



New Jersey Department of Environmental Protection
Division of Water Monitoring and Standards
Bureau of Environmental Analysis, Restoration and Standards



2012 New Jersey Integrated Report

Appendix B: Agency Responses to Public Comments on the Draft 2012 303(d) List of Water Quality Limited Waters (“303(d) List”) July 2014

Commenters:

1. Seth Ausubel, Acting Chief, Watershed Management Branch, Clean Water Division, USEPA Region 2 (USEPA)
2. L. Stanton Hales, Jr., Ph.D., Director, Barnegat Bay Partnership (BBP)
3. Miyoko Sakashita, Center for Biological Diversity (CBD)
4. Chris Len, Staff Attorney, Hackensack Riverkeeper and NY/NJ Baykeeper (Baykeeper)
5. J. Bart Ruiter, DuPont Engineering Technology
6. William J. Schulte, Esq., Eastern Environmental Law Center (EELC), on behalf of the Pinelands Preservation Alliance, Save Barnegat Bay, Clean Ocean Action, American Littoral Society, Environment New Jersey, and New Jersey Environmental Federation
7. Heather Saffert, Ph.D., Staff Scientist, Clean Ocean Action (COA)
8. Bill Wolfe, Director, New Jersey Chapter Public Employees for Environmental Responsibility (NJ PEER)
9. Jeff Tittel, Director, New Jersey Chapter of the Sierra Club, NJ Chapter of the Sierra Club (NJSC)
10. Britta Forsberg Wenzel, Executive Director, Save Barnegat Bay (SBB)

General Comments

1. **Comment:** It is encouraging that DEP is using application of Geographic Information Systems (GIS) tools and spatial information overlays to aid in making comprehensive assessments and identifying sources. DEP needs to make the water quality data accessible with these tools. COA understands that efforts are underway to improve data accessibility and looks forward to this prospect of being able to review the lists with more data and more understandable presentation formats (e.g., maps, GIS tools) in the future. (COA)
2. **Comment:** The 303(d) list should not be approved until it is improved and corrected. More efforts are needed to move the Hudson Estuary TMDLs forward, assess nutrient impairments in marine waters, notably in Barnegat Bay, and to reduce nonpoint sources of pollution statewide. Data availability failures, erroneous delistings, and other oversights should be remedied in the final lists developed by the DEP. (COA)

3. **Comment:** The NJDEP should be more consistent in its use of data in its decision making, specifically in its decision to list or de-list waterbodies as impaired. (BBP)
4. **Comment:** The public comment period for the draft 2012 303(d) List was insufficient. Given the short timeframe on these comments, and the technical nature of the required response, there is not much our organizations can do to respond with helpful suggestions for improvements. We cannot reasonably cross-reference your data against other available data to determine whether you should have listed various segments for a pollutant. The listings should be presented in a map format. (Baykeeper)

Response to Comments 1 through 4: The Department strives to be consistent in its use of data for water quality assessment purposes and has articulated its decision-making process in the [2012 Methods Document](#). All readily available data that met the Department’s data requirements (as specified in the 2012 Methods Document) were considered in assessing water quality for the 2012 Integrated Water Quality Monitoring and Assessment Report (Integrated Report). The Department recognizes that GIS coverages might make the review of the water quality assessments easier but these coverages are not generated until after EPA approves the final 303(d) list. To address concerns raised by the commenters, the Department has modified the 303(d) list to identify the monitoring stations that supported placing the Assessment Unit/pollutant combination on the 303(d) List. Interested persons can use the final 303(d) List to identify the listing station and then use the Water Quality Data Portal (available on the National Water Monitoring Council’s Web site at <http://www.waterqualitydata.us/>) to review the monitoring results. In the future, the listing stations will be included with the draft 303(d) list, which should make it easier to review during the public comment period.

In response to the comments on the draft 2012 303(d) List, the Department conducted an in-depth review of all readily available data, along with the methods and assessment decisions used to develop the draft List. In doing so, the Department re-evaluated the Quality Assurance Program Plans to confirm that data was collected using valid scientific and analytic methods. The Department also corrected errors made in the draft 2012 303(d) List, which resulted in additional new listings, new delistings and decisions to return proposed delistings to the 303(d) list. The delisting reason “Applicable water quality standards attained – original basis for listing incorrect” was used if the data did not support the original listing or the listing stations were not hydrologically connected to or representative of the subwatershed and data shows that the criteria are met. Where there was no available data to support the original listing or to assess current water quality conditions, the delisting reason used was “Data and/or information lacking to determine water quality status, original basis for listing incorrect”. If the AU/pollutant was proposed to be added to the 303(d) list for the first time in 2012 and that listing was determined to be an error, the incorrect listing was simply removed. In addition, the Department reviewed approved TMDLs and delisted or removed any AU/pollutant combinations covered by an existing TMDL. All delistings for good cause are explained in the revised “Justification for Delisted Waters”. New listings were also added to the final 2012 303(d) List as a result of this process. In addition to changes made in response to comments, the Department initiated the following additional changes:

- The Department determined that the multiple listings for DDT and its metabolites (DDD and DDE) throughout the State are actually triplicate listings for data showing concentrations of DDT

in fish tissue that exceeded the acceptable threshold for fish consumption. All such listings were replaced with “DDT in fish tissue”.

- The Atlantic Ocean (20 AUs) was incorrectly listed in 2006 for various pollutants based on fish tissue data collected from migratory fish or generic statewide fish consumption advisories. The U.S. Food and Drug Administration (USFDA) promulgates national guidelines for the consumption of fish and fishery products by issuing action limits. The primary purpose of these limits is to establish the point at or above which the administration will take legal action to remove products from the consumer market because they are unsafe for consumption. New Jersey’s fish consumption advisories are developed using USEPA’s human health risk assessment methodology. This methodology recommends frequency of consumption limits rather than setting a single “do not eat” level. Thus, consumption advisories are often more stringent than USFDA action limits.

The Department’s fish consumption advisories were developed for fish targeted by recreational anglers, based on fish tissue samples collected from ocean waters off New Jersey’s coastline. Due to the migratory nature of the target species, fish were collected up to 12 miles off shore. USEPA’s 303(d) listing guidance indicate that a water segment is impaired by a pollutant and should be included on the State’s 303(d) list if there is a fish consumption advisory in effect and the advisory is based on fish tissue data. USEPA’s listing guidance also indicate that where tissue contamination triggers an advisory based on FDA action levels, the advisory is an indication that Section 101(a) “fishable” uses are not attained, and therefore, these segments should be included on the 303(d) list.

In 2006, the Department agreed to list the ocean waters (20 Assessment Units) because New Jersey had issued a statewide fish consumption advisory for marine waters based on fish tissue data from fish collected in the Atlantic Ocean. Many of the fish were collected in federal waters. Fish consumption advisories have been issued by the coastal states to advise recreational anglers of the risk of consuming fish, particularly those that are migratory and caught in the Atlantic Ocean. While the concentrations of PCBs in fish tissue exceed the threshold in the Methods Document, it is unclear where the fish became contaminated due to the migratory nature of these marine fishes. Furthermore, since the levels do not exceed the USFDA benchmarks, these advisories are advisory and do not indicate that the 101(a) “fishable” use is not attained.

In addition to the statewide marine advisories, New Jersey also issued waterbody- and species-specific consumption advisories for the summer flounder in the Atlantic Ocean from Sandy Hook to Sea Bright, and for weakfish in the Atlantic Ocean from Sea Isle City to Cape May. The fish tissue samples that formed the basis of these advisories were obtained from fish collected up to 12 miles off the coast (i.e., from federal waters). In reviewing the tissue data, it was determined that the levels of DDx and mercury meet the tissue thresholds in the Assessment Methods Document. Therefore, DDx and mercury were removed rather than delisted. That same data demonstrates that the levels of PCBs exceed the tissue thresholds. However, no information is available to indicate that the levels of PCBs in sediment in the near shore ocean waters or in the water column exceed applicable WQS. However, the Department did not propose to delist PCBs in fish tissue in the following AUs as part of the draft 2012 Integrated List. Therefore, to afford the public an opportunity to review and comment on this action, the Fish Consumption Use will remain Not

Supporting and PCBs in fish tissue will remain on the 2012 303(d) List for these AUs. The Department will propose delisting PCBs in fish tissue in these AUs when the draft 2014 303(d) List is proposed. This action is consistent with the fish consumption use assessment procedures and outcomes for other states along the Atlantic seaboard. A table of these delisted AU/pollutant combinations is provided in Section IX.B.4 of the revised “Justification for Delisted Waters”, which is available at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

- Cyanide was carried over to several Passaic River AUs from the original 304(L) list generated in the 1980’s based upon modeling assumptions. New cyanide data indicated that the levels were below detectable levels. These AU/pollutant combinations are now being delisted because “WQS attained; according to new assessment methods” (see Section II.B of the revised “Justification for Delisted Waters”).
- Chloride in several AUs was incorrectly added to the draft 2012 303(d) List for exceedances that were determined to be excursions of the applicable WQS due to transient events. These AU/pollutant combinations were removed but were not delisted because they were not on the 2010 303(d) List. Documentation of these transient events was moved from the revised “Justification for Delisted Waters” to a new document entitled: “Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters”, which is published on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.
- Ammonia was listed in several AUs prior to 2010 based on an incorrect application of the chronic criterion, which is expressed as a 30-day average. These AUs are now being delisted because the applicable WQS are attained; the original basis for listing was incorrect. A table of these delisted AU/pollutant combinations is provided in Section VI.A. of the revised “Justification for Delisted Waters”.
- All TDS and TSS listings were reviewed to confirm the stream classification and applicable designated use and water quality criterion associated with the listing station. Total Dissolved Solids (TDS) is used to assess the Public and Agricultural Water Supply Uses. Total Suspended Solids (TSS) is used to assess Industrial Water Supply and Aquatic Life Uses. The numeric criteria for these uses apply only to FW2 waters and were removed from AUs classified as SE waters, along with any associated pollutants (these are not delistings since the uses do not apply). Any AUs where TSS or TDS were proposed for delisting because the station was located in tidal freshwaters were returned to the 303(d) List.

Substantive changes made to the draft documents posted on July 2, 2012 are explained in the Response to Comments, the revised “Justification for Delisted Waters”, or the “Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters” documents. All of these documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

Assessment Methods and Data

5. **Comment:** Are any waters being delisted for phosphorus because the water demonstrated that the narrative nutrient criterion was met? (USEPA)

Response: No. Insufficient data was available for the 2012 Integrated Report to apply the nutrient impact assessment method, which is used by the Department to implement the narrative nutrient criteria.

6. **Comment:** Did the Department use best professional judgment to determine that the weight of evidence demonstrated support or non-support of the designated use? (USEPA)

Response: Yes. The Department employed Best Professional Judgment in accordance with the 2012 Methods Document. Documentation is provided in the “Justification for Delisted Waters” for AUs that were delisted, and in the Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters” for AUs that were not placed on the 2012 303(d) list. These documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

7. **Comment:** Was there an instance when the grab sample data and the continuous monitoring data were contradictory and the Department decided to give more weight to the continuous monitoring data? (USEPA)

Response: Yes. Documentation is provided in the revised “Justification for Delisted Waters” for AUs that were delisted, and in the Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters” for AUs that were not placed on the 2012 303(d) list. These documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

8. **Comment:** Was there an instance when the data set was very large and the Department used their best professional judgment to determine if the data represented non-support of the designated use? (USEPA)

Response: Yes. Documentation is provided in the revised “Justification for Delisted Waters” for AUs that were delisted, and in the Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters” for AUs that were not placed on the 2012 303(d) list. These documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

9. **Comment:** Did the Department consider a dataset insufficient due to censored values exceeding 50 percent of the data? (USEPA)

Response: Yes. Datasets considered to be insufficient to determine if criteria are exceeded are identified in Section II of the document entitled, “Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters”, which is posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm. In addition, Arsenic in NJ02030105020100-01 Raritan R SB (Three Bridges-Prescott Bk) was delisted

because all readily available data were below the detection limit (i.e., censored data); thus, there was insufficient information to support this listing decision (see Section VI.D.5 of the revised “Justification for Delisted Waters”). This is consistent with the Department’s method for computations using censored data, as explained in Section 4.1 of the 2012 Methods Document.

10. Comment: Are there any excursions that the Department determined were not exceedances of the SWQS due to transient events? (USEPA)

Response: Yes. Documentation of excursions of the applicable SWQS that were attributed to transient events is provided in the revised “Justification for Delisted Waters” for AUs that were delisted, and in the “Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters” for AUs that were not placed on the 2012 303(d) list. These documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

11. Comment: Are there any excursions that the Department determined were not exceedances of the SWQS due to (below) design flow conditions? (USEPA)

Response: No.

12. Comment: Did the Department use data from an adjacent monitoring station to determine delisting of impaired adjacent Assessment Unit? If so, can you provide the de-listing justification? (USEPA)

Response: Yes. Documentation is provided in the final 2012 303(d) List for AUs that were listed, in the revised “Justification for Delisted Waters” for AUs that were delisted, and in the “Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters”, for AUs that were not listed on the 2012 303(d) list. All of these documents are posted on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm. This documentation identifies where AUs were correctly listed or delisted based on data from monitoring station(s) in an adjacent AU. This document also identifies AU/pollutant combinations that were incorrectly listed based on monitoring stations from adjacent AUs that were subsequently determined to not be hydrologically connected or representative of overall water quality to the adjacent AU (see revised “Justification for Delisted Waters”, Section VI).

13. Comment: Was there sufficient information to determine any waters are threatened and the Department listed as impaired due to the trend assessments? (USEPA)

Response: No. Trends were available only in a few locations and those did not demonstrate declining water quality that would future use support.

14. Comment: Please provide the data that was received during the data solicitation period and justification for data received that the Department did not use. (USEPA)

Response: Information about data sources will be provided in the 2012 Integrated Report, which explains the sources of data used as well as data sets that were not used. The 2012 Integrated Report is

available on the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

- 15. Comment:** Waterways must not be delisted based on a lack of updated information, especially if the waterway was listed as impaired in the past. We already have one third fewer monitoring stations than we are supposed to have and now this will be used as an excuse to exclude waterways. Also testing standards must not be weakened by allowing data to be rounded down and including the margin of error so that streams exceeding limits would not be listed. (NJSC)

Response: The Department does not delist waterways based on a lack of updated information. If no recent data exists for a waterbody, then the original listing remains on the 303(d) list. However, if a monitoring station that showed exceedances in the past is no longer sampled, the Department may use newer data from nearby monitoring stations, if it is determined that such data is representative of the current conditions of that waterbody. However, the Department has reevaluated several listings (pre-1998) that were based on 304(l) determinations or the proximity to superfund sites. An evaluation of the original information used to list along with other information on the waterbody has been used to support delisting decisions. Such conclusions have been documented in the revised "Justification for Delisted Waters" posted on the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm.

- 16. Comment:** Waterways with unknown sources of pollution must continue to be included on the impaired list. Local residents and recreational users will continue to be impacted by the pollution and should be notified the waterbody is impaired. This is alarming as the Integrated Water Quality found one of the top three sources of pollution in our waterways is non-point source pollution. The Elizabeth River is the most polluted river for non-point source pollution in the country and it would be delisted. (NJSC)

Response: All pollutants found to be exceeding applicable SWQS criteria are placed on the 303(d) list without regard to the source of the pollutant, known or unknown. At no time would the Department delist a pollutant/waterbody combination because the source of the pollutant is unknown. Pollutants were delisted from the Elizabeth River because new data showed that applicable SWQS are being met (i.e., the waterbody is no longer impaired for that particular pollutant) or because the basis for the original listing was incorrect and available data does not support the listing. The specific reason and justification for each of pollutant delisted for the Elizabeth River is articulated in the revised "Justification for Delisted Waters", which is posted on the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm. Despite these delistings, the Elizabeth River remains on the 303(d) List for a host of pollutants.

- 17. Comment:** Did the Department use results obtained through a water quality model or dynamic model to assess use support and/or remove an assessment unit/pollutant combination from the 303(d) list? (USEPA)

Response: Yes. The USEPA Region 2 Toxics TMDL Model developed to support the NY/NJ harbor estuary program (USEPA Contract EP-C-08-003, January 2008) was used to determine conditions in the NY/NJ Harbor Estuary in prior and current Integrated Reports. The revised "Justification for

Delisted Waters” shows that the following AU/pollutant combinations were delisted based on the model outcomes:

Assessment Unit	AU Name	Cause
NJ02030103180030-01	Hackensack R (Ft Lee Rd to Oradell gage)	Copper
NJ02030103180080-01	Hackensack R (Rt 3 to Bellmans Ck)	Cadmium
NJ02030103180090-01	Hackensack R (Amtrak bridge to Rt 3)	Cadmium
NJ02030103180100-01	Hackensack R (below Amtrak bridge)	Cadmium
NJ02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Cadmium
NJ02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Zinc*
NJ02030105160100-01	Raritan R Lwr (below Lawrence Bk)	Cadmium

*The Public Water Supply Use also remains Not Supporting for other pollutants.

- 18. Comment:** Please provide the specific documentation which shows that Elizabeth River and Berry’s Creek were included within the modeling reports. Commenter believes these tributaries were not covered under the 1990’s or 2000’s Metal and toxics work that was done. (USEPA)

Response: This comment refers to the proposed delistings of **Copper and Lead** in NJ02030104020020-01 Elizabeth R (Elizabeth CORP BDY to I-78), NJ02030104020030-01 Elizabeth R (below Elizabeth CORP BDY), NJ02030103180060-01 Berrys Creek (above Paterson Ave), and NJ02030103180070-01 Berrys Creek (below Paterson Ave); **Cadmium** in NJ02030103180060-01 Berrys Creek (above Paterson Ave) and NJ02030103180070-01 Berrys Creek (below Paterson Ave); and **Hexavalent Chromium** in NJ02030103180070-01 Berrys Creek (below Paterson Ave). The Department has reassessed these proposed delistings and agrees that the metals and toxics work performed under the Contaminant Assessment and Reduction Project (CARP) does not provide sufficient basis to support these delistings. The Department also reassessed the proposed delistings for **Arsenic, Benzo(a)pyrene, Cadmium, Copper, and Lead** in NJ02030103180060-01 Berrys Creek (above Paterson Ave) and **Cadmium, hexavalent Chromium, Copper, and Lead** in NJ02030103180070-01 Berrys Creek (below Paterson Ave). The table below identifies and explains assessment outcomes that are different than those proposed in July 2012.

Assessment Unit	AU Name	2010 Listed Metals/Toxics	Final 2012 Outcome
NJ02030104020020-01	Elizabeth R (Elizabeth CORP BDY to I-78)	Copper	Remains delisted*; water quality data from Stations 01393300, 01393350, 01393440, and 01393450 meet applicable WQS
NJ02030104020020-01	Elizabeth R (Elizabeth CORP BDY to I-78)	Lead	Returned to 303(d) List based on water quality data from Stations 01393300, 01393440, 01393450, and 01393350 that exceed applicable WQS.

NJ02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Benzo(a)pyrene	Returned to 303(d) List based on Harbor Toxics Model***
NJ02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Copper	Remains delisted*; water quality data from Stations 01393300, 01393350, 01393440, and 01393450 meet applicable WQS
NJ02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Lead	Returned to 303(d) List based on water quality data from Stations 01393300, 01393350, 01393440, 01393450 that exceed applicable WQS
NJ02030103180060-01	Berrys Creek (above Paterson Ave)	Arsenic	Returned to 303(d) List based on USEPA Remand**
NJ02030103180060-01	Berrys Creek (above Paterson Ave)	Benzo(a)pyrene (PAHs)	Returned to 303(d) List based on Harbor Toxics Model***
NJ02030103180060-01	Berrys Creek (above Paterson Ave)	Cadmium	Returned to 303(d) List based on USEPA Remand**
NJ02030103180060-01	Berrys Creek (above Paterson Ave)	Copper	Returned to 303(d) List based on USEPA Remand
NJ02030103180060-01	Berrys Creek (above Paterson Ave)	Lead	Returned to 303(d) List based on water quality data from Superfund site.**
NJ02030103180070-01	Berrys Creek (below Paterson Ave)	Cadmium	Changed from delisting to “removed but not replaced”+
NJ02030103180070-01	Berrys Creek (below Paterson Ave)	Chromium, hexavalent	Returned to 303(d) List as “Chromium, total” based on USEPA remand of 1998 List
NJ02030103180070-01	Berrys Creek (below Paterson Ave)	Copper	Returned to 303(d) List based on USEPA Remand
NJ02030103180070-01	Berrys Creek (below Paterson Ave)	Lead	Returned to 303(d) List based on USEPA Remand

*Delisting reason was corrected to “WQS attained; original basis for listing was incorrect” (see Section VI.D.4 of the revised “Justification for Delisted Waters”).

**Designated use association was changed from Fish Consumption to Aquatic Life. The Public Water Supply Use does not apply to these AUs.

***Listings are based on data showing exceedances of the applicable WQS or based on the NY/NJ Harbor Estuary Program Toxics TMDL Model Development Study (USEPA Contract EP-C-08-003) prepared by HydroQual, Inc. under subcontract with RTI International (Subcontract 1-321-0211475) for USEPA Region 2. These AUs contain tidal tributaries to other waters that were sampled and evaluated in the modeling studies conducted under the Harbor Toxics Study, which provides the best available evaluation of these metals in surface waters of the NY-NJ Harbor Estuary.

+Incorrectly listed in 2008 based on data at Station 08-BC, which was collected under a Quality Assurance Program Plan (QAPP) that was not approved for this sampling program. (It was not listed under the 1998 Remand.) Since there are no valid data to assess compliance with the applicable WQS, Cadmium was removed from the 303(d) List rather than delisted.

19. Comment: The Integrated Water Quality Report from 2010 found the number of limited use and impaired waterways in New Jersey grew by 9.8% in the last two years alone, according to an analysis prepared by the Sierra Club. The changes proposed in the Register would only make more waterways appear safe on paper, but pollution would not be addressed. Waterbodies could be removed with no real steps being taken to clean up or limit the pollution entering, as long as the DEP is working on a TMDL. However, the preparation of a TMDL by the DEP does not mean the pollution issues will be immediately addressed. TMDLs for the Raritan and Passaic Rivers have taken over five years to be developed. Under these changes Berry's Creek in the Meadowlands, one of the most polluted streams in the State, would be delisted because it is part of a TMDL. The Passaic River below Dundee Dam would be delisted. Both are Superfund sites. There are currently 36 EPA approved TMDLs in New Jersey waiting to be implemented. It does not mean the water body meets CWA criteria for fishable and/or swimmable and should not be removed. (NJSC)

Response: The commenter is encouraged to review Chapter 7 of the 2012 Methods Document, as well as the *USEPA Guidance for Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, which is available as links from the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/support_docs.htm. These documents explain that the purpose of the 303(d) List, as established under the federal Clean Water Act, is to identify waters that do not meet applicable water quality standards after the use of technology-based controls and which require development of a total maximum daily load (TMDL) or other control measures to restore water quality.

Under the Integrated Assessment process developed by USEPA, the 303(d) List is comprised of all waters assigned to Category 5 of the Integrated List along with a priority ranking for TMDL development. Category 5 is used to identify waters where available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL or other control requirements action are needed. Category 4 of the Integrated List is used to identify waters where available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL or control measures are not needed for one of the following reasons:

- Category 4A: A TMDL to address a specific segment/pollutant combination has been approved or established by USEPA.

- Category 4B: A use impairment caused by a pollutant is being addressed through other pollution control requirements.
- Category 4C: A use is impaired, but the impairment is not caused by a pollutant.

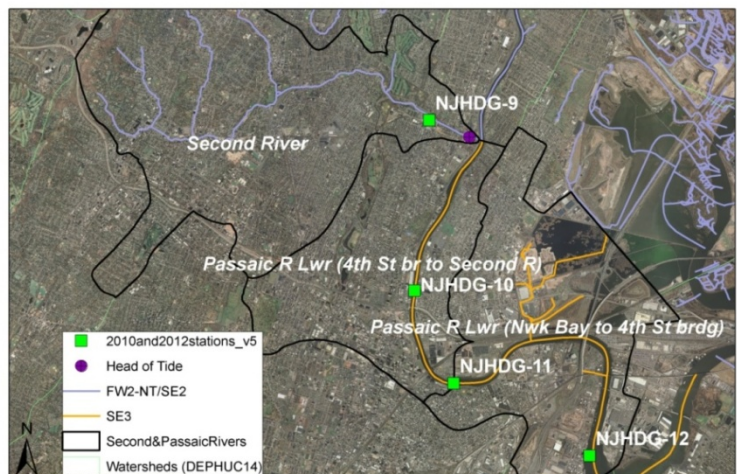
Since the 303(d) List is reserved for impaired waters that require a TMDL or control measures, impaired waters that do not require a TMDL are “delisted” and moved to Category 4. Category 4 waters do not meet water quality and are shown in the Integrated List as “Not Supporting” the designated use(s) and remain impaired. The *2012 Integrated Water Quality Assessment for New Jersey Overview of Water Quality Conditions*, which was published along with the draft 2012 303(d) List on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm, includes graphs and narrative explaining the differences between waters on the 2012 303(d) List and impaired waters shown on the Integrated List as “Not Supporting” the associated designated use(s).

Draft 303(d) List with Priority Ranking

20. Comment: NJ02030103150040-01 Passaic R Lwr (4th Street Br to Second R) and NJ02030103150050-01 Passaic R Lwr (Nwk Bay to 4th St Brdg) should be listed for Enterococcus and the Secondary Contact Recreation Use should be “Not Supporting” based on data generated by the New Jersey Harbor Discharger Group (NJHDG) (see http://www.nj.gov/pvsc/pdf/2008_NJHDG_WQ_Report.pdf). This data was used in support of the pathogen TMDL efforts. (USEPA)

Response: The above-referenced data was used by the Department; however, the assessment resulted in a “fully supporting” decision for recreational use. The two assessment units in question contain SE3 waters¹ and were assessed using Fecal Coliform data collected by the New Jersey Harbor Discharge Group, specifically, Stations NJHDG-10 and NJHDG-11 in NJ02030103150040-01 Passaic R Lwr (4th Street Br to Second R) and Station NJHDG-12 in NJ02030103150050-01 Passaic R Lwr (Nwk Bay to 4th St Brdg). Data from these stations meet the SE3 criterion for Fecal Coliform, which is the applicable pathogenic indicator for SE3 waters. Enterococcus is the pathogenic indicator used to assess the Primary Recreation Use in SE1 and SC waters. The Primary Recreation Use does not apply to these two AUs, which were assessed as fully supporting the Secondary Contact Recreation Use based on the Fecal Coliform data.

Second and Passaic Rivers



¹ The Use Attainability Analysis of the New York Harbor Complex conducted in June 1985¹ determined that “the existing SE2 and SE3 classification should be retained for the tidal Passaic.”

A third assessment unit, NJ02030103150020-01 Second River which is classified as FW2-NT/SE2, was assessed based on Station NJHDG-9, which is in FW2 waters, and was found to exceed the FW2 criterion for E. coli, which is the pathogenic indicator for FW2 waters. This assessment unit/pollutant combination was originally listed for Fecal Coliform in 2004, which was replaced with E. coli in 2006. Primary Contact Recreation remains as “Not Supporting” on the 2012 Integrated List.

- 21. Comment:** Please add Hackensack R (Ft Lee Rd to Oradell gage) NJ02030103180030-01 to the 303(d) list for Dissolved Oxygen (DO). Please refer to New Jersey Harbor Dischargers Group Water Quality Report, page 14, Figure 19 “% DO samples below standards–Hackensack and Hudson Rivers” (see www.nj.gov/pvsc/pdf/2008_NJHDG_WQ_Report.pdf). (USEPA)

Response: In the report, Stations NJHDG-13, 14, and 15 exceeded applicable SWQS for DO but they were not used to assess this AU since they are located in downstream AUs. Instead, DO data from Stations 01378500 and 01378567, which are located in this AU, were used to assess the waters. Looking at the last five years of DO data showed that Station 01378567 had one exceedance in August 2009, and Station 01378500 had only one exceedance in August 2006.

- 22. Comment:** Ocean acidification is an overarching threat to ocean ecosystems and fisheries that depend on a healthy environment. New Jersey should provide leadership on ocean acidification. The state has an opportunity to take steps to address this important water quality problem before it is too late. On behalf of the Center for Biological Diversity, I am writing to request that New Jersey amend its Draft 303(d) water quality assessment to: List coastal waters and Delaware Bay as threatened or impaired water bodies due to ocean acidification under Section 303(d) of the Clean Water Act. Ocean acidification is already causing measurable impacts on coastal and bay waters. The state has a duty to look at the information that is available to it to evaluate the condition of its coastal waters in the face of ocean acidification.

New Jersey should list its waters as threatened or impaired under the Clean Water Act. The available information shows that water quality has changed in excess of New Jersey’s standard due to anthropogenic inputs. Moreover, aquatic life uses are and will continue to be compromised by ocean acidification. Delaying action will only allow the problem and impacts to become more severe. (CBD)

Response: New Jersey’s ocean waters are classified as SC. The adopted pH criteria for SC waters is “natural conditions shall prevail.” The Department has not determined what the natural pH range should be and does not have an adequate data set to assess the condition. The Delaware Bay is classified by the Delaware River Basin Commission (DRBC). The pH criterion for Delaware Bay is 6.5-8.5. DRBC determined that 98% of the samples met the criteria in its 2012 Integrated Report. The 2% that did not meet exceeded the upper end of the criteria. The Department concurred with DRBC’s assessment and did not list Delaware Bay as impaired for pH.

In addition, the USEPA also addressed this issue in litigation settled with the Center for Biological Diversity (CBD). CBD challenged USEPA’s approval of Washington State’s 2008 303(d) List because it failed to include coastal waters as impaired for marine pH (CBD v. EPA, No. 2:09-cv-00670-JCC (W.D.Wash.)) As a condition of the settlement agreement, USEPA issued a Memorandum of Agreement on November 15, 2010 describing how they will proceed with addressing ocean

acidification in the 303(d) Program (see http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/oa_memo_nov2010.pdf).

The Memorandum, entitled: “Integrated Reporting and Listing Decisions Related to Ocean Acidification”, states:

EPA has concluded that States should list waters not meeting water quality standards, including marine pH WQC, on their 2012 303(d) lists ... using the current 303(d) listing program framework. This Memorandum does not elevate in priority the assessment of waters for OA, but simply recognizes that waters should be listed for OA when data are available. EPA recognizes that information is absent or limited for OA parameters and impacts at this point in time and, therefore, listings for OA may be absent or limited in many States ... EPA will provide additional 303(d) guidance to the States when future OA research efforts provide the basis for improved monitoring and assessment methods, including approaches being developed under two significant Federal efforts ... that will begin in early 2011.

The attachment to the Memorandum includes a section on assessment of marine pH water quality criteria (WQC) as a “natural condition”. It states:

Most states do not have detailed monitoring protocols, assessment methods, or high-resolution equipment needed to quantify natural conditions within their coastal waters, which is needed to implement such criteria. This absence is due to the fact that marine pH concentrations can vary by depth, time of day, season, and location, making it difficult to monitor accurately. Additionally, historical pH datasets typically lack the necessary detail for States to establish accurate baselines.

Since the Department has not adopted a numeric criteria range for pH in ocean waters, an assessment method to evaluate pH in ocean waters has not been developed. EPA’s guidance does not require the states develop pH criteria for ocean waters but to list, if the measured pH exceeded the State’s adopted water quality criteria. The Department does not have sufficient data nor has the Center for Biological Diversity provided pH data collected in New Jersey’s ocean waters or Delaware Bay to support pH criteria development. Therefore, no change has been made to the 303(d) list.

Draft 2012 Delistings

- 23. Comment:** NJDEP is proposing to delist tidal waterbodies that were previously listed as impaired for Total Phosphorus. NJDEP is claiming that the numeric criterion for Total Phosphorus does not apply to tidal river segments, only freshwater segments. This is due to the most recent rulemaking in December of 2010 when NJDEP adopted revisions to restrict the application of the numeric phosphorus criterion of 0.1 mg/L at N.J.A.C. 7:9B- 1.14(d)4ii(1) to non-tidal streams. However, EPA did not approve this particular revision (along with other numeric nutrient criteria revisions adopted at that time by NJDEP). Thus, until the WQS revisions are approved by EPA, the numeric nutrient criteria for TP of 0.1 mg/L remains applicable to all streams. The following segments cannot be delisted for Total Phosphorus based on NJDEP's justification that the numeric criteria does not apply for saline waters: (USEPA)

- NJ02030104020030-01 Elizabeth R (below Elizabeth CORP BDY)
- NJ02040301170060-01 Mullica River (Rt 563 to Batsto River)
- NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563)
- NJ02030105120170-01 Raritan R Lwr (Lawrence Bk to Mile Run)
- NJ02040202080020-01 Rancocas Creek (Martins Beach to NB/SB)
- NJ02040202120090-01 Newton Creek (LDRV-Kaighn Ave to LT Ck)

Response: USEPA has not yet approved the Department’s amendments to the SWQS rules establishing that the numeric TP criteria apply only to non-tidal freshwaters; therefore, the AUs shown in the table below were returned to the 303(d) List for TP. TP remains delisted in NJ02040301170060-01 Mullica River (Rt 563 to Batsto River) and NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563) because salinity data at Stations R27 and R28 show that they are located in saline waters; therefore, the numeric TP criterion does not apply.

- 24. Comment:** In Section II.A of the revised “Justification for Delisted Waters”, Metals Based on NY/NJ Harbor Toxics Modeling, please include the below reference to the modeling work that was done, which shows the assessment units are not exceeding the water quality criteria: http://www.harborestuary.org/pdf/HydroQual-DevelTMDLsHarbor_1995.pdf and http://www.harborestuary.org/reports/toxics/NY-NJ-1994-Copper_etal-NY-NJ_Harbor.pdf. (USEPA)

Response: The Department added the above-referenced links to the revised “Justification for Delisted Waters”.

- 25. Comment:** NJ Surface Water Quality Standards apply to Chromium III and Chromium 6. Please provide supporting documentation that justifies the delisting for Total Chromium for NJ02030103110020-01 Pompton River, NJ02040301080060-01 Toms R Lwr (Rt 166 to Oak ridge Pkwy), and NJ02040202100060-01 Pennsauken Ck (below NB/SB). (USEPA)

Response: Total Chromium data from Stations 01388500 and 01388600 in NJ02030103110020-01 (Pompton River), Stations 13-TOM-1 and 01408500 in NJ02040301080060-01 (Toms R Lwr (Rt 166 to Oak ridge Pkwy), and Station 01467082 in NJ02040202100060-01 (Pennsauken Ck (below NB/SB) meet the applicable SWQS for human health and aquatic life criteria. The most stringent chromium criterion is the chronic aquatic life criterion expressed as chromium⁺³. At a hardness of 50, the criterion is 13 ug/l as a four-day average. Of the 1,234 total chromium samples collected in 2009 and 2010, the highest result was 16.8 ug/l at a site with a hardness of 385. The Department has collected 1,352 samples between 2002 and 2012 for chromium⁺⁶. Most of the results were non-detects and the highest result was 13 ug/l. NJDEP data is available in STORET; USGS data is available in NWIS.

- 26. Comment:** There is no Section III.D. Please replace and change to “see III.B.” (USEPA)

Response: The requested correction has been made to the headings in the revised “Justification for Delisted Waters”.

27. Comment: The following delistings are identified in the revised “Justification for Delisted Waters” but do not appear as delistings in ADB: Turbidity in NJ02040202110040-01 Cooper R (Wallworth gage to Evesham Rd), and Zinc in NJ02040302030040-01 GEHR (Broad Lane road to AC Expressway). (USEPA)

Response: ADB has been corrected to show that Turbidity in NJ02040202110040-01 Cooper R (Wallworth gage to Evesham Rd) was delisted based on restoration activities (see revised “Justification for Delisted Waters”, Section I.A.11). Zinc in NJ02040302030040-01 GEHR (Broad Lane road to AC Expressway) was not on the 2010 303(d) List so it was not delisted in 2012 and was removed from the revised “Justification for Delisted Waters”.

28. Comment: DEP provided only two samples to support de-listing for assessment unit NJ02040301170020-01 Hammonton Creek (Columbia Rd to 74d43m) for Copper to EPA, and one sample appears to exceed the SWQS's. Please provide further de-listing justification or return this segment to the 303(d) list. Please also provide the data and justification for delisting Zinc in this AU. (USEPA)

Response: Copper was returned to the 2012 303(d) List because insufficient data was available to confirm that the aquatic life chronic criterion had been met. Zinc remains delisted because all 22 samples collected at Stations 01409414 (14), 01409416 (6), and 01409418 (2) meet the human health and aquatic life criteria for Zinc. The delisting justification was revised accordingly (see revised “Justification for Delisted Waters”, Section III.B). The data is available from STORET.

29. Comment: Data for NJ02030104060060-01 Pews Creek to Shrewsbury River show two exceedances of the DO standard in 2010. Please provide further delisting justification or return this segment to the 303(d) list. (USEPA)

30. Comment: Data for NJ02030104070110-01 Navesink R (Below Rt 35)/Lower Shrewsbury show two exceedances of the DO standard in 2009 and 2010. Please provide further delisting justification or return this segment to the 303(d) list. (USEPA) and (COA)

31. Comment: NJ02030104070100-01 Poricy Bk/Swimming R (below Swimming River Rd), was delisted for DO. For 2007-2011 data, Monmouth County website shows three samples were below 4 mg/L for site 41 on Navesink River. COA requests the data that the DO delisting decisions were based upon. (COA)

Response to Comment 29 - 31: The Department has re-evaluated these proposed delistings and has determined that they are not supported by the available data. Some of the recorded values that do not comply with the applicable DO criterion are actually within the range of analytic uncertainty of the recording instrument. However, since only grab samples were available, the data set may not have captured DO concentrations that were below criteria. Therefore, these waterbodies have been returned to the 303(d) list for DO.

32. Comment: There is an apparent error regarding NJ02030104070110-01 Navesink R (below Rt 35)/Lower Shrewsbury. This AU is listed as impaired for aquatic life for cause unknown on the

Integrated List; however, this AU is not on the delisting list or the 303(d) list. This oversight needs to be addressed in the final lists. (COA)

Response: The 2012 Integrated List shows Cause Unknown and Turbidity as causes of Aquatic Life Use non-support in NJ02030104070110-01, with Cause Unknown identified as “pollution” under the “TMDL Status” column. As stated in Section 7.1 of the 2012 Methods Document, “Where biological data indicate impairment and chemical data show exceedance(s) of applicable criteria, the chemical parameter(s) will be identified as pollutant causes in ADB and placed on the 303(d) List; “cause unknown” will be identified as a “non-pollutant” cause of Aquatic Life Use non-support in ADB and in the Integrated List of Waters, but will not be identified on the 303(d) List.” (Cause Unknown was not included as a pollutant on the 2010 303(d) List so it would not appear on the 2012 “Justification for Delisted Waters”.)

33. Comment: The Assessment Unit (AU) NJ02030104080020-01 Parkers Creek / Oceanport Creek has been delisted based on data showing the standard has been met, including at Station 40. However, county data indicates that there have been four samples below 4 mg/L – demonstrating that this area fails to meet water quality standards. (COA)

Response: DO data were available from five stations within NJ02030104080020-01 Parkers Creek / Oceanport Creek. All 38 samples (since 2006) from Stations 33, R04, R58, and R59 meet the SE1 criterion for DO. Although Station 40 showed exceedances (2 of 8 samples), the site was not considered as representative because of it is located in a cove, where poor mixing could attribute to the low DO. Stations upstream and downstream showed no exceedances and are better representatives of water conditions. Therefore, DO remains delisted but the delisting reason was changed to “Applicable WQS Attained; according to new assessment method.”

34. Comment: AU NJ02030104080040-01 Shrewsbury River (above Navesink River) was delisted despite a recent DO water quality standard failure. There are two recent DO impairments on August 12, 2010 at Station 44 and August 9, 2011 at Station 1111B. (COA, USEPA)

Response: DO data was available from seven stations in this AU: Stations 1100A, 1104B, 1111B, 1127A, 1132, 39, and 44. Only one sample (Station 44 on 8/12/10) out of the 90 collected during the reporting period exceeded the applicable DO criterion. As explained earlier, Section 4.1 of the 2012 Methods Document states: “Two or more exceedances of the applicable water quality criteria associated at a given station are required to confirm water quality impairment at that location.” Even if data collected in 2011 was considered, there was still only one exceedance recorded at Station 1111B. Therefore, this AU meets the applicable WQS for DO and remains delisted.

35. Comment: Please provide the data and justification for delisting DO in NJ02040301030010-01 Metedeconk R SB (above 1-195 exit 21 rd) (USEPA).

36. Comment: The delisting justification document (page 13) lists stations that do not apply to the assessment unit NJ02040301030010-01 lists. (BBP)

Response to Comments 35 and 36: The Department agrees with this comment and the revised “Justification for Delisted Waters” was corrected to remove the incorrect stations.

NJ02040301030010-01 Metedeconk R SB (above I-195 exit 21 rd) was delisted for DO based on data from Stations SL, SM, and SN, which meet the FW2-NT criterion for DO. All samples at Station SL (22), SM (5), and SN (20) meet the FW2-NT criterion for DO. Both samples at Station AN0508 also meet the FW2-NT criterion for DO. Therefore, this AU meets the applicable SWQS for DO.

37. Comment: Please provide the data and justification for delisting Total Suspended Solids in NJ02030105080030-01 Raritan R Lwr (Millstone to Rt 206). (USEPA)

Response: Older data (2000 to 2002) at Station 01400500 shows that one of five samples exceeded the applicable WQS for TSS. Newer data (2006 to 2010) at Station 0140000 located in the upstream AU NJ02030105070030-01, and Station 01398102 located in the upstream AU NJ02030105040040-01, all meet the criteria. Data are available in STORET. Since land use is similar to the upstream AUs and no major tributaries are present to significantly alter water quality, this AU was assessed as meeting the applicable WQS for TSS and remains delisted.

38. Comment Please provide all DO data at monitoring stations NJHDG-5 and Passaic-8 for the FW2-NT criterion for DO for NJ02030103120090-01 Passaic R Lwr (Saddle R to Dundee Dam). (USEPA)

Response: All samples at NJHDG-5 and Passaic-8 meet the DO criteria except for two samples at Passaic-8 in July 2004, which exceeded the DO criteria; however, more recent data (2006) at this station meet applicable WQS and were given more weight than the older data (see Methods Document, Section 3.1 “Data Age”). The delisting reason was changed to “Applicable WQS Attained; reason for recovery unspecified.”

39. Comment: Section III – Water Quality Attained of the Delisting Justification shows Cadmium, Chromium, and Lead in NJ02040302030010-01; Mercury in NJ02040302050130-01; and six metals each in NJ02040302040080-01 and NJ02040302040090-01 as proposed for delisting. However, these delistings are not shown in ADB or the draft Delisting Document. (USEPA)

Response: This section of the Delisting Justification was intended to explain the Department’s re-evaluation of metals listings for the Great Egg Harbor River that were carried over from the 1998 303(d) List. The Department traced the listings back to the original stations from which the data was collected and re-assessed the data based on the criteria and designated uses that now apply to the respective AUs, distinguishing between the criteria for fresh and saline waters. However, this section did not clearly identify which AU/pollutant combinations were proposed for delisting based on the re-evaluation (although all proposed delistings were identified in the draft Delisted Waters document entitled, “Assessment Unit-Cause Combinations Removed from 303(d) List” (July 7, 2012).

The Department did not propose to delist any metals from NJ02040302030010-01 Great Egg Harbor R (above New Freedom Rd), since no metals in this AU were on the 2010 303(d) List. Copper was the only metal listed in NJ02040302040080-01 GEHR (39d32m50s to Hospitality Branch) and NJ02040302040090-01 in 2010, it was not proposed for delisting in 2012, and it remains listed for both AUs.

The Department did propose to delist six metals (Cadmium, Total Chromium, Copper, Lead, Nickel, and Zinc) in NJ02040302050130-01 Great Egg Harbor R (GEH Bay to Miry Run) and in

NJ02040302050140-01 Great Egg Harbor R (GEH Bay to Gibson Crk) because data show the applicable WQS were attained, as explained in the revised “Justification for Delisted Waters”, Sections III.B and C. In addition, Section VII.30 explains that NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) and NJ02040302050140-01 Great Egg Harbor R (GEH Bay to Gibson Crk) were both incorrectly listed for Mercury based on Mercury in Water Column data. Mercury in Water Column data at Stations 01411110 and 15-GEH-3 meet the applicable WQS for Mercury in Water Column; however, Mercury in Water Column data is used to assess the Public Water Supply Use, which does not apply to either AU. Mercury in fish tissue data are not available to assess the Fish Consumption Use in these AUs so the Fish Consumption Use was changed to Insufficient Information. Mercury in fish tissue in NJ02040302050130-01 should have been delisted but was not included with the other delistings. We will revisit this assessment in the 2014 Listing Cycle.

- 40. Comment:** Section III.C.1 of the Delisting Justification does not provide justification that NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) is not exceeding the WQS for Arsenic. Please provide the supporting data to justify the delisting of Arsenic for this segment. (USEPA)

Response: The “Justification for Delisted Waters” was revised to explain that Arsenic in NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) was incorrectly listed as a cause of Aquatic Life Use non-support based on exceedance of the human health criterion; however, this criterion is used to assess the Public Water Supply Use, which does not apply to this AU since it contains only SE waters (see Section VII.28).

- 41. Comment:** Waters can only be delisted for Polychlorinated Biphenyls (PCBs) under the Delaware Estuary PCB TMDLs (Zones 2-5 and 6) where allocations will result in meeting water quality standards for PCBs. USEPA, NJDEP and DRBC have had several discussions regarding which waters are covered by the TMDLs and it has become clear that many of the waters proposed for delisting extend beyond the scope of the PCB TMDLs. NJDEP should prepare a TMDL amendment identifying the waters that are covered by the TMDLs and provide the justification that the allocations will result in meeting water quality standards in these waters. The amendment should be prepared in consultation with EPA and DRBC. NJDEP must provide public notice on the amendment, respond to public comments, and then submit it to EPA for review and approval. The public notice can occur in conjunction with the 303(d) list public notice. (USEPA)

- 42. Comment:** DuPont supports the delisting of PCB in fish tissue for NJ tributaries that discharge into the Delaware Estuary up to the head of tide. These portions of the rivers and creeks are covered under EPA’s approved PCB TMDL for the Delaware River Zones 2-6. Performing another PCB TMDL on these waterbodies again would be a duplication of work already completed. (DuPont)

Response to 41 and 42: All assessment units that were proposed to be delisted and moved to Category 4A because they contain New Jersey tidal tributaries included in the model domain used to support the Delaware Estuary PCB TMDL have been returned to the 2012 303(d) List. The Department was advised by USEPA that since these AUs were not specifically named in the TMDL approval document, they are not covered by the TMDL and may not be delisted and moved to Category 4A. These AUs will be addressed in the Phase 2 Delaware PCB TMDL and delisted and moved to Category 4A once that TMDL is established.

43. Comment: Please provide supporting documentation which states that the TMDL target of 330 CFu/100ml and Geomean of 70 CFu/100ml for total coliform will assure that the SWQS for SE1 waters (the Enterococcus Geomean of 35/100ml or single max of 104/100ml) will be met. (USEPA)

Response: USEPA’s Recreational Water Quality Criteria document provides an historical perspective on how the criteria were developed. The original criteria were based upon total coliform as a geomean of 2,300 CFu/100ml. This was translated into an equivalent value of 400 CFu/100ml as a geomean using fecal coliform. That value was halved to create a fecal coliform criterion of 200 CFu/100ml as a geomean for Primary Contact Recreation. USEPA selected E. coli and Enterococcus as better indicators but used the same illness rates to establish the 126 CFu/100ml E. coli geomean and 35 CFu/100ml Enterococcus geomean for Primary Contact Recreation. Therefore, the pathogenic criteria of 200 CFu/100ml fecal coliform, 126 CFu/100ml E. coli, and 35 CFu/100ml Enterococcus are all equivalent and equally protective.

The total coliform target of 70 CFu/100ml is significantly more stringent than the original starting total coliform standard of 2,300 CFu/100ml, which formed the basis for the original criteria recommendations. Since fecal coliform is a subset of total coliform and represents about 20% of the coliforms, a total coliform target of 70 CFu/100ml for unrestricted shellfish harvest is the equivalent of a fecal coliform target of less than 15 CFu/100ml, which is significantly more stringent than all fecal indicator bacteria criteria for recreational use. This is why USEPA and the Department have agreed to not re-list another pathogen indicator if a Shellfish TMDL has been completed, which would establish a more stringent target for pathogens than any of the Recreational Use criteria.

44. Comment: Escherichia coli in NJ02040202110060-01 Cooper River (below Rt 130) is shown as a delisting under Section VI.C. “Delisted Under TMDLs (Still Impaired)”. However, this delisting was not entered into ADB. (USEPA)

Response: Escherichia coli in NJ02040202110060-01 Cooper River (below Rt 130) was proposed as a new listing in both the draft 2012 303(d) List and the draft 2012 Integrated List; however, it was incorrectly described as a delisting in the draft “Justification for Delisted Waters”. There was insufficient information to assess Recreational Uses in this AU prior to 2012; however, new (2009) data at Stations Cooper River at Cuthbert Blvd and Cooper River near mouth exceed geomeans for E. coli, Enterococcus, and Fecal Coliform. The Cooper River pathogen TMDL does not cover these stations, which are located in tidal freshwaters. E. coli remains on the final 2012 303(d) List as the cause of Primary Contact Recreation Use non-support.

45. Comment: Jakes Branch (NJ02040301080070-01) was delisted for dissolved oxygen based on grab samples from 2011. Do the 2008-2010 data also meet the criteria? The 2012 Methods Document states that the NJDEP will use “the most recent five years of readily available data to characterize current conditions. Past assessments are considered valid until new data show that conditions have changed.” If data did not meet the criteria during the assessment timeframe, or there were only data from one year and no other explanations for the change are evident, we believe the Jakes Branch should remain on the 303(d) list. (BBP)

Response: DO was originally listed in 2006 based on grab sample data from 2000-2002 and continuous (diurnal) data in 2003 at Station 01408702. However, diurnal data in 2005 at the same

station meets the applicable SWQS criterion for DO and was given more weight than the older data. Therefore, this AU meets the applicable SWQS for DO and remains delisted.

- 46. Comment:** On the Integrated List, Jakes Branch (NJ02040301080070-01) is shown as not supporting Aquatic Life (for cause unknown) but is not included on either the 303(d) list or the delisting list. For consistency, we recommend that the Jakes Branch be placed on the 303(d) for causes unknown. (BBP)

Response: The Department re-evaluated all the AUs where Cause Unknown was identified as a cause of Aquatic Life Use non-support and, as a result, Cause Unknown in NJ02040301080070-01 Jakes Branch was added to the 303(d) List based on AMNET data at Station AN0543.

- 47. Comment:** There seem to be discrepancies in the listings and delistings for certain parameters in neighboring AUs (e.g., Metedeconk River NJ02040301020010-01 for Lead and Turbidity, NJ02040301020020-01 for Cause Unknown and Turbidity, NJ02040301020050-01 for Cause Unknown, and NJ02040301030010-01 for Lead). Some of these same parameters appear as newly listed for 2012 on the 303(d) list for other assessment units in the same basin (e.g., NJ02040301020050-01 for Lead, NJ02040301030050-01 for Lead and Cause Unknown). What is the justification for listing some of these tributaries on the 303(d) list and not listing others? (BBP)

Response: All AUs in the Metedeconk River Watershed were assessed based on surface water quality data collected by the Department, USGS, and Brick Township MUA, which provided a substantial dataset. In the draft 2012 Integrated List, Lead and Turbidity were inadvertently listed as “pollution” rather than as a “pollutant” in several AUs. Since only “pollutants” appear on the 303(d) list, this caused the discrepancies in the Metedeconk watershed. This has been corrected in the final 2012 Integrated List and related documents. Lead and turbidity were changed from “pollution” to “pollutant” and placed on the final 303(d) List. Where biological data indicated impairment but no aquatic life pollutants were identified as exceeding water quality criteria, “Cause Unknown” was added to the final 303(d) List. Similarly, the Department discovered that Mercury in fish tissue and/or PCB in fish tissue were incorrectly shown as “pollution” in several AUs. These have been changed to “pollutants” and added to the final 303(d) List, and the Fish Consumption Use was changed from Insufficient Information to Not Supporting.

- 48. Comment:** Delistings are confusing regarding the Toms River Lower (below Route 166; NJ02040301080090-01). In the reasons for removal, they are noted as Category 5, “original basis for listing was incorrect.” In the delisting justification document, they are discussed with the Category 3 “reasons unspecified”, but the document goes on to say results from station 13-TOM-1 can be used to show the Assessment Unit meets the metals criteria. Station 13-TOM-1 does not show up on any of the tables as being included within the subwatershed. What data indicate that the conditions have changed, and what are the reasons for the changes to the extent that they are known? (BBP)

Response: The Department agrees with the commenter and the delisting reason was changed to “Applicable WQS attained; reason for recovery unspecified” in the revised “Justification for Delisted Waters”. Toms River Lower (below Route 166) was originally listed based on 304(L) documentation stating that Toms River was identified in 1986 as potentially impacted by VOCs and Metals due to point source discharge from Ciba Gigy. Samples from co-located Stations 13-TOM-1 and 01408500 showed no exceedances of criteria. As a result, two AUs, Toms River Lower (RT 166 to Oak Ridge

Parkway) and downstream Toms River Lower (below Route 166), were delisted for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc. A delisting for Arsenic was added as “Applicable WQS attained; original basis for listing was incorrect”. Arsenic was incorrectly listed as a cause of Public Water Supply Use non-support, which does not apply to this AU since it contains only SE waters. The Public Water Supply Use was removed.

- 49. Comment:** It is not possible for the public to knowledgeably comment on the DEP delisting of Barnegat Bay and many other waters because the supporting data are not provided in a publicly available document. The proposed delistings lack a clearly stated basis and are not supported by publicly available data. (PEER)

Response: All data used by the Department is publicly available. The major sources of data include EPA’s [STORET Database](#) and USGS’s [NWIS Database](#). These databases are available to the public through the Internet. All delistings are explained in the “revised Justification for Delisted Waters”, which is available on the Department’s Web site at http://www.state.nj.us/dep/wms/bwqsa/2012_integrated_report.htm and clearly states the reason and/or monitoring stations used to support the delistings.

- 50. Comment:** Dissolved Oxygen (DO) delistings should not occur. The DEP DO data, as well as all other data, used for delistings was not available online to review. For some areas, county data was located online with station identifiers that match stations that were cited in the delisting justification, and this evidence does not support delisting. Also, the timing of sampling has been shown to be critical in documenting minimum DO levels, and continuous 24-hour data is the most useful for examining minimum levels and overall fluctuations. For these lists, it is not clear whether any continuous monitoring data collected by the DEP or other academic entities is being used for these DO assessments. Efforts should be made to support continuous monitoring efforts and to use all available data that is being collected. The DEP should clarify what the methods were for all source data, and delay any DO-related delistings until continuous monitoring can be implemented to show improvement. (COA)

Response: The Department prefers to use continuous DO data as a more accurate method for assessing water quality conditions; however, continuous monitoring is a costly and resource-intensive method to collect data and is not readily available. When continuous data is available, and meets the Department’s quality control requirements, it is incorporated into all water quality assessments. Where both grab sample and continuous monitoring data are available, the Department gives more weight to the continuous monitoring data since grab samples may not capture the most critical time period (see 2012 Methods Document, Section 5.0). When determining the weight of evidence of continuous data, the following factors are taken into consideration: the duration of the sampling (number of days), time of year of sampling (DO is usually most stressed during the warm months), hydrologic conditions (high or base flow), unusual DO levels (bio-fouling due to lack of maintenance can give false readings), and location (small tributary, below outfall, poor mixing).

Assessment of Natural Conditions

- 51. Comment:** We understand that natural background levels of arsenic exceed the State's human health criteria, and this is not only an issue in NJ but also around the country. However, EPA's national

policy (excerpt below) does not allow human health-based criteria to be modified based on natural conditions. Thus, these segments cannot be delisted until the human health use designation is re-evaluated in New Jersey's Water Quality Standards (see http://water.epa.gov/scitech/swguidance/standards/upload/2009_01_29_criteria_naturalback.pdf. (USEPA)

For human health uses, where the natural background concentration is documented, this new information should result in, at a minimum, a reevaluation of the human health use designation. Where the new background information documents that the natural background concentration does not support a human health use previously believed attained, it may be prudent for the State or Tribe to change the human health use to one that natural background concentration will support (e.g., from drinking water supply to drinking water supply only after treatment).

Response: The Department proposed to delist Arsenic in the following AUs based on recent water quality studies defining a naturally-occurring range of Arsenic concentrations in waters located within certain regions of New Jersey:

- NJ02030104060050-01 Waackaack Creek
- NJ02030104100080-01 Manasquan R (74d07m30s to Squankum gage)
- NJ02040201040060-01 North Run (above Wrightstown bypass)
- NJ02040201050040-01 Crosswicks Ck(Walnford to Lahaway Ck)
- NJ02040202110020-01 Cooper River NB(below Springdale Road)
- NJ02040206040010-01 Mannington Creek
- NJ02040206060020-01 Alloway Ck (above Alloway-Woodstown Rd)
- NJ02040206060040-01 Deep Run (Alloway)
- NJ02040206180050-01 Menantico Creek (below Rt 552)
- NJ02040301020040-01 Muddy Ford Brook
- NJ02040301020050-01 Metedeconk R NB (confluence to Rt 9)
- NJ02040301030040-01 Metedeconk R SB (Rt 9 to Bennetts Pond)
- NJ02040301030050-01 Metedeconk R SB (confluence to Rt 9)
- NJ02040301040020-01 Metedeconk R (Beaverdam Ck to confl)
- NJ02040301080060-01 Toms R Lwr (Rt 166 to Oak Ridge Pkwy)

In 1971, the preamble to New Jersey's Surface Water Quality Criteria stated, "It should be pointed out that the criteria are not intended to be applicable in instances where water quality does not conform to specified values solely as a result of natural causes. This policy was later codified in 1974 at N.J.A.C. 7:9-4.4(a) 10 to ensure that the unique natural quality of New Jersey's waters was maintained and to guide the Department in determining the required degree of treatment to be imposed on wastewater treatment facilities. This policy has remained relatively unchanged since 1974 and is now codified at N.J.A.C. 7:9B-1.5(c)1.

Based upon this provision, the Department contracted with the United States Geological Survey (USGS) to determine the concentration of arsenic attributed to natural causes. USGS research established natural Arsenic levels in the Coastal Plain based on geologic conditions. The natural levels in the Outer Coastal Plain range from 0.24 to 0.61 ug/l while the concentrations in the Inner Coastal

Plan range from 0.36 to 0.70 ug/l. The Department took a conservative approach to the listing/delisting of waterbodies based on natural conditions. The process involved using 1997 to 2010 total Arsenic data (1997 sampling started using clean methods), calculating the average and comparing the average to natural Arsenic levels since Arsenic criteria is a 70 year exposure average. If the average was below natural levels, the waterbodies were not placed on the 303(d) List or were delisted if previously listed.

Arsenic is used as one of the parameters to determine if a waterbody is meeting the designated use for drinking water supply. The natural levels of arsenic are below New Jersey’s drinking water Maximum Contaminant Level (MCL) of 5 ug/l for Arsenic. Water supply sources (both surface and ground water) with arsenic concentrations less than 5 ug/l do not require additional treatment. Therefore, the designated use would still be supported under these naturally-occurring conditions. The Department believed that these delistings were consistent with USEPA’s 2006 Integrated Report Guidance, which answers the question: “Must Category 5 include a segment where the criterion has been exceeded but the exceedance is the result of background or natural conditions?” The answer provided states: “If the state’s water quality standards include a specific exclusion for exceedances caused by “natural conditions”, these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate.” There is nothing in this guidance that limits such delistings to only those pollutants associated with the Aquatic Life Use. The Department also felt that there would be no apparent environmental benefit from directing valuable and limited resources to developing and implementing TMDLs or other pollutant reduction measures when the naturally-occurring conditions fully support the designated use.

Based on the same rationale, the Department also did not propose new Arsenic listings in the following AUs:

- NJ02030104090040-01 Shark River (above Remsen Mill gage)
- NJ02030104090080-01 Wreck Pond Brook (below Rt 35)
- NJ02030105130070-01 Lawrence Bk (below Milltown/Herberts br)
- NJ02040202020030-01 Rancocas Ck NB (incl Mirror Lk-GauntsBk)
- NJ02040202030070-01 McDonalds Branch
- NJ02040202060070-01 Little Creek (above Bear Swamp River)
- NJ02040206100040-01 Cedar Creek (above Rt 553)
- NJ02040206140030-01 Green Branch / Endless Branch
- NJ02040206170050-01 Buckshutem Creek (below Rt 555)
- NJ02040206190030-01 Manumuskin River (below Rt 49)
- NJ02040206200020-01 Muskee Creek
- NJ02040206220030-01 Dennis Creek (Jakes Landing Rd to Rt 47)
- NJ02040301020030-01 Haystack Brook
- NJ02040301060020-01 Toms River (74-22-30 rd to FrancisMills)
- NJ02040301060050-01 Dove Mill Branch (Toms River)
- NJ02040301070040-01 Ridgeway Br (below Hope Chapel Rd)
- NJ02040301070090-01 Union Branch (below Blacks Br 74d22m05s)
- NJ02040301080050-01 Wrangel Brook (below Michaels Branch)
- NJ02040301130040-01 Cedar Run

- NJ02040301160060-01 Sleeper Branch (Rt 206 to Tremont Ave)
- NJ02040301170060-01 Mullica River (Rt 563 to Batsto River)
- NJ02040301200050-01 Bass River EB
- NJ02040301200110-01 Mattix Run (Nacote Creek)
- NJ02040302030060-01 GEHR (Piney Hollow Rd to Broad Lane rd)
- NJ02040302040070-01 Hospitality Br (below Piney Hollow Rd)
- NJ02040302040120-01 Deep Run (GEHR)
- NJ02040302050040-01 South River (below 39d26m15s)
- NJ02040302050050-01 Gravelly Run (above Gravelly Run road)
- NJ02040302050080-01 Stephen Creek (GEHR)
- NJ02040302070040-01 Tuckahoe River (Rt 49 to 39d19m52s)

However, this rationale was not supported by USEPA for delisting waters from the 303(d) List because the SWQS criterion for Arsenic is human-health based. USEPA does not support an assessment of waters as “fully supporting” the Public Water Supply use unless documentation is provided that shows the human health criterion associated with that use has been met. In New Jersey, the human health criterion for Arsenic is 0.017 ug/L (total recoverable), while the New Jersey MCL for Arsenic under the SDWA is 5 ug/L (the federal drinking water standard is 10 ug/L). Therefore, Arsenic in the delisted AUs was returned and Arsenic in 31 additional AUs was added to the final 2012 303(d) List (also see Response to Comment #79). The Department is evaluating options to address this issue in the 2014 cycle.

52. Comment: Waterbodies impacted by naturally occurring toxins should not be removed from the 303(d) list. For example, the industry claims mercury is naturally occurring, although it mostly enters waterways from coal-burning power plants and industrial facilities. Arsenic in our waterways could also go unreported under this loophole even though this naturally-occurring toxin is also the result of human actions such as pesticide use or industrial operations. Although natural, arsenic is worse in areas of overdevelopment as high nitrates level push the arsenic out of the soil. (NJSC)

Response: Where the Department suspects that toxic pollutants are naturally-occurring, a more detailed study is conducted to ensure that they are not contributed by anthropogenic sources. No New Jersey waters have been delisted for mercury from natural sources. All waters delisted for mercury are either covered by the Statewide Mercury TMDL or were found to meet the water quality target established under the Statewide Mercury TMDL. The Statewide Mercury TMDL focused on atmospheric deposition of mercury and its effects on water quality and fish consumption. This report, entitled: “Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide,” is located on the Department’s Web site at: <http://www.nj.gov/dep/wms/bear/tmdls.html>. Waterbodies that were previously placed on the 303(d) List for mercury in fish tissue but are covered by the statewide mercury TMDL were delisted and moved to Category 4A. (Also see the Response to Comments 19 and 51.)

53. Comment: Please document, as is required within Section 3.2 of the NJDEP 2012 Methods Document, that there are no anthropogenic sources or causes of the pollutants identified below. (USEPA)

Assessment Unit	AU Name	Pollutant
NJ02040105140020-01	Pohatcong Ck (Brass Castle Ck to Rt 31)	pH
NJ02040105140050-01	Pohatcong Ck (Merrill Ck to Edison Rd)	pH
NJ02040301170060-01	Mullica River (Rt 563 to Batsto River)	pH
NJ02040105140030-01	Pohatcong Ck (Edison Rd-Brass Castle Ck)	pH
NJ02040206130030-01	Indian Branch (Scotland Run)	pH
NJ02040301170080-01	Mullica River (Lower Bank Rd to Rt 563)	pH
NJ02030105010050-01	Raritan R SB (LongValley br to 74d44m15s)	Temperature

54. Comment: Limestone geology is also being used inappropriately to delist contaminated waterbodies in Warren County. (NJSC)

Response to 53 and 54: In response to these comments, the Department reassessed the proposed delistings for natural conditions, as well as some listings based on similar data, and determined that there are no anthropogenic sources that would cause low pH in the AUs listed for that reason; therefore, pH remains delisted based on natural conditions in NJ02040206130030-01 Indian Branch (Scotland Run), and a delisting was added for pH based on natural conditions in NJ02040301140020-01 Mill Branch (below GS Parkway). Section 3.2 of the 2012 Methods Document states “Data that do not meet applicable SWQS criteria potentially due to natural conditions will be carefully evaluated, and any excursions attributed to natural conditions will be explained and supported in the Integrated Report.” All of these pH delistings are supported by the weight of evidence documented in Section II.D of the revised “Justification for Delisted Waters”. Also see Agency-initiated changes, #2.

NJ02040301170060-01 Mullica River (Rt 563 to Batsto River), and NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563) were listed based on *high* pH levels recorded from seven samples collected in 1977-78, which is insufficient to support listing. pH in these AUs remains delisted but the reason was changed to “Data And/or Information Lacking To Determine Water Quality Status; Original Basis For Listing Was Incorrect” (see Section VII.23 of the revised “Justification for Delisted Waters”. The Aquatic Life Use in NJ02040301170060-01 was changed from Fully Supporting to Insufficient Information on the final 2012 Integrated List.

Temperature in NJ02030105010050-01 Raritan R SB (LongValley br to 74d44m15s) remains delisted but the reason was changed to “WQS attained; original basis for listing incorrect” (see Section VI.G.2).

pH was returned to the 303(d) List for NJ02040105140020-01 Pohatcong Ck (Brass Castle Ck to Rt 31), NJ02040105140030-01 Pohatcong Ck (Edison Rd-Brass Castle Ck) and NJ02040105140050-01 Pohatcong Ck (Merrill Ck to Edison Rd) .

pH was not listed in NJ02040201050070-01 Crosswicks Ck (Doctors Ck-Ellisdale trib) and Cedar Creek (above Rt 553) NJ02040206100040-01 because data showing exceedances of the pH criterion were collected at stations that are tidally influenced by the Delaware River, which causes the pH to be naturally higher. AMNET results show biology is not impaired. Data from upstream AUs show that pH meets applicable WQS and there are no identified anthropogenic sources of high pH (see

Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters, Section I.B).

Assessment of Barnegat Bay

- 55. Comment:** It is not clear from the “Monitoring and Assessment” document why the NJDEP is using the Barnegat Bay 2011 monitoring data to remove impairments (“de-list”) from the Integrated List but is not using those same data to add any potential impairments until the new bay-specific methodology is established. In other words, different data are being used in listing and delisting decisions. The BBP recommends that listing and delisting should follow the same procedures and make use of the same data. For consistency, delistings based on the 2011 data should not be made until after the new methodology is developed and more information is available to establish unequivocally that conditions have indeed changed. (BBP)
- 56. Comment:** In order to understand the rationale for the proposed delisting of NJ02040301050050-01 Barnegat Bay North (Above Rt 37 Bridge) for Dissolved Oxygen, please provide all continuous monitoring data taken by NJDEP and all entities, including the Barnegat Bay Partnership and Monmouth University. (USEPA)
- 57. Comment:** The proposed delisting of Barnegat Bay and other waters is not based on scientifically valid methods to determine if the state's surface water quality standards are attained. For example, the DO sampling apparently fails to address diurnal DO swings. The DEP may not have used all data which meet its data requirements. I understand that Rutgers and Barnegat Bay Partnership data is available and has not been used. (PEER)
- 58. Comment:** The methodology used to sample the dissolved oxygen levels in the Barnegat Bay was flawed. The DEP should relist the northern half of Bay for being impaired for dissolved oxygen based on previous data and the previous 2010 listing for dissolved oxygen. (NJSC)
- 59. Comment:** Barnegat Bay North (NJ02040301050050-01) has been delisted for dissolved oxygen based on new data from a number of grab samples, including three in the Barnegat Bay Monitoring Partnership (BBP). It is not clear if the data from the BBP/Monmouth University continuous data loggers was used. If the recent data does support delisting, we request that the NJDEP review the longer term dataset to determine if the bay should be listed as “threatened waters” based on the previous recent data that indicated the impairment. (BBP)
- 60. Comment:** First, NJ DEP's "Assessment Unit-Cause Combinations Removed from 303(d) List" does not provide the basis and supporting data for proposed delistings, see: http://www.state.nj.us/dep/wms/bwqsa/2012_draft_delisted_waters.pdf. With respect to Barnegat Bay, that document merely states assessment unit # NJ02040301050050-01, described as "Barnegat Bay North, above Rt. 37 bridge", is proposed to be removed for "cause" dissolved oxygen. The monitoring sites for this assessment unit are numerically identified, but the underlying data for those sites is not provided by DEP. I hereby request the data in support of the proposed Barnegat Bay delisting noted above, as well as all others. (PEER)

61. Comment: There are a number of quarterly grab samples collected from 2009-2010 in the southern portion of the Bay that fall below the 4 mg/l dissolved oxygen threshold for SE-1 waters. It is not clear why these areas are not on the 303(d) list for dissolved oxygen impairments. Because the dissolved oxygen levels at the time the grab samples are typically collected (late morning to mid-day) are not at the daily minimum, these departures are likely conservative in number. Is there substantial contravening evidence that suggests that these AUs should not be listed for DO impairment? (BBP)

Response to 55 thru 61: As stated in the 2012 Methods Document, the Department’s assessment of water quality in the Barnegat Bay for the 2012 Integrated Report would be based primarily on concentrations of dissolved oxygen and levels of pathogenic bacteria. A thorough review of all readily available DO data, including the extensive data collected in Barnegat Bay and the tributaries throughout 2011, resulted in changes to the 303(d) List for only two AUs: the proposed delist of DO in NJ02040301050050-01 Barnegat Bay North (above Rt 37 bridge) and the proposed listing of DO in NJ02040301130090-01 Manahawkin/LEH Bay (MillCrk- TurtleCove).

The reason for delisting DO in NJ02040301050050-01 Barnegat Bay North (above Rt 37 bridge) was revised from “Applicable WQS attained; reason for recovery unspecified” to “Applicable WQS attained; original basis for listing was incorrect.” In response to the comments above, the Department reassessed the proposed delisting and determined that DO was incorrectly listed in 2006 based on exceedances at Stations 1627, 1605A, 1618A, and 1629B; however, only two of those samples actually exceeded the SE1 criterion for DO, one sample each collected in 1999 at Stations 1605A and 1629B. (Values between 4.3 and 4.9 were incorrectly assessed using the FW2 criterion for DO). The remaining 197 samples collected at these four stations between 1999 and 2010 all meet the SE1 criterion for DO. In addition, new data collected at Stations 1609B, 1617E, BB01, BB02, BB03 all meet the SE1 criterion for DO. Buoy data from Monmouth University was invalidated and removed from the assessment due to technical problems with the equipment.

The Department also proposed to add DO in NJ02040301130090-01 Manahawkin/LEH Bay (MillCrk- TurtleCove) based on 2007 diurnal DO data at Station MB. This AU/pollutant combination remains on the 2012 303(d) List.

The Department continues to work on a comprehensive study of the Barnegat Bay Estuary and its tributaries that will provide water quality data to determine the locations and extent of water quality impairment. Additional information about this effort is available on the Department’s Web site at <http://www.state.nj.us/dep/barnegatbay/planwqstandards.htm>. The Department expects the water quality assessment of the Barnegat Bay to be completed by 2013.

62. Comment: NJDEP should recognize and use its authority to declare Barnegat Bay as impaired by nitrogen, as an entire waterbody, not segmented. The preponderance of the evidence establishing the Barnegat Bay as impaired has been established and available to the public and the media. The sources of information available on the impacts of your decision are voluminous, including the award winning Asbury Park Press series entitled: “Barnegat Bay Under Stress” (August 6, 2010) and Brick Patch Article entitled: “Township to Take Lead in Cleaning Up Rotting Seaweed” (July 20, 2011). We urge you to weigh all the evidence supporting designating the Bay as a whole, impaired for nitrogen pollution. (SBB).

63. Comment: There is substantial scientific information which has documented the decline and current impaired condition of Barnegat Bay. At present, the bay's condition appears to be currently in violation of the State's narrative nutrient standard. Summarizing the science that has been conducted in the bay and watershed, the State of the Bay Report 2011 (SOTB) documents "re-occurring algal blooms" that are symptoms of eutrophication, the presence of harmful algal bloom (HAB) species, and blooms of the harmful brown-tide species *Aureococcus anophagefferens* that have negative impacts on shellfish. High macroalgal densities have occurred that have smothered sea grass habitat. The decline of shellfish and eelgrass in the bay are well documented in the SOTB. Based on the above we encourage the NJDEP to list the main body of the bay as nutrient impaired and in violation of the narrative criteria. (BBP)

64. Comment: DEP has acted arbitrarily and against the weight of the readily available evidence in failing to include the Barnegat Bay on its 303(d) List. The data and scientific studies currently available to DEP demonstrate that Barnegat Bay is in violation of the water quality criteria applicable to the Bay and is not attaining its designated uses. As such, DEP is without a sufficient reason for failing to place the Barnegat Bay on its 303(d) List and implementing the development of a Total Maximum Daily Load for the Bay, and is in violation of its duty under the Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

The studies and reports cited in these comments demonstrate that the eutrophication of Barnegat Bay is causing the Bay to violate the applicable SWQS and also fail to meet its designated uses, and is therefore impaired under the Clean Water Act and New Jersey's SWQS for nutrients. The attached comments demonstrate that Barnegat Bay is experiencing severe eutrophication as the result of high levels of nitrogen resulting from development, and is therefore in violation of the applicable SWQS. For instance, these comments focus particularly on the harms done to seagrass in the Bay, and to the other species that rely on healthy seagrass beds for their own ecology, because the scientific data overwhelmingly and consistently indicates that estuarine seagrass declines are caused by excessive nitrogen inputs. This impairment for the designated use for aquatic life alone is sufficient to require designation of the Bay as impaired for nitrogen. However, it is very likely that excessive nitrogen is causing additional harms to the other designated uses of the Bay. (EELC)

65. Comment: The narrative nutrient standard for marine waters adopted in 2011 requires that DEP assess these waters where information is available or provide justification for not evaluating this standard. For example, information is readily available to assess Barnegat Bay yet the Bay's nutrient impairment status is not included on any of these lists. Continuing to ignore nutrient problems in marine waters is not acceptable. (COA)

66. Comment: The recent findings of the Rutgers Institute of Marine and Coastal Sciences (IMCS) on the declining ecological indicators in the Barnegat Bay should be used to declare the entire Bay as impaired on the 303(d) list and begin the TMDL process. This report contains the needed data to justify such an impairment designation for the Bay. Ongoing studies must no longer be used as an excuse to delay an impairment designation for Barnegat Bay and the watershed, and delaying any TMDL, cleanup, or other action. (NJSC)

- 67. Comment:** The DEP appears to have made an incorrect determination for delisting, for example: the proposed delisting of the Bay segments contradicts other data (i.e. Kennish, Rutgers, et al) that clearly demonstrate impairment for aquatic life support, human use, and even DO. (PEER)
- 68. Comment:** Under the authority of the Clean Water Act, it is the duty and responsibility of the State of New Jersey to maintain swimmable, fishable waters. The DEP is the agency that bares the full responsibility of ensuring that the Bay will be swimmable and fishable. That burden affects everything from home values, industry, jobs, food supply, recreation, history, culture, and morality. The citizens of New Jersey rely on the DEP to act responsibly. (SBB)
- 69. Comment:** NJDEP should consider the weight of all the information available (empirical, anecdotal, and scientific) to qualify its determination of the status of water quality in Barnegat Bay. (SBB)
- 70. Comment:** Barnegat Bay will never be saved if imprudent development is not restrained. You have the ability to change history. (SBB)

Response to 62 thru 70: The Department agrees with all of the commenters that observed effects in the Bay, such as seagrass declines, algal blooms, high macroalgal densities, shellfish declines, and sea nettle population rises, have not been scientifically validated. Studies are ongoing to help us better understand the various stressors and their relative importance in contributing to observed conditions in the Bay. In addition to nutrients, such as nitrogen, other stressors may include reduced light penetration, boat traffic, circulation patterns, temperature and salinity levels, sediment contamination, over-harvesting of shellfish, and habitat changes. Although excessive nitrogen has been reported throughout the media as the cause for Barnegat Bay’s degraded condition, no scientific studies have concluded that nitrogen is the only or even the primary cause for current conditions in the Bay. It is important to recognize that the purpose of the 303(d) list is to identify those waters that are impaired as the result of one or more pollutants, not as a result of generalized “pollution,” such as habitat change, boating or overfishing.

The Department is currently sponsoring studies of the Barnegat Bay that will help us better understand the physical, chemical, and biological processes in the estuary in order to understand the role played by nutrients and other factors in manifesting the observed conditions in the Bay. These studies will investigate various biotic trophic levels and communities for condition and relationship to stressors, including diatoms, phytoplankton, zooplankton, benthic organisms, clams, crabs, and fish. There are also studies underway to evaluate the possible causes for increased abundance of sea nettles, the role of marshes and wetlands, and the effect of conservation zones. More details about these and other studies in the Barnegat Bay sponsored by the Department can be found on the Department’s Web site at <http://www.nj.gov/dep/barnegatbay/plan-research.htm>. The Department is also conducting comprehensive monitoring and modeling work, which will be used to establish linkages between pollutant loadings, water quality, and biotic community response, using information from the research projects, where feasible. More details about this work can be found on the Department’s Web site at <http://www.nj.gov/dep/barnegatbay/plan-wqstandards.htm>. The Department will integrate the information acquired from the biologic community studies, along with monitoring and modeling work, to assess the degree to which the Bay meets numeric and narrative water quality criteria and supports designated uses.

Many of the commenters identify undesirable conditions that they believe should form the basis for listing Barnegat Bay on the 303(d) list with respect to the narrative nutrient criteria. The current Methods Document does not include the means to interpret and apply the narrative nutrient criteria in estuarine waters. Therefore, with the exception of dissolved oxygen, the Department has no scientific basis for concluding that water quality standards are exceeded in the Bay. Through the studies identified above, the Department is working to develop thresholds and indicators for various biological communities as well as establishing cause/response relationships so that the means to interpret and apply the narrative nutrient criteria in estuarine waters can be determined.

The Department's work to understand the causes of observed conditions is important so that the most effective restoration actions can be implemented. Nevertheless, the Department is not waiting until nutrient thresholds, biological indexes and cause/response relationships are established to begin working on improving conditions in Barnegat Bay. Common sense actions that will advance the overall objective of restoring the Bay have already been undertaken. These include establishing a statewide fertilizer law, retrofitting stormwater basins to promote recharge and reduce nutrients, and acquiring open space. The Water Quality Monitoring Project for Barnegat Bay will be used to develop and calibrate a model that can then be used to simulate future conditions. Once the model is available, the Department will be able to evaluate various actions and, if the cause/response relationships are clearly defined, we should be able to determine the success of the selected actions.

Water Quality Standards and Sampling Protocols

71. Comment: The Sierra Club is very concerned with the DEP's proposed changes to the standards for listing on the 303(d) list under the Clean Water Act. The latest Integrated Water Quality Report shows the number of impaired waterways in New Jersey is growing at an alarming rate, and we should be increasing protections for our waterways and cleaning up pollution. Instead, the proposed changes would weaken the standards for inclusion on the list. Delisting numerous rivers from the 303(d) list by changing the criteria will make it harder to compare data from year to year. Waterbodies would not be removed because they are no longer impaired, but because the criteria changed. Changing the criteria does not mean the waterway is clean. Pollution will still be impacting those ecological and human communities and should therefore remain on the list. The proposed changes are a major rollback to clean water protections and can have significant impacts on public health. We urge the Department to reject these changes and keep the current criteria in place. (NJSC)

Response: Changes to the water quality criteria included at N.J.A.C. 7:9B are based on up-to-date, scientific information and are accomplished through formal rulemaking. The Department must also submit the adopted water quality standards to EPA for formal approval (see EPA's Web site at <http://water.epa.gov/scitech/swguidance/standards/cwa303faq.cfm>). Once new/revised criteria are adopted, water quality data are re-assessed based on the adopted criteria. Waterbodies that meet the new criteria are not impaired and should not be included on the 303(d) list.

The Department adopted revised temperature and pH criteria, which were approved by EPA on June 1, 2010. The Department has not proposed any subsequent changes to the applicable water quality criteria. However, after publishing the draft 2012 303(d) list, the Department reviewed 303(d) listings that were carried forward from previous listing cycles, to determine if the available data meet the new pH and/or temperature criteria adopted in 2010. If the Department determined that the new criteria

were met, the pollutant/waterbody combination was delisted using the delisting code: “applicable WQS attained, due to change in WQS”. More information is provided in the revised “Justification for Delisted Waters” under Section VIII. The Department has listed and delisted pollutant/waterbody combinations based on current water quality criteria and the assessment methods. Delisting pollutant/waterbody combinations that meet current water quality criteria allows the Department to focus its resources on the real water quality problems that remain.

- 72. Comment:** Testing should be done below roadway crossing to determine the amount of runoff pollution that is impacting the stream. Testing above roadway crossings will exclude that data. Further, testing should not be done outside the mixing zone as this allows the discharge to fully merge into the main body, resulting in diluted readings. (NJSC)

Response: Sampling protocols for the Integrated List are established based on the latest scientific procedures and best practices. The purpose of ambient water quality sampling is to determine overall ambient water quality conditions statewide. Monitoring stations are selected in locations that are representative of overall water quality in a subwatershed - not to find worst-case conditions. Other types of monitoring programs are designed to verify local water quality problems and their sources, such as through a NJPDES water quality study, TMDL study, or Section 319(h) grant watershed study.

The SWQS require that water quality criteria are met outside of the regulatory mixing zone. Regulatory mixing zones provide for the initial dispersion of the effluent in a receiving waterbody at the discharge point; therefore, they are not used to determine ambient surface water quality conditions. Mixing zones for point sources are regulated by the Department’s Division of Water Quality, which issues permits and monitors compliance of point source dischargers.

- 73. Comment:** It is reasonable to assume that the original intent of the C1 designation for Barnegat Bay included Manahawkin Bay and Little Egg Harbor Bay under the definition of “all waters of the bay”. With our current understanding of the hydrological interconnectedness of the bay and the NJDEP’s increased efforts, it seems odd to hold different parts of the bay to different water quality standards given that: (1) the designated uses of the waterbodies are similar, and (2) neither the people that use the bay nor the federal and state programs for the bay’s protection do not differentiate actions between the segments. (BBP)

Response: All Category One waters are identified in the SWQS at N.J.A.C. 7:9B-1.15. Barnegat Bay is listed in the SWQS as Category One at N.J.A.C. 7:9B-1.15(c). While Barnegat Bay, Manahawkin Bay and Little Egg Harbor Bays are one continuous waterbody, they are identified by separate names. The Department recognized Barnegat Bay as an exceptional waterbody and provided a Category One designation in 1985. Manahawkin Bay and Little Egg Harbor Bay are not designated as Category One waters under 1.15(c). If the Department finds Manahawkin Bay or Little Egg Harbor Bay as exceptional waters in the future, a Category One designation may be promulgated.

Total Maximum Daily Loads (TMDLs)

74. Comment: For several listing cycles, NJDEP identified a large number of high priority waters on its two-year schedule for TMDL development. EPA strongly encourages NJDEP to complete these TMDLs and submit them to USEPA before the next listing cycle. (USEPA)

Response: Identification of waters on the two-year priority list for TMDL development represents the Department's best estimate, at the time the list is submitted, of which TMDL development efforts will be technically and administratively completed within the timeframe of the relevant list. Because of the prospective nature of the decision to identify waters for TMDL development, unanticipated delays can occur. The majority of the waters identified for TMDLs on the 2008 and 2010 lists that were not submitted to USEPA within the anticipated timeframe were part of a comprehensive, regional, multi-parameter water quality study that was highly complex and involved an extensive peer review and stakeholder process. USEPA has been included in several of the interim peer reviews and stakeholder meetings and has been advised as to progress as we have moved towards completion of this significant, state of the art modeling effort. These waters remain listed as high priority and scheduled for TMDL development on the 2012 two-year list. With nearly all issues resolved at this time, the Department believes that the TMDLs for these waters can be completed in this listing cycle.

75. Comment: In light of the recognition of the bay as a federal and state priority, the Barnegat Bay waterbodies and/or tributaries should be identified as priorities. Such a priority designation could potentially make use of and build upon other federal, state, and local investment and commitments in the bay. A TMDL decision is critical for other regulatory processes and subsequent decisions to reduce excessive nutrient loading and other pollution from non-point sources and eutrophication problems in marine waters. (BBP)

Response: It was suggested that the Department prioritize TMDL development for the Bay. The Governor's 10 Point Plan for Barnegat Bay, which includes the multi-million dollar studies underway to understand the causes of undesirable conditions, is a clear indication that the Department has assigned a high priority to understanding and then solving the problems in the Bay. In terms of the 303(d) list, the "high" priority is reserved for those impairments for which the Department expects to develop a TMDL within the listing cycle, in this case by 2014. Except for dissolved oxygen, it has not been determined if other pollutants should be included on the 303(d) list. The studies underway will inform the Department as to which pollutants should be listed, and therefore under consideration for TMDL development. In the meantime, with respect to dissolved oxygen, the studies underway would need to be completed before a TMDL could be developed for this or any pollutant. The current schedule for completion of the studies extends beyond the current listing cycle, such that assigning a "high" priority would be inappropriate at this time. As stated above, the lack of this designation has not prevented the Department from taking action to restore the Bay.

76. Comment: DEP must use regulations to implement non-point source control measures to reduce impairment listings. DEP is not effectively implementing TMDLs for non-point source pollution, as evident by numerous pathogen listings that remain years after TMDLS have been approved. Many of these TMDLs also still need to be formally adopted. There are stormwater regulations and Water Quality Management Planning regulations that TMDLs are designed to inform but are not being used. Other states are using regulations with TMDL implementation plans to make pollution reductions.

DEP has authority to impose stricter regulations on stormwater and non-point pollution; and DEP needs to exercise it. (COA)

77. Comment: We are concerned about the continued pathogen impairments and the effectiveness of these TMDLs in making load reductions. Several of the TMDLs that were developed were done so before the MS4 program was well established; moreover, they do not place significant, or if any, additional regulatory requirements on stormwater plans and permits, or WQMPs, or other means to reduce non-point source loadings. How can the regulatory process be used to ensure reductions are indeed made? Are there time limits that AUs can be on Sublist 4? How is Sublist 4 prioritized with respect to the 303(d) list for additional action? (BBP)

Response to Comments 76 and 77: The comments concerning stormwater and TMDL implementation plans are beyond the scope of the 2012 303(d) List. Questions and concerns about stormwater permit implementation should be addressed to the Department’s Division of Water Quality. Waters that have an established TMDL but do not yet meet WQS will remain assessed as “Not Supporting” the applicable designated use on the Integrated List of Waters (USEPA’s Category 4A). There are no limits on how long a waterbody may remain on “Category 4A”. The factors considered in prioritizing 303(d) listed waters for TMDL development are found in the [2012 Methods Document](#), Section 8.0.

78. Comment: DEP needs to finalize and implement Harbor TMDLs. High priority should be assigned for areas identified as impaired in the Hudson Estuary, such as Sandy Hook and Raritan Bays for pathogens, and these TMDLs should be on the DEP’s two year priority TMDL list. The TMDL process has been underway for a decade for pathogens, dissolved oxygen, and toxins, and much work has already been done in developing these TMDLs through the Hudson Estuary Program. These TMDLs should be finalized and be implemented within two years. (COA)

Response: The Department continues to list the NY-NJ Harbor on the 303(d) list and continues to work toward establishing TMDLs for the Harbor. The Department’s efforts to protect and restore waterways and habitats in the estuary involves participating in the NY-NJ Harbor and Estuary Program (HEP) including the Contaminant Assessment and Reduction Project (CARP), a comprehensive model being used to develop TMDLS for toxics. More information about the programs and actions underway in the harbor through HEP can also be found on their website <http://www.harborestuary.org>. In addition, the Department’s Division of Water Quality implements programs that address stormwater, combined sewer overflows, and point sources in the Harbor.

Agency-Initiated Changes

1. The Department added the following AU/pollutant combinations to the final 2012 303(d) List as a result of information provided and/or reassessment conducted in response to the public comment process or review by USEPA. Use assessment outcomes were changed, as applicable, in the final 2012 Integrated List.

Assessment Unit	AU Name	Parameter
02030103010020-01	Primrose Brook	Turbidity

02030103020010-01	Whippany R (above road at 74d 33m)	Temperature, water
02030103050030-01	Pequannock R (above OakRidge Res outlet)	Escherichia coli
02030103050050-01	Pequannock R (Charlotteburg to OakRidge)	Oxygen, Dissolved
02030103050080-01	Pequannock R (below Macopin gage)	Temperature, water
02030103150030-01	Passaic R Lwr (Second R to Saddle R)	Total Suspended Solids (TSS)
02030103180030-01	Hackensack R (Ft Lee Rd to Oradell gage)	pH
02030103180050-01	Hackensack R (Bellmans Ck to Ft Lee Rd)	Heptachlor epoxide
02030104010010-01	Newark Airport Peripheral Ditch	Heptachlor epoxide
02030104010010-01	Newark Airport Peripheral Ditch	Hexachlorobenzene
02030104020020-01	Elizabeth R (Elizabeth CORP BDY to I-78)	Lead
02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Benzo(a)pyrene (PAHs)
02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Lead
02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Phosphorus (Total)
02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	Total Dissolved Solids
02030104050100-01	Rahway River (below Robinsons Branch)	Heptachlor epoxide
02030104050100-01	Rahway River (below Robinsons Branch)	Hexachlorobenzene
02030104050100-01	Rahway River (below Robinsons Branch)	Oxygen, Dissolved
02030104070100-01	Poricy Bk/Swimming R(below SwimmingR Rd)	Oxygen, Dissolved
02030104090040-01	Shark River (above Remsen Mill gage)	Arsenic
02030104090080-01	Wreck Pond Brook (below Rt 35)	Arsenic
02030105050050-01	Pottersville trib (Lamington River)	Temperature, water
02030105060030-01	Raritan R NB (incl McVickers to India Bk)	Oxygen, Dissolved
02030105070030-01	Raritan R NB (below Rt 28)	pH
02030105090010-01	Stony Bk (above 74d 49m 15s)	Escherichia coli
02030105100130-01	Bear Brook (below Trenton Road)	Phosphorus (Total)
02030105120050-01	Middle Brook EB	Phosphorus (Total)
02030105120130-01	Green Bk (below Bound Brook)	Oxygen, Dissolved
02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Phosphorus (Total)
02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Total Suspended Solids (TSS)
02030105130070-01	Lawrence Bk (below Milltown/Herberts br)	Arsenic
02040105140020-01	Pohatcong Ck (Brass Castle Ck to Rt 31)	pH
02040105140030-01	Pohatcong Ck (Edison Rd-Brass Castle Ck)	pH
02040105140050-01	Pohatcong Ck (Merrill Ck to Edison Rd)	pH
02040105230010-01	Assunpink Ck (above Assunpink Lake)	Escherichia coli
02040201050020-01	Lahaway Ck (Allentwn/NE Road-Prospertown)	Arsenic
02040201100050-01	Assiscunk Ck (Neck Rd to Jacksonville rd)	Escherichia coli
02040202020030-01	Rancocas Ck NB (incl Mirror Lk-GauntsBk)	Arsenic
02040202030070-01	McDonalds Branch	Arsenic
02040202040010-01	Rancocas Ck NB (Pemberton br to NL dam)	Copper
02040202040030-01	Rancocas Ck NB (Rt 206 to Pemberton br)	Copper
02040202040030-01	Rancocas Ck NB (Rt 206 to Pemberton br)	Lead
02040202060070-01	Little Creek (above Bear Swamp River)	Arsenic
02040202060090-01	Little Creek (below Bear Swamp River)	Escherichia coli
02040202070030-01	Rancocas Ck SB (below Rt 38)	Oxygen, Dissolved

02040202080020-01	Rancocas Ck (Martins Beach to NB/SB)	Phosphorus (Total)
02040202090010-01	Swede Run	Escherichia coli
02040202120090-01	Newton Creek (LDRV-Kaighn Ave to LT Ck)	Phosphorus (Total)
02040206030040-01	Salem R (CoursesLanding to CountyHomeRd)	Turbidity
02040206030060-01	Salem R (39-40-14 dam-CoursesLndg)/Canal	pH
02040206030060-01	Salem R (39-40-14 dam-CoursesLndg)/Canal	Total Suspended Solids (TSS)
02040206070060-01	Stow Creek (Canton Road to Jericho Road)	Oxygen, Dissolved
02040206100040-01	Cedar Creek (above Rt 553)	Arsenic
02040206100050-01	Cedar Creek (below Rt 553)	Turbidity
02040206140030-01	Green Branch / Endless Branch	Arsenic
02040206170050-01	Buckshutem Creek (below Rt 555)	Arsenic
02040206190030-01	Manumuskin River (below Rt 49)	Arsenic
02040206200020-01	Muskee Creek	Arsenic
02040206220030-01	Dennis Creek (Jakes Landing Rd to Rt 47)	Arsenic
02040301020010-01	Metedeconk R NB (above I-195)	Lead
02040301020030-01	Haystack Brook	Arsenic
02040301030010-01	Metedeconk R SB (above I-195 exit 21 rd)	Lead
02040301060020-01	Toms River (74-22-30 rd to FrancisMills)	Arsenic
02040301060050-01	Dove Mill Branch (Toms River)	Arsenic
02040301070040-01	Ridgeway Br (below Hope Chapel Rd)	Arsenic
02040301070050-01	Blacks Branch (above 74d22m05s)	Cause Unknown
02040301070060-01	Old Hurricane Brook (above 74d22m30s)-	Cause Unknown
02040301070090-01	Union Branch (below Blacks Br 74d22m05s)	Arsenic
02040301080050-01	Wrangel Brook (below Michaels Branch)	Arsenic
02040301130040-01	Cedar Run	Arsenic
02040301160060-01	Sleeper Branch (Rt 206 to Tremont Ave)	Arsenic
02040301160120-01	Great Swamp Branch (above Rt 206)	Oxygen, Dissolved
02040301170010-01	Hammonton Creek (above 74d43m)	Copper
02040301170020-01	Hammonton Creek (Columbia Rd to 74d43m)	Copper
02040301170030-01	Hammonton Creek (below Columbia Rd)	Phosphorus (Total)
02040301170060-01	Mullica River (Rt 563 to Batsto River)	Arsenic
02040301190070-01	Wading River WB (Oswego R to Jenkins Rd)	Phosphorus (Total)
02040301200050-01	Bass River EB	Arsenic
02040301200110-01	Mattix Run (Nacote Creek)	Arsenic
02040302030060-01	GEHR (Piney Hollow Rd to Broad Lane rd)	Arsenic
02040302040070-01	Hospitality Br (below Piney Hollow Rd)	Arsenic
02040302040120-01	Deep Run (GEHR)	Arsenic
02040302050040-01	South River (below 39d26m15s)	Arsenic
02040302050040-01	South River (below 39d26m15s)	pH
02040302050050-01	Gravelly Run (above Gravelly Run road)	Arsenic
02040302050080-01	Stephen Creek (GEHR)	Arsenic
02040302070040-01	Tuckahoe River (Rt 49 to 39d19m52s)	Arsenic

2. The Department removed the following AU/pollutant combinations from the final 2012 303(d) List as a result of information provided or reassessment conducted in response to the public comment process or review by USEPA. Use assessment outcomes were changed, as applicable, in the final 2012 Integrated List. The reason for each additional delisting is provided in the final 2012 Delisted Waters and the revised Justification for Delisted Waters document.

Assessment Unit	AU Name	Parameter
02020007010020-01	Wallkill R (Ogdensburg to SpartaStation)	Cause Unknown
02020007010020-01	Wallkill R (Ogdensburg to SpartaStation)	Temperature, water
02020007010040-01	Wallkill R (Hamburg SW Bdy to Frkln Pnd)	Cause Unknown
02020007010040-01	Wallkill R(Hamburg SW Bdy to Frkln Pnd)	Temperature, water
02020007010080-01	Wallkill R(Franklin Pond to Ogdensburg)	Temperature, water
02020007040010-01	Black Ck(above/incl G.Gorge Resort trib)	Temperature, water
02020007040050-01	Wawayanda Creek & tribs	Temperature, water
02030103010070-01	Passaic R Upr (Dead R to Osborn Mills)	Cyanide
02030103010080-01	Dead River (above Harrisons Brook)	Total Suspended Solids (TSS)
02030103010110-01	Passaic R Upr (Plainfield Rd to Dead R)	Cyanide
02030103010120-01	Passaic R Upr (Snyder to Plainfield Rd)	Cyanide
02030103010130-01	Passaic R Upr (40d 45m to Snyder Ave)	Cyanide
02030103010150-01	Passaic R Upr (Columbia Rd to 40d 45m)	Cyanide
02030103010150-01	Passaic R Upr (Columbia Rd to 40d 45m)	Oxygen, Dissolved
02030103010190-01	Slough Brook	Oxygen, Dissolved
02030103020050-01	Whippany R (Malapardis to Lk Pocahontas)	pH
02030103050010-01	Pequannock R (above Stockholm/Vernon Rd)	Cause Unknown
02030103050050-01	Pequannock R (Charlotteburg to OakRidge)	Cause Unknown
02030103070070-01	Wanaque R/Posts Bk (below reservior)	Cause Unknown
02030103070080-01	Ringwood Creek	Oxygen, Dissolved
02030103070080-01	Ringwood Creek	Temperature, water
02030103120020-01	Peckman River (below CG Res trib)	pH
02030103120070-01	Passaic R Lwr (Fair Lawn Ave to Goffle)	Cyanide
02030103120080-01	Passaic R Lwr (Dundee Dam to F.L. Ave)	Cyanide
02030103120090-01	Passaic R Lwr (Saddle R to Dundee Dam)	Cyanide
02030103120100-01	Passaic R Lwr (Goffle Bk to Pompton R)	Ammonia (Un-ionized)
02030103120100-01	Passaic R Lwr (Goffle Bk to Pompton R)	Cyanide
02030103120110-01	Passaic R Lwr (Goeffle Bk to Pump stn)	Cyanide
02030103140040-01	Saddle River (above Ringwood gage)	Temperature, water
02030103140050-01	Saddle River (Rt 4 to Rt 17)	Total Suspended Solids (TSS)
02030103150020-01	Second River	Total Dissolved Solids
02030103150030-01	Passaic R Lwr (Second R to Saddle R)	Ammonia (Un-ionized)
02030103150030-01	Passaic R Lwr (Second R to Saddle R)	Enterococcus
02030103150050-01	Passaic R Lwr (Nwk Bay to 4th St brdg)	Arsenic
02030103150050-01	Passaic R Lwr (Nwk Bay to 4th St brdg)	Oxygen, Dissolved
02030103170010-01	Pascack Brook (above Westwood gage)	Total Dissolved Solids
02030103180010-01	Coles Brook / Van Saun Mill Brook	Chloride

02030103180010-01	Coles Brook / Van Saun Mill Brook	Total Dissolved Solids
02030103180040-01	Overpeck Creek	Cadmium
02030103180040-01	Overpeck Creek	Chloride
02030103180040-01	Overpeck Creek	Lead
02030103180040-01	Overpeck Creek	pH
02030103180040-01	Overpeck Creek	Total Dissolved Solids
02030103180050-01	Hackensack R (Bellmans Ck to Ft Lee Rd)	Ammonia (Un-ionized)
02030103180050-01	Hackensack R (Bellmans Ck to Ft Lee Rd)	Oxygen, Dissolved
02030103180050-01	Hackensack R (Bellmans Ck to Ft Lee Rd)	Turbidity
02030103180060-01	Berrys Creek (above Paterson Ave)	Ammonia (Un-ionized)
02030103180060-01	Berrys Creek (above Paterson Ave)	Oxygen, Dissolved
02030103180060-01	Berrys Creek (above Paterson Ave)	Turbidity
02030103180070-01	Berrys Creek (below Paterson Ave)	Ammonia (Un-ionized)
02030103180070-01	Berrys Creek (below Paterson Ave)	Oxygen, Dissolved
02030103180070-01	Berrys Creek (below Paterson Ave)	Turbidity
02030103180080-01	Hackensack R (Rt 3 to Bellmans Ck)	Ammonia (Un-ionized)
02030103180080-01	Hackensack R (Rt 3 to Bellmans Ck)	Oxygen, Dissolved
02030103180080-01	Hackensack R (Rt 3 to Bellmans Ck)	Turbidity
02030103180100-01	Hackensack R (below Amtrak bridge)	pH
02030103180100-01	Hackensack R (below Amtrak bridge)	Turbidity
02030104050010-01	Rahway River WB	Chloride
02030104050020-01	Rahway River EB	Total Dissolved Solids
02030104070010-01	Hop Brook	Temperature, water
02030104070020-01	Willow Brook	pH
02030104080050-01	Long Branch direct Atlantic drainage	Mercury in Fish Tissue
02030104080050-01	Long Branch direct Atlantic drainage	Oxygen, Dissolved
02030104080050-01	Long Branch direct Atlantic drainage	PCB in Fish Tissue
02030104090050-01	Jumping Brook (Monmouth Co)	pH
02030104090090-01	Atl drainage (Shark R - Deal Lk)	Chlordane in Fish Tissue
02030104090090-01	Atl drainage (Shark R - Deal Lk)	Mercury in Fish Tissue
02030104090090-01	Atl drainage (Shark R - Deal Lk)	Oxygen, Dissolved
02030104090090-01	Atl drainage (Shark R - Deal Lk)	PCB in Fish Tissue
02030104100030-01	Manasquan R (West Farms Rd to Rt 9)	Temperature, water
02030104100050-01	Manasquan R (gage to West Farms Rd)	Temperature, water
02030104910010-01	Raritan Bay (west of Thorns Ck)	Enterococcus
02030104910010-01	Raritan Bay (west of Thorns Ck)	Oxygen, Dissolved
02030104920010-01	Atl Coast(Sandy H to Navesink R)	Mercury in Fish Tissue
02030104920020-01	AtlCoast(Navesink R to WhalePond)	Mercury in Fish Tissue
02030104930010-01	Atl Coast(Whale Pond to Shark R)	Mercury in Fish Tissue
02030104930020-01	Atl Coast (Shark R to Manasquan)	Mercury in Fish Tissue
02030105010070-01	Raritan R SB(StoneMill gage to Califon)	Temperature, water
02030105020030-01	Mulhockaway Creek	Temperature, water
02030105020060-01	Cahepoulin Creek	Temperature, water
02030105020100-01	Raritan R SB(Three Bridges-Prescott Bk)	Total Suspended Solids (TSS)

02030105050030-01	Lamington R (Furnace Rd to Hillside Rd)	Temperature, water
02030105050040-01	Lamington R(Pottersville gage-FurnaceRd)	Temperature, water
02030105060050-01	Peapack Brook (above/incl Gladstone Bk)	Oxygen, Dissolved
02030105060050-01	Peapack Brook (above/incl Gladstone Bk)	Temperature, water
02030105070030-01	Raritan R NB (below Rt 28)	Phosphorus (Total)
02030105100070-01	Cranbury Brook (above NJ Turnpike)	Cause Unknown
02030105100090-01	Cranbury Brook (below NJ Turnpike)	Cause Unknown
02030105100120-01	Bear Brook (above Trenton Road)	Cause Unknown
02030105110060-01	Rock Brook (above Camp Meeting Ave)	Cause Unknown
02030105120030-01	Stony Brook (North Plainfield)	Total Dissolved Solids
02030105120130-01	Green Brook (below Bound Brook)	Sulfates
02030105120180-01	Middle Brook	Phosphorus (Total)
02030105120180-01	Middle Brook	Total Suspended Solids (TSS)
02040104090030-01	Shimers Brook	Escherichia coli
02040104090030-01	Shimers Brook	Oxygen, Dissolved
02040104150010-01	Flat Brook (Tillman Brook to Confluence)	Temperature, water
02040104150020-01	Flat Brook (below Tillman Brook)	Temperature, water
02040104240010-01	Van Campens Brook	pH
02040105030010-01	Swartswood trib(41-06-06 thru Lk Owassa)	Phosphorus (Total)
02040105030010-01	Swartswood trib(41-06-06 thru Lk Owassa)	Temperature, water
02040105030020-01	Swartswood Lake and tribs	Temperature, water
02040105090030-01	Pequest R (Furnace Bk to Cemetary Road)	Total Suspended Solids (TSS)
02040105090060-01	Pequest R (below Furnace Brook)	pH
02040105090060-01	Pequest R (below Furnace Brook)	Temperature, water
02040105140020-01	Pohatcong Ck (Brass Castle Ck to Rt 31)	Phosphorus (Total)
02040105140020-01	Pohatcong Ck (Brass Castle Ck to Rt 31)	Temperature, water
02040105140030-01	Pohatcong Ck (Edison Rd-Brass Castle Ck)	Temperature, water
02040105140050-01	Pohatcong Ck (Merrill Ck to Edison Rd)	Temperature, water
02040105140060-01	Pohatcong Ck (Springtown to Merrill Ck)	Phosphorus (Total)
02040105150050-01	Lubbers Run (below Dallis Pond)	Temperature, water
02040105150070-01	Musconetcong R(Waterloo to/incl WillsBk)	pH
02040105150070-01	Musconetcong R(Waterloo to/incl WillsBk)	Temperature, water
02040105150110-01	Musconetcong R(Waterloo area)	pH
02040105150110-01	Musconetcong R(Waterloo area)	Temperature, water
02040105160010-01	Musconetcong R (Hances Bk thru Trout Bk)	Temperature, water
02040105160020-01	Musconetcong R (Changewater to HancesBk)	Temperature, water
02040105160030-01	Musconetcong R (Rt 31 to Changewater)	Temperature, water
02040105160040-01	Musconetcong R (75d 00m to Rt 31)	Temperature, water
02040105160050-01	Musconetcong R (I-78 to 75d 00m)	Temperature, water
02040105160060-01	Musconetcong R (Warren Glen to I-78)	Temperature, water
02040105160070-01	Musconetcong R (below Warren Glen)	Temperature, water
02040105170020-01	Hakihokake Creek	Fecal Coliform
02040105170040-01	Nishisakawick Creek (above 40d 33m)	pH
02040105170050-01	Nishisakawick Creek (below 40d 33m)	Cause Unknown

02040105200020-01	Lockatong Ck (Milltown to Rt 12)	Turbidity
02040105200030-01	Lockatong Ck (below Milltown) incl UDRV	Escherichia coli
02040105200060-01	Wickecheoke Creek (below Locktown)	pH
02040105240010-01	Shabakunk Creek	Cause Unknown
02040105240050-01	Little Shabakunk Creek	Oxygen, Dissolved
02040105240060-01	Assunpink Creek (below Shipetaukin Ck)	Oxygen, Dissolved
02040105240060-01	Assunpink Creek (below Shipetaukin Ck)	pH
02040201040060-01	North Run (above Wrightstown bypass)	Total Suspended Solids (TSS)
02040201040070-01	Crosswicks Ck(NewEgypt to/incl NorthRun)	Total Suspended Solids (TSS)
02040201090020-01	Crafts Creek (below Rt 206)	Oxygen, Dissolved
02040202080030-01	Mill Creek (Willingboro)	pH
02040202110030-01	Cooper River (above Evesham Road)	Sulfates
02040202110030-01	Cooper River (above Evesham Road)	Total Dissolved Solids
02040202110040-01	Cooper R (Wallworth gage to Evesham Rd)	Turbidity
02040202110060-01	Cooper River (below Rt 130)	pH
02040202120090-01	Newton Creek (LDRV-Kaighn Ave to LT Ck)	pH
02040202140020-01	Still Run/London Br(above Tomlin Sta Rd)	Cause Unknown
02040202150010-01	Raccoon Ck (above Clems Run)	Cause Unknown
02040202160010-01	Oldmans Creek (above Commissioners Rd)	Phosphorus (Total)
02040206020010-01	LDRV tribs (Lakeview Ave to Oldmans Ck)	pH
02040206030010-01	Salem River (above Woodstown gage)	Temperature, water
02040206030020-01	Nichomus Run	pH
02040206030020-01	Nichomus Run	Phosphorus (Total)
02040206030040-01	Salem R (CoursesLanding to CountyHomeRd)	Temperature, water
02040206030060-01	Salem R (39-40-14 dam-CoursesLndg)/Canal	Temperature, water
02040206030080-01	Salem Canal	Temperature, water
02040206070070-01	Raccoon Ditch (Stow Creek)	Cause Unknown
02040206110020-01	Fortesque Ck / Fishing Ck / Straight Ck	Oxygen, Dissolved
02040206120040-01	Reed Branch (Still Run)	Cause Unknown
02040206140010-01	Maurice River (BlkwtrBr to/incl WillowGroveLk)	Cause Unknown
02040206150020-01	Muddy Run (incl Palatine Lk to Elmer Lk)	Cause Unknown
02040206160040-01	Mill Creek (lower)	Arsenic
02040206160040-01	Mill Creek (lower)	Cause Unknown
02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	Temperature, water
02040301020050-01	Metedeconk R NB (confluence to Rt 9)	Temperature, water
02040301030030-01	Metedeconk R SB (BennettsPd to 74d19m15s)	Cause Unknown
02040301050040-01	Barnegat North tribs (Tide Ck to Rt 37)	Mercury in Fish Tissue
02040301050040-01	Barnegat North tribs (Tide Ck to Rt 37)	PCB in Fish Tissue
02040301060020-01	Toms River (74-22-30 rd to FrancisMills)	Temperature, water
02040301060030-01	Toms River (Bowman Rd to 74-22-30 road)	pH
02040301060030-01	Toms River (Bowman Rd to 74-22-30 road)	Temperature, water
02040301060050-01	Dove Mill Branch (Toms River)	Temperature, water
02040301070040-01	Ridgeway Br (below Hope Chapel Rd)	pH
02040301080090-01	Toms R Lwr (below Rt 166)	Arsenic

02040301140020-01	Mill Branch (below GS Parkway)	pH
02040301160100-01	Blue Anchor Brook	Temperature, water
02040301160140-01	Mullica River (39d40m30s to Rt 206)	Cause Unknown
02040301160170-01	Sleeper Branch	pH
02040301170020-01	Hammonton Creek (Columbia Rd to 74d43m)	Mercury in Water Column
02040301910010-01	Atl Coast(Manasquan/Herring Is)	Mercury in Fish Tissue
02040301910020-01	Atl Coast (Herring Is to Rt 37)	Mercury in Fish Tissue
02040301910030-01	Atl Cst(Rt 37 to Barnegat Inlet)	Mercury in Fish Tissue
02040301910030-01	Atl Cst(Rt 37 to Barnegat Inlet)	Total Coliform
02040301920010-01	Atl Coast(Barnegat to Surf City)	Mercury in Fish Tissue
02040301920020-01	Atl Coast(Surf City to Haven Be)	Mercury in Fish Tissue
02040301920030-01	Atl Coast(Haven Bch to Lit Egg)	Mercury in Fish Tissue
02040302040030-01	Hospitality Br (Piney HollowRd to Rt538)	pH
02040302040070-01	Hospitality Br (below Piney Hollow Rd)	Cause Unknown
02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Mercury in Fish Tissue
02040302070110-01	Tuckahoe River (below Rt 49)	pH
02040302070120-01	Tuckahoe River (lower)	pH
02040302910010-01	Atl Coast(Ltl Egg to Absecon In)	Mercury in Fish Tissue
02040302920010-01	Atl Coast(Absecon In to Ventnor)	Mercury in Fish Tissue
02040302920020-01	Atl Coast(Ventnor to Great Egg)	Mercury in Fish Tissue
02040302930010-01	Atl Coast(Great Egg to 34th St)	Mercury in Fish Tissue
02040302940010-01	Atl Coast(34th St to Corson Inl)	Mercury in Fish Tissue
02040302940020-01	At Coast(Corson to Townsends In)	Mercury in Fish Tissue
02040302940030-01	Atl Cst(Townsends to Hereford In)	Mercury in Fish Tissue
02040302940040-01	Atl Cst(Hereford to Cape May In)	Mercury in Fish Tissue
02040302940050-01	Atl Cst(CM Inlet to Cape May Pt)	Mercury in Fish Tissue
02040303060201-01	Atl Coast (off Cape May Pt)	Mercury in Fish Tissue