believe that the TMDL report necessarily requires an explanation of the various permitting issues listed by the commenter. EPA agrees that theses are valid concerns, but they are beyond the scope of the TMDL.
26-006	The point source contribution of PCBs to the Delaware Estuary is drastically overstated because of: (1) the lack of uniformity in sample collection methodologies and analysis; (2) DRBC's application of the data, which led to conclusions that PCBs were present where none were actually detected using the most sensitive analytical methods; and (3) inconsistent application of the ratio of the penta congener to total PCBs, since a 25% factor was used for point sources to develop the WLAs whereas only a 14.65% factor was used for nonpoint sources to develop the LAs.	We disagree that the point discharge contribution is drastically overstated. The methodologies for sample collection were reviewed for consistency. The differences in analytical method do not lead to an overestimation of PCB concentration. Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. Since the true concentration of a non-detect sample is somewhere between zero and the detection limit, setting the concentration equal to ½ the detection limit is equally likely to underpredict or overpredict the true concentration. Comparisons among source categories were performed at the penta-PCB level. For point discharges, this meant using the actual measured penta-PCBs. For contaminated sites it meant estimating the penta fraction using the proportion of domestic production that was penta PCB. At the penta level, neither of these approaches would result in overestimating point discharges or underestimating contaminated sites. The scale up from penta to total PCBs used a factor of 4 for all source categories. Therefore, point discharges were not biased high.

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26-007	The data submitted to DRBC for consideration as part of the development of the PCB TMDLs was misapplied in several significant respects. For example, DRBC assumed PCB concentrations for sample results determined to be nondetect using the most sensitive analytical methods, failed to apply standard QA/QC procedures by ignoring data that showed contamination in sample blanks and failing to address false positive results, and did not take into account known limitations of Method 1668A.	(1) Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. (2) Data validation protocols were not universally discussed and agreed upon for the Stage 1 TMDL. Detectable concentrations in sample blanks does not prove a false positive. (3) Agreed. Potential limitations regarding the method will be more fully explored in the interlaboratory validation study currently under way, and incorporated into the revised methodology. In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required in a TMDL.
26-008	The database for contaminated sites is inadequate, thereby underestimating their potential source contribution of PCBs to the Estuary. The estimate of loadings from Contaminated Sites is incomplete. Contaminated Sites are a major source category and therefore a complete estimate of their loadings has to be included in the short-term calibration before the model can be considered calibrated.	When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration. We agree that amore refined and comprehensive estimate of the contaminated site load id desirable.
26-009	There is no discussion about the relationship between the numeric water quality standards and the fish consumption advisories that led to the stream impairment designations by the states. A more detailed assessment of the causes of fish tissue concentrations might lead to an alternate set of TMDL requirements with different interim targets or endpoints. Understanding the pervasiveness of PCBs in the environment might also shed light on the reality of the PCB targets established for the Delaware Estuary.	See Theme 2 response.
26-010	The efforts of the Implementation Advisory Committee should not be constrained by DRBC's policies and procedures. The Committee needs to take an unfettered look at the PCB TMDLs and freely evaluate cost-effective strategies for reducing PCB loadings to the Delaware Estuary.	There was no intention to limit the efforts of the Implementation Advisory Committee. The Committee's role and the findings are much to come.

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Letter ID	Public Comment	Response
26-011	The PCB load reduction required by the PCB TMDLs is dramatic for both point and nonpoint sources, ranging in excess of 95%. Nevertheless, there is no analysis of the feasibility of achieving the WLAs or LAs or the costs of compliance. Given the pervasiveness of PCBs in the environment and their discovery in uninhabited areas around the world, the likelihood that the current water quality criteria for PCBs in the Delaware Estuary can be achieved is questionable.	See Theme 2 response.
26-012	DRBC, in its request that point source dischargers perform monitoring in support of the PCB TMDL study, did not specify the use of a particular analytical method, but did require an analysis of PCB congeners that was consistent with USEPA Method 1668.	Same comment as 11-019.
26-013	DRBC did not adequately define the intended use and appropriate data quality requirements for the PCB TMDL study when it was initiated. As a result, the collected data appears to be insufficient to support the promulgation of the PCB TMDLs.	See Theme 1 response.
26-014	DRBC has not demonstrated that the data used to develop estimates of the PCB loading to the Delaware Estuary are reliable, and in fact, appears to have based estimates on data that do not meet the criteria for the analytical method, standard practice, or QAPP requirements.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required for an approvable TMDL. Where DRBC used method 1668A, sample results were rigorously scrutinized by the lab. Target concentrations were determined by isotopic dilution/ internal standards methods and sample specific detection limits were determined. Laboratory qualifier flags were defined prior to analysis. Method blanks were collected and analyzed as part of a Ongoing Precision and Recovery program. System and laboratory performance was undertaken for all analysis; retention time, recovery data, ion abundance ration were compared to method requirements. Those analyses which did not meet method requirements were either reanalyzed or noted in the QA/QC report.
26-015	The QAPP developed by the Coalition includes a data validation process that is consistent with standard data validation practice.	Comment noted.

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26-016	Data from Method 1668A cannot be considered reliable and accurate if the potential impact of laboratory or field contamination on sample results is ignored.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required in a TMDL. Neither sample nor ambient results were adjusted for blank concentrations the TMDL. Blank contamination does not prove a false positive.
26-017	Until interlaboratory validation of Method 1668A is completed, data from Method 1668A should only be used for screening purposes, unless the data have been validated by a qualified reviewer independent of the laboratory generating the data, consistent with current data validation guidance.	Data validation protocols were not universally discussed and agreed upon for the TMDL. See Theme 1 response.
26-018	DRBC did not address false positive results in the PCB TMDL Report, and must do so in order to satisfy QA/QC requirements.	Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive.
26-019	DRBC must revisit the Method 1668A data sets and apply the appropriate reporting limit, i.e. the minimum level of quantitation, rather than the minimum detection level or estimated minimum detection level.	The TMDL was based on the best available data. Detected and quantifiable concentrations were used in the Stage 1 TMDL. Method 1668A defines the Estimated Method Detection Limits (EMDLs) and the Estimated Minimum Levels (EMLs). These provide an indication of the concentration within a sample and the certainty with which that concentration is known. EMLs are defined as the lowest concentration at which an analyte can be measured reliably with common laboratory interferences present. EMDL is defined as the lowest concentration at which an analyte can be detected with common laboratory interferences present. Therefore, we disagree that concentrations exceeding the EMDL should be ignored.
26-020	Consistent and achievable interlaboratory quantitation limits, based on sound scientific principles and considering all potential sources of error and uncertainty, must be developed.	The interlaboratory validation study is underway for Method 1668A. We encourage and support this process.
26-021	DRBC should consider other potential limitations known to be associated with Method 1668A (retention time shifts and co-elution of congeners due to column degradation or other causes). Potential limitations of Method 1668A are discussed in greater detail in comments on the Method in "Comments on EPA's Proposed Standards for the Use or Disposal of Sewage Sludge" prepared by the Alliance of Automobile Manufacturers, et al. (March, 22, 2000). Comments are included in the appendices.	Potential limitations regarding the method will be more fully explored in the interlaboratory validation study currently under way, and incorporated into the revised methodology.

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26-022	DRBC provided no information on data quality review in the PCB TMDL Report, thus preventing a determination as to whether the data quality goals of the DRBC QAPPs have been satisfied.	In all instances, the TMDL is based on the best data available at the time the study was performed. The data is sufficient to estimate loads from various source categories, characterize the main stem Delaware concentrations, and develop a linkage between loads and concentrations. A complete definition of how data will be used is not required in a TMDL.
26-023	In the PCB TMDL Report, DRBC erroneously ignored blank contamination indicating false positives.	Neither sample nor ambient results were adjusted for blank concentrations in the TMDL. Blank contamination does not prove a false positive.
26-024	DRBC failed to provide technical or legal justification for its use of a one-half detection limit for non-detected values.	Setting non-detect data to ½ the detection limit is a standard and accepted treatment of non-detect data. This treatment is well established in the literature. Project specific justification is not required.
26-025	Better Definition of Loads from Nonpoint Sources is Required. Despite evidence presented by DRBC (2003) that the dominant PCB loads to the tidal Delaware River are from tributaries and other nonpoint sources, the focus of TMDL development in Stage 1 has been on point sources. For example, the data presented by DRBC (2003) indicate that, overall, point sources contribute less than 10% of the current PCB loads to the tidal Delaware River. However, most of the data collected to quantify loads has been for point sources. This bias is evidenced by Section 1.6 of DRBC (2003), entitled "Pollutant Sources, Loadings and Ambient Data", which presents virtually no discussion of nonpoint sources. In addition, DRBC (2003) provides no detail regarding the procedures, data or assumptions used in estimating any of the nonpoint source loads. As a result, the uncertainties in identifying, quantifying and controlling PCB loads from specific nonpoint sources are significantly greater than for the point sources.	The report "Calibration of the PCB Water Quality Model for the Delaware Estuary for Penta-PCBs and Carbon" provides detailed discussion of nonpoint sources and detailed discussion of the procedures, data, and assumptions used in estimating the nonpoint source loads. Furthermore, we disagree that most of the data collected to quantify loads has been for point sources. Through the course of this study DRBC and others collected 51 surficial sediment samples, 59 sections from over 300 core samples, 84 tributary samples, 120 ambient samples, and 210 air samples to quantify loads from other sources.

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Letter ID	Public Comment	Response
26-026	PCB Loads from Point Sources Appear to be Overestimated, and Loads from Nonpoint Sources Underestimated. The "simplified" approaches used by DRBC (2003) in Stage 1 appear to overstate PCB loadings from point sources and (based on the very limited data presented by DRBC) understate PCB loadings from nonpoint sources. For example, in evaluating point sources, DRBC has apparently relied on gross PCB loadings even though the source of at least a portion of the PCBs in the discharge may be the Delaware River itself. On the other hand, potential nonpoint PCB loadings from contaminated sites in New Jersey appear to have been largely ignored in Stage 1, based on the list presented in Appendix 4, Table 4-1.	As indicated, the NJ contaminated site load estimates were not completed in time for inclusion in the modeling. When the estimated loads from all sources were applied to the model, simulated results matched observations with no adjustment of calibration parameters. While not explicitly separated out, the NJ contaminated site were accounted for as part of the ambient concentration. We agree that a more refined and comprehensive estimate of the contaminated site load, as well as a more refined approach to estimating net loads for facilities withdrawing from the Delaware or tidal tributaries, is desired.
26-027	Specific Plans for Nonpoint Source Reductions are not presented. Because of the focus on point sources, DRBC has not presented any specific plans for reducing PCB loads from nonpoint sources. Given the magnitude of estimated current PCB loads from tributaries and other nonpoint sources, such plans are necessary to provide assurance that the TMDLs can be achieved.	TMDLs are not required to have implementation plans. However, in April 2003 EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also included in Appendix 1 of the TMDL report. This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments. Additionally, DRBC has organized a broad-based stakeholder committee to identify both immediate and long-term actions to reduce source PCB loadings. The "Implementation Advisory Committee," to date has been charged with identifying activities which will address nonpoint sources, among others, to reduce PCB loads.
26-028	The Basis and Achievability of the Ambient Water Quality Objective Should be Revisited. The most stringent PCB water quality objective used in Stage 1 (7.9 pg/L) is approximately 8 times lower than the EPA (2002a) current National water quality criterion (64 pg/L). It is also based on a 1x10 -6 risk target, while both EPA (2000) and DRBC's Toxics Advisory Committee recommend consideration of the use of a 1x10 -5 risk target. Because of the conservative assumptions used in developing the PCB water quality objective of 7.9 pg/L, it corresponds to a very low PCB target in fish tissue (i.e., less than 1 ppb). Such low concentrations in fish are very rarely achieved, even in the most remote surface water bodies. Thus, fish tissues from almost all surface water bodies sampled in the Mid-Atlantic region have concentrations exceeding the DRBC target. This result is consistent with the ubiquitous nature of PCBs, and the finding that nonpoint sources are dominant.	See Theme 2 response. Same comment as 11-024.

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26-029	Achieving the WLAs will not Materially Affect Conditions in the Estuary. Given the lack of control that can be demonstrated for tributaries and other nonpoint sources, the procedures used by DRBC (2003) to determine WLAs are inappropriate and result in PCB loading targets for point sources that are overly stringent and will not materially affect conditions in the tidal Delaware River, if achieved. DRBC's Administrative Manual and it's TMDL Implementation Policies and Procedures Document (DRBC 1995) both specify that the water quality objective should be set at the higher of the water quality criterion or the "background" concentration, where background corresponds to loadings that are not subject to control. DRBC (2003) has developed the WLAs based on the much more stringent water quality objective. As a result of the approach, and other simplified methodologies used in Stage 1, the WLAs for point sources are extremely low and in some cases even result in discharge concentrations that are less that the ambient water quality standard itself.	See Theme 2 and 4 responses.
26-030	The present approach incorporated in the water quality criteria assumed that the fish and water concentrations were at a constant ratio (e.g. constant BAF/BCF). This was not applicable to the present situation in the Delaware Estuary because the recent historical data demonstrated that the ratio of fish tissue PCB concentrations to that of the water column was increasing. Since reducing PCB concentrations in fish tissue was the ultimate goal of the PCB TMDL, the value of the present approach is severely limited. A food chain bioaccumulation model is needed to relate fish tissue PCB concentrations to that in the ambient water column and sediment bed.	Longer term monitoring is needed to ultimately determine whether fish and water PCB concentrations are changing or whether perceived changes are normal variability within a currently stable regime. Additional monitoring and a food chain model may be considered for Stage 2.

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26-031	The summary figure of PCB loads to the estuary presented in the model calibration report (Figure 2.1, p. 37) is not representative of all the sources of PCBs. It neglects (1) gas absorption, (2) downstream boundaries (e.g. Atlantic Ocean) and (3) current PCBs in the sediment bed. Based on unit load calculations using the DRBC model, the current contribution of point sources to PCBs in the water column is small and less than 9% throughout the estuary. The average of all the model segments is 5% and the volume-weighted average over the estuary is 1%. When CSOs are included average of the model segments is 7% and the volume-weighted average is 2%. This analysis accounts for all sources of PCBs (e.g. gas absorption), unlike the summary of loads presented in the DRBC model calibration report.	Figure 2.1 depicts the external loads. Fluxes and tidal boundary loads are most appropriately computed within the model framework. As indicated by the commenter, gas phase air concentrations, downstream boundaries, and sediment concentrations are important sources of PCBs.
26-032	The model predicts that: (1) Under any management scenario, including complete and instantaneous elimination of all PCB loadings categories (incl. Atlantic Ocean, atmosphere), the PCB water quality criteria will not be met for the next several decades; (2) Significant reductions from the more prominent sources will be necessary in order to make progress towards achieving the water quality criteria; (3) Even a very aggressive point source control strategy will not result in meaningful progress towards achieving the water quality criteria.	As stated in the TMDL, achieving the water quality standards for PCBs in the Delaware Estuary will require significant reductions from current loadings from both point and nonpoint sources. In addition to reducing PCB loads from sources discharging directly to the estuary, reductions from sources in the non-tidal portion of the river, local and regional air emissions, and sources contributing to elevated PCB concentrations in the Atlantic Ocean will be necessary to achieve and maintain the applicable PCB standards. In April 2003 EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also an Appendix to the TMDL. This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments.

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26-033	Long-term decadal scale behavior of the model appears to be inconsistent with historical fish tissue and sediment bed concentrations. This is important because it suggests the model is incapable of correctly forecasting the response to changes in loadings. It is likely that the estuary response time is longer than the present model predicts.	The model developed by DRBC was not designed to predict PCBs in fish tissue. Making judgment on the model performance by comparing non-simulated variable is not appropriate. From the comparative plots results of PCB between water column and fish tissue, It is clear that the aforementioned uncertainty came from the wide range of distributions (both spatially and temporarily) of fish tissue data rather than the issue of the model. We believe that it is not possible to confirm the existence of any trend in the PCB concentrations in surficial sediment due to high data variability. Thus, we disagree with the commenter's interpretation on the performance of the model. Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. The selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. A reality check of the hindcast loading tend for recent data and an estimate of the uncertainty of the hindcast loading trend is being considered for Stage 2.
26-034	The model is not able to predict contemporary spatial PCB sediment concentrations in the lower portions of the estuary.	Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. The selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. A reality check of the hindcast loading trend for recent data and an estimate of the uncertainty of the hindcast loading trend is being considered for Stage 2.
26-035	The organic carbon model does not reproduce estuarine turbidity maximum and the effect of this on PCB predictions is not addressed. This may be related to the results of the decadal scale consistency check, which suggested a problem with the sediment-water column dynamics. Before proceeding with using this model for management decisions DRBC needs to improve the model or establish that this omission is not important for PCB fate and transport.	The organic carbon model has been reviewed and judged scientifically credible and adequate by panel of experts. Improved carbon simulation is considered for Stage 2.
26-036	An important consistency check of the organic carbon model is that that it is consistent with observed sediment oxygen demand (SOD). This is listed as a step in the model calibration; however, the resulting spatial and temporal distributions of SOD are not presented nor compared to observations.	A constant value of Sediment Oxygen Demand (SOD) rate of 0.5 g/m2 day was used to calculate PDC decay rate of 0.00026 per day in sediment layer. The SOD rate was obtained from the previous modeling study for the Delaware Estuary by HydroQual, Inc. in 1998.

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26-037	The hind cast simulation uncovered important inconsistencies between the historical and present sediment and fish tissue data and the model predictions. Recommendations are for model improvements in at least three areas appear necessary: (1) PCB forcing functions, and (2) the effect of episodic events and long-term changes in non-PCB forcing functions. It is important to resolve these discrepancies for the next phase of the TMDL process.	We believe that it is not possible to confirm the existence of any trend in the PCB concentrations in surficial sediment due to high data variability. Thus, we disagree with the commenter's interpretation on the performance of the model. The model developed by DRBC was not designed to predict PCBs in fish tissue. Making judgment on the model performance by comparing non-simulated variable is not appropriate. However, further investigation on historical loading trend, and refinements on carbon model will be performed in Stage 2.
26-038	A careful analysis of fish tissue data and historical surface sediment data.	Agreed.
26-039	Additional sediment sores should be collected in order to validate the temporal trend seen in the Woodbury Core.	The comments are well considered. Additional data collections are anticipated for any future TMDL revisions.
27-001	Sunoco, Inc. is a member of the Delaware Estuary TMDL Coalition and endorses the comments of the Coalition and incorporates them into these comments.	Comment noted.
27-002	Sunoco commends the Delaware River Basin Commission and the other agencies that have dedicated considerable resources to this extremely complex subject. A lot has been accomplished to gain an understanding about PCBs, the estuary and the sources of these compounds. However, much more information, data and analysis are needed and more understanding of scientific forces at play must be gained before a sound approach for dealing with PCBs in the estuary can be adopted. Given these circumstances, Sunoco supports the proposed staged regulatory approach.	Comment noted.
27-003	Sunoco urges EPA not to issue individual wasteload allocations to each point source. Instead, EPA should adopt a single categorical wasteload allocation (WLA) to point sources as a group.	See Theme 4 response.
28-001	The proposed TMDL does not include any quantified or quantifiable reductions in PCB loadings to the River. Instead, it requires more monitoring, and for dischargers to develop their own BMP plans for reducing PCBs. Monitoring, discharger plans, and "cost-effective' "appropriate" BMP plans with no requirement for full implementation cannot provide us the PCBs reductions and protections we need and the law requires.	The TMDL identifies numeric allocations and reductions necessary to attain applicable PCB criteria. EPA believes that the approach to include development and implementation of PCB minimization plans are an appropriate step that may result in achievement of the individual WLA. These pollutant minimization plans must be implemented fully.

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Letter ID	Public Comment	Response
28-002	The staged approach embodied in the proposal is flawed and provides no assurance of timely PCB reductions or even completion of the stated stages themselves. As a result of the staged approach and EPA's failure to require reopener of permits for implementation of the TMDL requirements (instead relying on existing expiration timelines) means that Stage 1 will not result in the monitoring data EPA asserts it needs to do Stage 2 (i.e. many of the permits don't expire until 2004 or 2005 and in some cases 2006, therefore they cannot provide data in time, if at all, for a 2005 Stage 2 deadline). And Stage 2, in many instances, won't even be required of many sources of PCBs, including some of the more significant point sources, until the year 2010, 7 years from now. There is no commitment that Stage 2 ever be implemented. The TMDL currently being proposed relies heavily on future action in a Stage 2 TMDL. And yet there is no enforceable commitment to, or mechanism for, ensuring that Stage 2 will ever even happen.	See response to comment 31-002.
28-003	The PCBs TMDL being proposed needs to include quantified, required reductions in PCBs from point and nonpoint sources of contamination and include an automatic reopener clause to provide for immediate implementation	The TMDL identifies numeric allocations and reductions necessary of point and nonpoint sources to attain applicable PCB criteria. See Theme 5 response.
29-001	Our biggest concern is that if a numerical limit for PCB's is ultimately placed in our plant's discharge permit, the CCMUA, and its rate payers, could be unjustly penalized for the wrongdoing of an unidentified discharger or, because our plant is tributary to a combined sewer system, for being the unwilling recipients of contaminated runoff.	Comment noted. It is EPA's understanding that the States will assign non-numeric WQBELs consistent of the WLAs in NPDES permits of those facilities identified in the TMDL report.
31-001	The proposed TMDL does not include any quantified or quantifiable reductions in PCB loadings to the River. Instead, it requires more monitoring, and for dischargers to develop their own BMP plans for reducing PCBs. Monitoring, discharger plans, and "cost-effective' "appropriate" BMP plans with no requirement for full implementation cannot provide us the PCBs reductions and protections we need and the law requires.	The TMDL identifies numeric allocations and reductions necessary to attain applicable PCB criteria. EPA believes that the approach to include development and implementation of PCB minimization plans are an appropriate step that may result in achievement of the individual WLA. These pollutant minimization plans must be implemented fully. See Theme 4 response.

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Letter ID	Public Comment	Response
31-002	The staged approach embodied in the proposal is flawed and provides no assurance of timely PCB reductions or even completion of the stated stages themselves. As a result of the staged approach and EPA's failure to require reopener of permits for implementation of the TMDL requirements (instead relying on existing expiration timelines) means that Stage 1 will not result in the monitoring data EPA asserts it needs to do Stage 2 (i.e. many of the permits don't expire until 2004 or 2005 and in some cases 2006, therefore they cannot provide data in time, if at all, for a 2005 Stage 2 deadline). And Stage 2, in many instances, won't even be required of many sources of PCBs, including some of the more significant point sources, until the year 2010, 7 years from now. There is no commitment that Stage 2 ever be implemented. The TMDL currently being proposed relies heavily on future action in a Stage 2 TMDL. And yet there is no enforceable commitment to, or mechanism for, ensuring that Stage 2 will ever even happen.	See Theme 3 and 5 responses, response to comments 04-006.
31-003	The PCBs TMDL being proposed needs to include quantified, required reductions in PCBs from point and nonpoint sources of contamination and include an automatic reopener clause to provide for immediate implementation	See Theme 4 and 5 responses.
32-001	We felt this method (1668A) was the only allowable choice for generating data at low enough detection levels and with enough specificity to meet DRBC's needs. This method is, however, very expensive and is not approved for us in the Clean Water Act program at 40CFR136. DRBC approved an alternate method for dischargers which does not provide adequate detection limits and freedom from interferences; i.e. EPA Method 8082 as modified by Lancaster Laboratories. We believe that EPA should not establish or enforce Waste Load Allocations (WLAs) for individual point source dischargers until comparable data for all sources is available using method 1668A.	See response to comment 05-003 and Theme 4 response. As noted in Appendix 3 of the TMDL report, all dischargers will be required to conduct additional sampling utilizing EPA Method 1668A.

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32-002	Neither DRBC or EPA have adequately investigated and modeled other potential sources of PCBs to fish flesh in the Delaware Estuary to establish reasonable assurance that the proposed TMDLs will have any significant impact on removal of fish advisories. A TMDL that allocates WLAs and Load Allocations (LAs) to various sources cannot provide any assurance of reduced fish flesh concentrations of PCBs without understanding and considering the food web and specific food chains in the Estuary. The source of PCBs to fish must be the real focus of the monitoring, modeling, and TMDL efforts.	An important component of the TMDL development was the identification and quantification of sources of PCBs to the Delaware Estuary. This is manifest in the numerous studies and assessments of air, sediments, biota, tributaries, contaminated sites and nonpoint sources to determine their relative contribution of PCBs to the estuary. The model calibration report describes how the loadings from these source categories were determined for use in the calibration of the penta-PCB water quality model. The TMDL report presents tables and graphs depicting the relative importance of each of the source categories. While we agree that the TMDLs alone do not provide any assurance that fish tissue concentrations will be reduced, we do not agree that the TMDLs ignore the food chains of the estuary. The TMDL is based upon water quality criteria that utilize a bioconcentration factor (i.e., the uptake of PCBs by fish directly from the water). Bioaccumulation studies conducted to provide data to determine a bioaccumulation factor for use in establishing revised water quality criteria indicated that this revised criteria will be in the same order of magnitude as the current criteria. Thus, reductions from current PCB levels that are 100 to 1000 times higher than either current or proposed water quality criteria are needed regardless of the incorporation of bioaccumulation in the target for the TMDLs.
32-003	Both DRBC and EPA have shifted the focus of the TMDLs to exceedances of mathematically derived water quality standards for PCBs and away from measures that would specifically impact fish flesh concentrations of PCBs, will serve only as a grand experiment that will be very expensive to implement with very uncertain outcomes. Mathematical derivation of standards relies on many unconfirmed assumptions and contains many compounded safety factors that are not explicitly explained. This makes it highly likely that focusing on continually reducing water quality standards, and then developing point source WLAs to meet them in the water column, will be overly stringent and would not have the desired impact on reducing PCB fish flesh concentrations. Alternative TMDL scenarios and nonpoint sources need to be fully evaluated before plunging ahead with TMDLs that may not be attainable from a water column concentration perspective, nor effective in removing fish consumption advisories. We recommend significantly more study of the PCB issue to make sure that EPA and DRBC are pursuing TMDLs that will actually impact fish flesh, and that the TMDLs can be implemented in as cost-effective a manner as possible.	See responses to comment 21-001and 32-002.

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Letter ID	Public Comment	Response
32-004	Oxychem believes that it is far too premature to assign or even suggest LAs and WLA for specific sources. This is especially true when such derived WLAs, for instance, are below normal measurement capability and cannot be attained with current wastewater treatment technology. We think this is true for the low concentrations of PCB congeners required by the WLAs for point sources. Neither EPA nor DRBC have demonstrated the availability of treatment technology to resolve this issue, much less provide a cost-effective solution, thus making EPA's actions ineffective, arbitrary and capricious.	A TMDL and its allocation scheme should be based on the assimilative capacity of the waterbody for a given pollutant, not on the cost-effectiveness or availability of treatment technology of reductions required, to attain the applicable water quality standards. See Theme 4 response.
32-005	OxyChem cannot find an explanation for the different categories (1 and 2) assigned in Appendix 2 of the "Complete" PCB TMDL report dated September, 2003 available on the DRBC website. We do agree that sources with higher loadings of PCBs should receive higher priority for reductions during Phase 1 and subsequent phases for the TMDLs. OxyChem's apparent PCB loading is less than 2 mg/day as calculated by DRBC, which should put our facility in a low priority category for reductions, since we are not a major source. However, we are listed in category 1, whereas other much larger apparent sources in zone 5 are listed as category 2. It is certainly not obvious how these categories were derived from reading the TMDL report or reviewing the tables.	A narrative description and decision making flow charts for the potential groupings is contained in Appendix 3 of the TMDL report. The commenter is referred to Table 3-2 for the criteria used to determine those assignments.
32-006	OxyChem measured very small amount of PCBs in our discharge, far below treatable levels, and we believe the only reasonable source is rainfall onto the site and into our open top wastewater storage and processing tanks. If category 1 is high priority, and Oxychem is rated a high priority for reduction of PCB loadings, we cannot conceive of any way to accomplish reductions or establish meaningful BMPs. We believe EPA and DRBC have to develop some sort of de minimis discharge criteria that is attributed to unavoidable off-site sources, like rainfall, which will be controlled as part of a LA. For phase 1 of the TMDL , we would recommend focusing any BMP or reduction efforts on significant current loadings; the ones that make sense from a review of the mass of PCBs currently discharged. The explanation of "significant" point source dischargers is a good start in this direction.	Waste minimization plans and monitoring will need to be considered on a case by case basis. In some instances, removal of known or suspected sources of PCBs will result in reduced PCB loads over a longer time scale. Some facilities will likely identify many opportunities for load reduction while others will find fewer opportunities. However, a coordinated effort to find and remove PCBs from the estuary is still critical to overall success.
33T1-001	DNREC urges EPA to formally establish the TMDL by December 15, 2003.	Comment noted.

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Letter ID	Public Comment	Response
33T1-002	We urge continued focus so that a fine-tuned TMDL Stage II can be established by December 2005 and to include other zones in the Stage II TMDL.	Comment noted.
33T1-003	We encourage EPA to facilitate the development and adoption of a revised single criterion for PCBs that would apply throughout the Estuary. This criterion should be based upon estuary-specific information concerning bioaccumulation and fish consumption.	EPA's 2000 Methodology for Derivation of Human Health Criteria supports the use of local fish consumption values and field-derived bioaccumulation factors in development of criteria adopted in State water quality standards. Support is given to efforts to develop and adopt revised single criteria for PCBs and consistent fish advisories for PCBs that would apply throughout the estuary.
33T1-004	DNREC encourages closer coordination between water, waste and air management programs and personnel within the Estuary to more effectively deal with the problem of PCBs.	Comment noted.
33T2-005	At this time it is improper to use the term TMDL since this proposal does not meet the statutory and regulatory requirements or approval for a TMDL.	EPA respectfully disagrees. EPA finds that this TMDL meets all regulatory and statutory requirements.
33T2-006	Water quality modeling considering only penta PCBs is an over simplification that does not account for the varying physical and chemical properties of PCBs such as, solubility and volatilization rates of the individual congeners and homologs across the total PCB spectrum. Given the variability from environmental sampling and laboratory analyses, computer modeling and statistical extrapolations, including rounding issues and significant figures, how can EPA demonstrate with any scientific certainty that the proposed total PCB TMDL as derived from the penta PCB modeling will meet the water quality standards for achieving the Estuary's designated use as fishable waters?	EPA disagrees. See response to comment 23-003 and discussion in TMDL discussing this issue (including the report of the expert panel cited therein).
33T2-007	DRBC has identified significant nonpoint sources of stormwater discharges as a source of PCBs. However, DRBC has not identified other significant nonpoint sources such as CERCLA sites and RCRA hazardous waste sites, tributaries and sources of airborne PCBs that represent merely an order of magnitude of greater PCB loading than point sources.	EPA disagrees. EPA identified many specific nonpoint source sites. See Appendix 4. EPA notes that individual load allocations are not required by TMDL regulations. We disagree with the comment '… ignoring the significant nonpoint source contributions'. All possible loadings including all nonpoint source loadings were considered in these TMDL calculations. Further source identification effort will be performed in Stage 2 PCB TMDLs. (See 18-002)

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33T2-008	There must be assurance that the TMDL can be implemented. The TMDL process should result in allocations for the various sources that are reasonable, both technologically and politically, and that could be expected to be achieved when implemented. What assurances can EPA provide that the proposed Stage I TMDLs are reasonable and can be achieved when implemented?	EPA disagrees. EPA discusses at length in the TMDL report the reasonable assurance that this TMDL will be implemented appropriately. The WLAs and LAs are allocated in order to achieve the applicable WQS regardless of whether they can achieve those reductions immediately. EPA finds the allocations reasonable and equitable for the reasons set forth in the TMDL discussion how the allocations were established. See Theme 3 and 4 responses.
33T3-009	Issues I wish to raise are the waste load allocation process and the method that was used to establish base load allocation. We wonder what the function of the individually assigned WLA are given the components of the Stage I TMDL.	See Theme 4 response.
33T3-010	There is an indication in the TMDL that the water quality standard may be revised next year, which in itself would result in a need for new waste load allocations and load allocations.	Although DRBC has been in the process of revising its criteria for PCBs, the TMDL must be developed on the applicable water quality standards. Any future revisions to the TMDL (and WLAs and LAs) will incorporate the applicable criteria in effect at that time.
33T3-011	What is the purpose of the individually assigned waste load allocation on a discharger by discharger basis? What do those numbers mean? When you look at those numbers in relationship to the permitting requirements the numerical values serve no purpose at all.	See Theme 4 response. NPDES permitting regulations require any effluent limits to be consistent with the assumptions and requirements of the approved WLAs. EPA and the States believe that the approach to include development and implementation of PCB minimization plans are an appropriate step that may result in achievement of the individual WLA. NPDES permits must contain monitoring to ensure the effectiveness of the PCB minimization plans to ensure compliance with the applicable WLA.
33T3-012	Considering the WLAs will be replaced in Stage II, we propose that the WLA should be presented on a categorical basis as a lump sum number. There is authority both in EPA regulation and guidance and precedent for the notion that WLA can be presented in a categorical manner. Perhaps the TMDLs could be presented on a zone basis, the WLA accumulated on a zone by zone basis, so that the individual WLA would not be necessary.	See Theme 4 response.
33T3-013	Time available for this TMDL was approximately a year and a half. Typical model development of a PCB model in estuaries run five to ten years.	Comment noted.

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33T3-014	These models are mass balance models which compute the loadings imposed upon the model. First, there needs to be a complete quantitative estimate of all the loads entering the Estuary. There are some uncertainties in the loadings that are available. For example, some contaminated sites are missing completely. The data for the others is estimated and has not been verified. Nonpoint source loads are based on literature and estimates and there is no field verification to those loadings. Also there is a concern with field blanks, etc. An analysis of the above needs to be included in the estimates of loads.	See Theme 1 response.
33T3-015	The tributaries have been sampled only twice; one wet weather and one dry water sample. And clearly more sampling is needed	Contrary to the commenter's statement, more than two samples were collected for the major tributaries, such as the Schuylkill, to better represent its impact. EPA agrees that more sampling is better. EPA found that the available data was sufficient to establish these TMDLs. Additional monitoring is anticipated for any future TMDL revisions.
33T3-016	In checking the model we (myself and the expert panel from the PCB symposium) have found some interesting inconsistencies between the model calculations and the historical sediment data and the present sediment data. We don't know where the problem is, but we know there is an inconsistency here that needs to be understood and remedied. When we calculate from the 1950's to the present, we calculate the final distribution of PCBs from the sediments. That does not agree with the observed spatial distribution. This is another inconsistency that needs to be understood. The model computes PCB rates by first computing the balanceable anticarbon in the Estuary, since mostly the PCBs reside in the fluid of the organic carbon balance and move the estuarine system. Some of the inconsistencies found may be due to the problem with the organic carbon balance, so that has to be critically reviewed in light of these problems that have been uncovered.	We believe that it is not possible to confirm the existence of any trend in the PCB concentrations in surficial sediment due to high data variability. Thus, we disagree with the commenter's interpretation on the performance of the model. Comparison of Figures 5.5 and 5.10 in the model calibration report demonstrate that model output closely mirrors the shape of the hindcast trends selected. The selected hindcast trend may be incorrectly forcing a decreasing trend in simulated sediment and tissue concentrations by forcing a decreasing trend in loads. A reality check of the hindcast loading trend for recent data and an estimate of the uncertainty of the hindcast loading trend may be considered for Stage 2.
33T3-017	This model does not reproduce the Estuary morbidity maximum whether that is a problem or not needs to be investigated.	The simulated carbon normalized PCBs within turbidity maxima matched well with the observed data. The organic carbon model has been reviewed and judged scientifically credible and adequate by panel of experts.

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Letter ID	Public Comment	Response
33T3-018	The source distributions that are presented in the DRBC report are incomplete in the following sense: On page 37, Figure 2.1, the tabulations neglects absorption from the gaseous phase of PCBs, although there is wet and dry rainfall, wet deposition and dry deposition, transfer from the atmosphere to the Estuary from gases, from the PCBs not included. The downstream boundary conditions into the Atlantic Ocean are not considered. There are PCBs that are in the sediments presently which are contributing to the water column. The above three categories, gas phase absorption, downstream boundaries and sediments should be included in the tabulation.	Figure 2.1 depicts the external loads. Fluxes and tidal boundary loads are most appropriately computed within the model framework. As indicated by the commenter, gas phase air concentrations, downstream boundaries, and sediment concentrations are important sources of PCBs but are addressed in these TMDLs.
33T3-019	We calculate that it will take a number of decades for the Estuary to reach a good water quality simply due to the PCBs in the sediment presently. There is no doubt of the magnitude of the contribution of PCBs in the sediment and there is a very long response time for achieving the goal. Therefore even the most aggressive point source control strategy will not result in meaningful prognosis towards achieving the water quality criteria because the point source contribution is so small.	See Theme 2 response. We acknowledge that control of point sources alone will not achieve the TMDL, however with time and control of other sources, the TMDL is expected to be achieved.
33T3-020	The long term behavior of the model appears to be inconsistent with fish concentrations. The fish concentrations are remaining relatively constant while the water column concentration is decreasing, suggesting that the fish are responding not only to water column PCBs but also to sediment PCBs which are changing more slowly.	The model developed by DRBC was not designed to predict PCBs in fish tissue. Making judgment on the model performance by comparing non-simulated variable is not appropriate. Form the comparative plots results of PCB between water column and fish tissue, it is clear that the aforementioned uncertainty came from the wide range of distributions (both spatially and temporarily) of fish tissue data rather than the issue of the model. The water quality target for the TMDLs is PCB concentration in the water column. Modeling results were deemed credible since model predicts water column PCB concentrations accurately. We agree that if the water quality targets were changed from water column PCB to fish tissue PCB, then it make sense to pay even closer attention to the relationships of PCB between water column and fish.
33T3-021	There needs to be a model developed which accounts for the fish tissue PCB concentration directly, which accounts for both water column sources and sediment sources. In order to assure that WLA are properly achieved in fish tissue end points, which is the basis for the regulation is that we need a food chain model which accounts for these interactions.	We agree that if the water quality targets were changed from water column PCB to fish tissue PCB, then it make sense to pay even closer attention to the relationships of PCB between water column and fish.

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Letter ID	Public Comment	Response
33T4-022	You cannot find a stage approach contemplated at all by the Section 303(d) of the Clean Water Act nor in EPA's current regulations at 130.7. There is no mention of a staged approach in the consent degree. We believe the staged approach will only delay the achievement of water quality standards in the river.	See Theme 3 response and disussion of phased TMDLs in EPA's 1991 TMDL Guidance. EPA believes needed reductions in PCBs in the Delaware River will be taking place as expeditiously as possible.
33T4-023	The regulations state that the TMDL is to have individual numeric waste load allocations for each point source. Therefore, there should be 142 individual WLAs in this TMDL.	The TMDL contains individual, numeric WLAs for each of the 142 point sources.
33T4-024	Nonpoint source controls should be identified in the TMDL so that they may begin to be implemented. The TMDL should have a description of the expected reductions from those controls. Currently, I do not see identified controls or expected load reductions in this TMDL.	Current EPA regulations do not require that TMDLs have specific implementation plans. Much coordinated effort between EPA, DRBC and the States has gone into development of an implementation strategy that will achieve reductions of PCB loads. In April 2003 EPA, DRBC, and the States prepared a plan entitled "Reducing PCB Loads to the Delaware Estuary," which is also included in Appendix 1 of the TMDL report. This plan includes comprehensive strategies to reduce PCB loads from air, tributaries, contaminated sites, nonpoint stormwater runoff, and contaminated sediments. Additionally, the DRBC has established the Implementation Advisory Committee ("IAC"), which is tasked to develop creative and cost-effective strategies for reducing loadings of PCBs and achieving the TMDLs for PCBs in the Delaware Estuary. The IAC will address all sources of PCBs including nonpoint sources. The TMDL does identify the reductions necessary to attain water quality standards and discusses at length the reasonable assurance that these TMDLs can be achieved.
33T4-025	There is currently no time frame outlined in the TMDL for achieving water quality standards. There is no commitment to reopen permits. There is no commitment to achieve water quality standards within a reasonable amount of time.	See Theme 2 and 5 responses.

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Letter ID	Public Comment	Response
33T4-026	There is no mention of the impact on endangered and threatened species in this TMDL.	TMDLs drive substantial improvement in water quality as they establish a target for the waterbody to meet water quality standards. This TMDL is based on the applicable water quality standards, which is to protect for human health uses. In accordance with the requirements of applicable TMDL Consent Decrees, EPA has coordinated establishment of the TMDL with the Fish and Wildlife Service field offices and with National Marine Fishery Service (NMFS). Further, EPA has consulted with NMFS on NPDES regulations adopted by both Delaware and Pennsylvania. As part of this process, EPA agreed to provide NMFS notification of permit reissuances in the Delaware River watershed.
33T5-027	There should be standard that can be feasibly be attained in developing a mix of measures as to the various sources that will achieve water quality standards.	See Theme 2 response.
33T5-028	A lot of emphasis is put on point sources and they are a minor contributor to the Estuary.	See Theme 4 response.
33T5-029	How do you do a TMDL if it is not clear that the standard can be achieved? EPA has two choices in doing the TMDL; one, if EPA can identify a series of measures that are feasible for various sources that will get us to the goal. Two, if we know that the mix and measures total are feasible and will get us where we want to go. If the Agency cannot identify feasible means to get to the standard, then you can't really do a TMDL because TMDL has to project attainment. If there is no feasible was to attain the standard , then under the Clean Water Act, the standard is where it needs to be reexamined to make sure we have one that can be reasonably attained. Currently, EPA has not shown that this TMDL can be reasonable attained.	See Theme 2 response.

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Letter ID	Public Comment	Response
33T6-030	The regulation that has been proposed is not designed to insure a timely reduction of PCBs in the Estuary. The staged approach is not going to effectively secure reduction of PCBs in a timely manner, which violates the consent decree.	EPA disagrees. EPA has worked hard with DRBC and the States to develop an implementation strategy that will achieve significant reductions in the near future. EPA agrees that there are insufficient resources presently identified to achieve these reductions from all sources within the next ten years and probably many more. The TMDL is in essence a plan and framework by which to orchestrate that reduction. The plan provides for a logical and effective approach for reducing PCBs to the Estuary. Additional monitoring and modeling will be conducted to confirm the effectiveness, or to provide sufficient data and information, to modify the TMDL if necessary. These TMDLs meet all requirements of the Consent Decree. See also response to comment 33T4-024.
33T6-031	It does not include quantified reductions of PCBs and it does not address nonpoint sources of PCBs. This proposal is not requiring an immediate quantifier for reductions.	EPA disagrees. The TMDL assigns quantifiable allocations of PCBs to various sources, including nonpoint sources. EPA believes needed reductions in PCBs in the Delaware River will be taking place as expeditiously as possible.
33T6-032	The TMDL does not achieve its own stated goals. For example, Stage I is focused on monitoring requirements to further inform creation of Stage II. You are waiting and allowing the permits to expire on their own accord. There is no reopener provision. A large portion of the permits will not expire until 2005, which leaves a large amount of time before any reductions will begin to take place. Monitoring data between now and 2005 will not be sufficient to create and effective Stage II.	See Theme 3 response, to comment 04-006.
33T6-033	A major portion of Stage I is that the point sources themselves are supposed to come up with their reduction strategies for PCBs. That seems like a dangerous situation and I question the validity of their information in reducing PCBs.	Same as comment 04-005. See the response to that comment.
33T6-034	The PCB minimization plans are not required nor intended to secure known quantified reductions of PCBs. The plans very clearly are supposed to be using and focusing on the cost of the strategies included in the plans as opposed to the effectiveness of the strategies for reducing PCBs in our river and environment. It is an inappropriate goal to place cost over effectiveness.	The States will require, through NPDES permits, point sources to monitor for PCB concentrations using Method 1668A. NPDES permits must contain monitoring to ensure the effectiveness of the PCB minimization plans to ensure compliance with the applicable WLA. See response to comment 24-002.

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Letter ID	Public Comment	Response
33T6-035	These plans that come out of this TMDL process may never be fully implemented and that's very specifically stated. So we might end up with plans that don't even get fully implemented and take effect. The proposal on the table does not include any enforceable mechanism to ensure that Stage II will ever happen. There are no financial commitments. There is no legal commitment. There are no ramifications if EPA decides to back off of Stage II and never do it. There is no assurance that Stage II will ever happen.	See Theme 5 response. While EPA supports the development and establishment of a Stage 2 TMDL as a refinement of Stage 1 efforts, EPA finds that this Stage 1 TMDL meets all regulatory and statutory requirements. EPA continues to believe that the TMDL process is iterative and expects revisions as better monitoring data and analysis becomes available. It is EPA's intention that the Stage 1 TMDL will be established and effective until and unless replaced or amended. The comment regarding future TMDL establishment plans does not undermine the integrity of the Stage 1 TMDL.
33T6-036	Neither myself or my organization believes that this TMDL is effective or appropriate in compliance with the law or in compliance with our settlement agreement.	See response to comment 4-024.
33T7-037	We are concerned about the specific management techniques and the emphasis of cost effectiveness as opposed to the emphasis on what is most effective in reducing inputs into the Estuary.	EPA, the DRBC and the States believe that, as a first step, implementation of pollutant minimization plans are the most effective means in reducing discharges of PCBs to the Delaware River. While the Clean Water Act states that any requirement imposed on dischargers must take cost effectiveness into consideration, NPDES permits must contain monitoring to ensure the effectiveness of the PCB minimization plans to ensure compliance with the applicable WLA. See response to comment 24-002.
33T7-038	We are concerned about the lack of aggressiveness, the lack of utilizing the regulatory authorities that are available to the State to gain reductions in PCBs where they are available now and not to wait for further signs.	EPA, the DRBC and the States believe that, as a first step, implementation of pollutant minimization plans are the most effective means in reducing discharges of PCBs to the Delaware River.
33T7-039	Although it is said that the TMDL is being asserted to be full and complete, we believe that it won't bring the Estuary under compliance of the water quality standards.	The TMDL establishes the water quality targets to be achieved and alone will not bring the estuary into compliance with water quality standards. Implementation of the TMDL will require development of a long-term, comprehensive strategy to achieve the necessary reductions.
33T7-040	We are deeply concerned about the lack of commitment and assurance of funding to insure that it will happen.	EPA, DRBC and the States are proceeding with Stage 2 efforts.
33T8-041	I would like to propose that beginning in January we have a second technical scientific symposium to put together a concrete plan of action. We need to know exactly what we need to do to further understand loadings and quantify them.	Comment noted.