General

- A series of figures providing information on sampling locations and other spatial aspects of the multiple field studies was added to the report.
- Additional detail on all of the studies used to support the ERA was provided.
- The discussion of the COC screening rationale was expanded.

Appendix D and Section 3 – Benthic Invertebrates

- The discussion of sampling methods and sampling locations was expanded.
- All of the detail associated with the statistical methods used was included as new Attachments.
- A probabilistic representation of risk using cumulative probability curves was incorporated into the risk characterization.
- An analysis of specific taxa using the species sensitivity distribution (SSD) methodology was included. The SSD endpoint was added as a separate line of evidence in the formal WOE.
- Descriptions of the dragonfly study, mussel study, tree swallow stomach contents evaluation, and the crayfish study were added.
- MATCs were recalculated based on the "rules" for derivation described in Responsiveness Summary General Issue 6 (e.g., separation of acute and chronic thresholds, elimination of redundant endpoints, use of synoptic data, screening of endpoints for dose-response).
- Revised risk definitions, consistent with those used for the wildlife endpoint assessments, were developed and used for aquatic endpoints.
- Additional detail of the rationale for weighting of lines of evidence, and for assigning magnitude of harm was provided. Attribute weightings and endpoint weightings were revised to be insure consistency between endpoints.
- The discussion regarding concordance of major lines of evidence was expanded.
- The following additional statistical analyses requested by the Peer Review Panel were included:
    - diversity measures (e.g., Simpson's Index),
    - multiple regression results (both EPA and GE), and
    - analyses of specific taxa.

- Additional information was provided on the linkages between exposure data at toxicity stations versus benthic community stations, and between tissue data and sediment data.
- Endpoint and receptor definitions were clarified.
- A discussion on substrate conditions and linkage to the statistical methods applied was added.
- The distinction between "most synoptic" and "median" exposure data sets was clarified and the "most synoptic" data were used as the primary analysis.
- Additional information on small-scale variability in sediment PCB concentrations was provided and used for MATC derivations (as requested by most Peer Reviewers).
- Different types of hazard quotients (HQs) (e.g., site-specific versus screening HQs) were identified and information on variability in the numerator and/or denominator was added.

Appendix E, Section 4 - Amphibians

- Additional discussion of the timing of the leopard frog collection activities was provided.
- Use of the term "reference frog" and "control frog" was clarified.
- The discussion of the rationale and use of statistical tests was expanded.
- The discussion of the congener analyses of frog tissue samples was expanded.
- An expanded discussion on the derivation of dose-response relationships for wood frogs and the development of MATCs for sediment and tissue was added.
- A description of the MATC decision criteria was added and used in the development of the MATC.
- The mechanisms of action for tPCBs, dioxins and furans were described and related to the effects observed in the studies used in the risk assessment.
- The rationale for the use/non-use of each of the amphibian endpoints considered in the ERA was expanded.
- Additional detail on the development of the HQs was provided.
- Additional details pertaining to the WOE procedures and the rationale for each assignment of value was provided
- Additional sensitivity analyses for the wood frog population modeling were performed and incorporated into the results. All wood frog studies (by both EPA

and GE) were incorporated into the report. A discussion of how each study was used and a rationale for use or non-use of the results of each study was added.

- The discussion on the risks to amphibians from tPCBs in areas downstream of the Woods Pond dam was expanded.
- Additional detail on the sources and uncertainty was provided.

Appendix F, Section 5 - Fish

- A reference was added to the series of figures providing information on sampling locations and other spatial aspects of the multiple field studies.
- A reference to the congener evaluation (Attachment C.7) was added.
- A reference to the tables of reconstituted PCB whole body fish concentrations was added.
- The spatial representativeness of tissue concentrations used in site-specific studies was evaluated using cumulative probability plots with effects studies marked on the curve.
- Statistical methods that were used have been listed in table format, showing assumptions, methods, etc.
- The statistical significance, power and effect size was included for all statistical tests, where possible.
- An additional data evaluation using cumulative probability plots versus new tissue thresholds was prepared and added.
- Additional discussion was added to the Problem Formulation and Risk Characterization sections to further clarify the intent of the endpoints, describe how population and individual endpoints were combined in the overall evaluation.
- Additional information was provided on incidence of fish disease and deformity. DELT and glob eye data from EPA sampling and the evaluation by USFWS on histopathology and viral analyses of goldfish were summarized and added.
- The rationale for screening pesticides, PAH, and mercury out of the risk assessment was expanded. Information regarding stressor identification guidance was added and additional detail on PAH and mercury screening was incorporated.
- Tissue pesticide data from USGS samples and screening against tissue effects thresholds was incorporated.
- The discussion of assumptions regarding PAH metabolism in fish was expanded.
- Additional information on the Phase I bluegill toxicity study for Phase I, including specifically why the study was terminated, was added.

- An explanation of the inability of the Phase I/II study results to separate acute from chronic effects was provided.
- A discussion of the value of retaining different trials due to use of different batches of eggs was added.
- Trials that showed no dose-response or acceptable dose-response were identified and included in the discussion of study results. A discussion of variability in dose-response expected for this type of experiment was added.
- A discussion of the potential use of the SSD approach was added.
- References to "no risk" or "negligible risk", or "acceptable" or "unacceptable", or "catastrophic" were removed.
- The term "ecologically significant" was removed, or when retained was better defined.
- Additional explanation of the HQs was provided (especially for different types). Additional detail was also provided on variability in exposure and/or effect.
- Criteria to classify risk consistent with the wildlife endpoints (EC_{20} and EC_{50}, if possible) was developed and added, and the risk terminology was revised to be consistent with new definitions.
- Cumulative probability plots for concentrations versus thresholds (for PCB, TEQ and PAH), were added.
- Additional explanation of the weighting assignments was provided.
- A discussion of concordance of lines of evidence was added.
- A discussion of why different lines of evidence may exhibit different findings but still be consistent with the overall risk determination was discussed.
- Additional information was provided on the field studies and the rationale for weighting assignments.
- A discussion was added concerning dose-response and endpoints showing effects versus those showing no effects.
- A discussion of biomarkers, such as endocrine and histological endpoints, was added.
- The discussion of field study rationale, with particular reference to the difference between trout and warmwater species, interstrain differences, consideration of uncertainty factors) was expanded.
- A discussion of the connection between lipid and PCB content was added, including discussion of the seasonality of lipid content in fish, its effect on PCB and TEQ tissue concentrations, and the effect on risk.
- A discussion of the lipid data was added. A discussion of filet conversion and lipid variability was added.

- A discussion of population demographics from the GE R2 study (age structure and CPUE of YOY) was added.
- Population effects and uncertainties were integrated into the risk conclusions.
- A discussion of the uncertainty associated with largemouth bass Phase II experiment and quantification of 15-d post swim-up effects was added.
- A discussion of the limitations of interpreting data on individual response types, and the approach of broad interpretation combining all negative responses was added.
- A discussion of the increased uncertainty in downstream risk estimates was added.
- The endocrine and histology endpoints from the Phase I study and their use in risk characterization were discussed in more detail.
- The Phase II study raw data were evaluated for any evidence of consistent differences between triolein and uninjected controls, and a discussion of this evaluation was added.
- A discussion of the potential for recruitment of fish from uncontaminated areas of the PSA was added.
- A discussion of the timing of swim bladder abnormalities and their ecological relevance was added.
- A discussion of the number of spawns in the Phase I study, and a discussion of concentration-response in Phase I endpoints, were added.
- A discussion of the use limitations of endpoints based on surviving portion of the population was added.
- MATCs were recalculated based on the “rules” for derivation described in Responsiveness Summary General Issue 6 (e.g., separation of acute and chronic thresholds, elimination of redundant endpoints, use of synoptic data, and screening of endpoints for dose-response).
- A discussion of multiple effect sizes and a rationale for choice of adopted effect sizes for MATC derivation was provided.
- A reference to the application of Appendix C.2 to replacement assumptions was added.
- An additional MATC (TEQ and tPCB) associated with larger effect sizes was added.
- An expanded discussion of risks for PAHs and other COPCs was presented in the uncertainty section.
- A discussion of the use of median concentrations in HQ analysis, and interactive effects of multiple toxins in mixture was added.

Appendix G, Section 7 – Insectivorous Birds

- An additional representative species (wood duck) was added to the risk assessment for insectivorous birds.
- The justification for the representative species selected was expanded.
- The discussion of why organochlorine pesticides were screened out was clarified.
- Cumulative frequency plots of COCs in soil/sediment in the PSA for comparison to Locations 13, 14, 15 and for three tree swallow nest box sites in the PSA were added.
- A review of the tree swallow bioenergetics model described in Nichols et al. 1995 was added.
- A discussion of EROD and other enzyme activity responses observed in tree swallows in the field study was added.
- The order of presentation in the document was revised such that the discussions and risk analyses for tree swallow, American robin, and wood duck are now presented separately.
- References to the Taconic Valley Trucking site as a reference site were removed.
- The discussion of attribute weightings for the lines of evidence considered in the weight of evidence assessment was expanded.
- The discussion of sources of uncertainty and their potential influence on risk estimates was expanded.
- A discussion of the power analyses conducted as part of the American robin field study (Henning 2002) was added.
- Details of statistical analyses conducted in support of the GE American robin field study (Henning 2002) and tree swallow field study (Custer 2002) were added in the form of tables in an attachment to Appendix G.1.

Appendix H, Section 8 – Piscivorous Birds

- The justification for the representative species selected was expanded.
- The discussion of why organochlorine pesticides were screened out was clarified.
- The order of presentation in the document was revised such that the discussions and risk analyses for the belted kingfisher and osprey are now presented separately.
- The discussion of the assessment of the studies that were used in support of the ERA was expanded.
- The range of fish lengths preferred by each species was divided into size classes to ensure that the 95% UCL derived for each COC for all fish in the size ranges consumed by belted kingfishers and osprey were appropriate for use in the exposure analysis. The 95% UCLs for each size class were compared and presented. The exposure and risk analyses were re-assessed based on the revised range of fish size classes.
- The discussion of the GE belted kingfisher study was expanded.
- The discussion of attribute weightings for lines of evidence for belted kingfisher and osprey, respectively, that were considered in the weight of evidence assessment was expanded
- The discussion of sources of uncertainty and their potential influence on risk estimates was expanded.
- The description of the weight-of-evidence assessment was revised to improve clarity and transparency.
- A qualitative assessment for risk to insectivorous birds downstream of Woods Pond was conducted by comparing fish concentrations below Woods Pond to those in the PSA; the results were added to the report.
- Details of statistical analyses conducted in support of the belted kingfisher assessment were added in the form of tables in an attachment to Appendix H.

Appendix I, Section 9 – Piscivorous Mammals

- The justification for the representative species selected was expanded.
- The discussion of why organochlorine pesticides were screened out was clarified.
- The order of presentation in the document was revised such that the discussions and risk analyses for the mink and river otter are now presented separately.
- The discussion on the assessment of the studies that were used in support of the ERA was expanded.
- The range of fish lengths preferred by each species was divided into size classes to ensure that the 95% UCL derived for each COC for all fish in the size ranges consumed by mink and river otters were appropriate for use in the exposure analysis. The 95% UCLs for each size class were compared and presented.
- The discussion of feeding study methodology, particularly details of the statistical analyses conducted by Bursian et al. (2003), was expanded.
- Regression analyses were conducted to determine the relationship between mink kit survival and concentrations of tPCBs and TEQ in the feeding study diets; the results were added to the report.
- A discussion was added explaining why kits that died before 6 weeks of age in the mink feeding study were not necropsied.
- The discussion of the significance of jaw lesion results observed in the mink feeding study was revised.
- The discussion of feeding study results and how they compare to mink feeding study results conducted for other sites was expanded.
- The discussion of appropriate mink habitat in reference sites in the EPA field survey report was expanded.
- The discussion of attribute weightings for three lines of evidence considered in the weight of evidence assessment was expanded.
- The discussion of sources of uncertainty and their potential influence on risk estimates was expanded.
- The decision rules for calculating MATCs were implemented and the MATC for mink and river otter exposed to tPCBs in the diet was revised.
- The revised MATC was used to prepare new downstream risk maps for these species. The discussion in the report was also revised accordingly.
- Details of statistical analyses conducted in support of the mink and river otter assessments were added in the form of tables in an attachment to Appendix I.

Appendix J, Section 10 – Omnivorous Mammals

- The justification for the representative species selected was expanded.
- The discussion of why organochlorine pesticides were screened out was clarified.
- The order of presentation in the document was revised such that the discussions and risk analyses for the red fox and short-tailed shrew are now presented separately.
- The discussion of the Boonstra (2002) short-tailed shrew demographic study was expanded.
- Additional discussion comparing the Boonstra (2002) study with the U.S. EPA re-analysis, including Boonstra's re-analysis of the U.S. EPA re-analysis was provided.
- The discussion of the assessment of the studies that were used in support of the ERA was expanded.
- A figure showing the PCB soil concentrations at the three soil invertebrate sampling locations (Locations 13, 14, and 15) in comparison to soil concentrations in the remainder of the PSA was added and discussed.
- The discussion of the rationale for selection of surrogate species for toxicity to red fox and short-tailed shrew was expanded.
- The discussion of attribute weightings for the lines of evidence for red fox and short-tailed shrew, respectively, considered in the weight of evidence assessment was expanded.
- The description of the weight-of-evidence assessment was revised to improve clarity and transparency.
- The discussion of sources of uncertainty and their potential influence on risk estimates was expanded.
- An MATC for survival of shrew was derived by conducting a regression analysis to determine the relationship between shrew survival and concentrations of tPCBs in soil considering the decision rules for calculating an MATC.
- A qualitative assessment for risks to shrew downstream of Woods Pond was conducted by comparing soil concentrations to shrew MATC. A discussion of the methodology and results was added to the report.
- Details of statistical analyses conducted in support of the red fox and short-tailed shrew assessments were added in the form of tables in an attachment to Appendix J.

Appendix K, Section 11 – Threatened & Endangered Species

- The discussion of the assessment of the studies that were used in support of the ERA was expanded.
- The range of fish lengths preferred by bald eagles was divided into size classes to ensure that the 95% UCL derived for each COC for all fish in the size ranges consumed by bald eagles were appropriate for use in the exposure analysis. The 95% UCLs for each size class were compared and presented.
- Determination of risk to bald eagles and American bitterns was based on the likelihood of exceeding effects levels for eggs for tPCB and TEQ concentrations.
- The discussion of small-footed myotis feeding preferences and similarities with tree swallow foraging preferences was expanded.
- The use of T&E field surveys in the risk characterization was clarified.
- The discussion of sources of uncertainty and their potential influence on risk estimates was expanded.

Section 6 - Wildlife

- The discussion of why organochlorine pesticides were screened out was clarified.
- The addition of wood duck as a representative species for insectivorous birds was noted.

Section 12 – Risk Summary

- The results of the wood duck risk assessment were added to the risk summary for insectivorous birds.
- The risk summaries for all endpoints were modified, as necessary, to reflect the changes, if any, specified above by endpoint.
- Qualitative risk assessment results for other waterfowl species were added.
- The summary hazard quotient figures and accompanying text for wildlife were modified to reflect changes in analyses, if necessary, for all endpoints.