

June 10, 2005

Harry T. Stewart, P.E., Director
New Hampshire Department of Environmental Services
Water Division
6 Hazen Drive, Box 95
Concord, New Hampshire 03302-0095

Re: 2004 Section 303(d) List

Dear Mr. Stewart:

Thank you for submitting New Hampshire's 2004 Section 303(d) list of water quality limited segments. In accordance with Section 303(d) of the Clean Water Act (CWA) and 40 CFR §130.7, the U.S. Environmental Protection Agency (EPA) has conducted a complete review of the list and any supporting documentation.

Based upon our review of the submittal, we hereby partially approve and partially disapprove New Hampshire's 2004 303(d) list. Specifically, EPA approves the State's decision to list 637 assessment units (5189 if including mercury impairments) and associated pollutants set forth in the listing document along with the State's priority ranking for these waters and pollutants. However, EPA disapproves the State's decision not to list five additional water bodies (see Table 1) which meet the requirements for listing under Section 303(d). EPA believes that listing these five waters is necessary because readily available data clearly documents violations of water quality standards. EPA will open a public comment period to receive comments concerning our decision to add these waters to the State's 303(d) list. After we consider comments received from the public, we will transmit to the State the list of waters to be added so that the State can update its 303(d) list to reflect these additional water quality limited segments.

With respect to the Assessment Unit (AU) associated with Stuart Farm, EPA is approving listing in Category 4B at this time. However, within 90 days of receipt of this memorandum, EPA would like to receive a plan from the State that outlines the remaining work, implementation time frames and a monitoring schedule to demonstrate progress towards meeting water quality standards. For the 2006 list, EPA expects the State to provide a demonstration that BMP's necessary to meet water quality standards are being implemented. EPA will consider this information in reviewing the 2006 list submission.

Finally, EPA is encouraged to hear that New Hampshire is reassessing its Consolidated Assessment and Listing Methodology (CALM) with the intent of making modifications and improvements. As this methodology is the foundation for making listing decisions, we support

New Hampshire's efforts to update and improve this important guidance document.

Thank you for your hard work in developing the 2004 303(d) list. My staff and I look forward to continuing our work with NHDES to implement the requirements under Section 303(d) of the CWA. If you have any questions or need additional information please contact Steve Silva at 617-918-1561 or Al Basile at 617-918-1599.

Sincerely,

Linda M. Murphy, Director
Office of Ecosystem Protection

Enclosure

cc: NH DES: Paul Currier, Gregg Comstock
EPA: Al Basile, Carl Deloi, Doug Heath, Anne Leiby, Stephen Silva, Alison Simcox,
Ann Williams

Table 1. Waters added to New Hampshire's 2004 303(d) List.

Water Body^a	Assessment Unit^b	Pollutant^c	Basis for Listing^d	Priority Ranking^e
North Tributary to Canobie Lake	AU number has not yet been assigned by NHDES	chloride	Exceeding water quality standards	2010
Dinsmore Brook	NHRIV700061204-01	chloride	Exceeding water quality standards	2010
Unnamed Tributary to Policy Brook	NHRIV700061102-18	chloride	Exceeding water quality standards	2010
Beaver Brook	NHRIV700061203-16	chloride	Exceeding water quality standards	2010
Little Cohas Brook	NHRIV700060804-05	chloride	Exceeding water quality standards	2010

^aWaterbody being added to the State's 303d list.

^bWaterbody segment identification number; designated by New Hampshire.

^cSpecific pollutant(s) for which the waterbodies were found to exceed water quality standards.

^dRationale for individual listing decision.

^eProposed date of TMDL completion.

EPA Review of New Hampshire's 2004 Section 303(d) List

I. Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and partial disapproval of New Hampshire's 2004 Section 303(d) list. The following sections identify those key elements to be included in the list submittal based on the Clean Water Act and EPA regulations. See 40 C.F.R. §130.7. EPA reviewed the methodology used by the State in developing the 303(d) list and New Hampshire's description of the data and information it considered. EPA's review of New Hampshire's 303(d) list is based on EPA's analysis of whether the State reasonably considered existing and readily available water quality data and information and identified all waters that are required to be listed.

II. Statutory and Regulatory Background

Identification of Water Quality Limited Segments (WQLS) for Inclusion on the Section 303(d) List

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. See 40 CFR 130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and

readily available. See Appendix C in “Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991.” While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) require States to include as part of their submissions to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.

Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and “Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991.”

III. Analysis of New Hampshire’s Submission

EPA has reviewed the State’s submission, submitted on April 1, 2004, and has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 CFR 130.7. Because New Hampshire’s submission does not include all waters that meet Section 303(d) listing requirements, its list will be partially approved and partially disapproved, and the additional waters and pollutants that meet the listing requirements will be added to the final 2004 list. EPA’s review is based on its analysis of whether the State reasonably considered existing and readily available water quality data and information and identified all waters required to be listed.

Basis for EPA decision to add waters to New Hampshire’s 2004 303(d) List

This section describes the basis for EPA’s decision to: (1) disapprove the State’s decision to not list several water bodies, and (2) identify those water bodies for inclusion on the final 2004 Section 303(d) list with associated priority rankings.

EPA identified that the five waterbody segments (Little Cohas Brook, Dinsmore Brook, Unnamed Tributary to Policy Brook, North Tributary to Canobie Lake, and Beaver Brook) were not included on the State's 2004 303(d) List; as discussed below, sufficient data was available to support listing all five segments for chloride. Supporting data includes measurements of chloride and specific conductance, the latter being adopted by New Hampshire as a surrogate for use in determining exceedences of chloride standards. Acute and chronic toxicity values adopted by New Hampshire for specific conductance are 853 uS/cm and 2,855 uS/cm, respectively. Acute and chronic chloride criteria adopted by New Hampshire are 230 mg/l and 860 mg/l, respectively.

Little Cohas Brook [NHRIV700060804-05]

Chloride concentrations of 280 and 230 mg/l were detected by NHDOT in a Tributary to Little Cohas Brook at Route 28 just west of I-93 Exit 5 on February 4 and 19, 2003, respectively [1]. On February 4 and 7, 2004, a NHDES datalogger measured specific conductivity levels as high as 11,600 uS/cm in Little Cohas Brook at the Brown Avenue bridge, more than four times the acute threshold of 2,855 uS/cm [3]. The source of most of this contamination was likely the South Perimeter Road tributary that flows into the main stem of Little Cohas Brook immediately upstream of the bridge. This tributary drains large areas of Manchester Airport and surrounding commercial development. During the winter of 2004-2005, NHDES and EPA are monitoring water quality at Harvey Road and Brown Avenue to better characterize the locations of impaired stream segments from land uses in the watershed.

Dinsmore Brook [NHRIV700061204-04]

This small stream drains the I-93 Exit 3 area and flows into Cobbetts Pond in Windham. NHDOT collected grab samples for chloride in Dinsmore Brook beginning in December 2002 [1]. From February 3 through 7, 2004, continuous datalogger measurements detected a 4-day average level of specific conductance of 1,418 uS/cm and a peak of 4,276 uS/cm at the Castleton Banquet Facility, downstream of I-93 [2].

Unnamed Tributary to Policy Brook [NHRIV700061102-18]

The stream segment lies upstream of the Route 28 bridge in Salem, NH, and has been monitored by NHDOT beginning in December 2003. Continuous measurements of specific conductance showed levels exceeding 7,600 uS/cm on February 4, 2004 [3] and average chloride concentrations of 284 mg/l in grab samples [2].

North Tributary to Canobie Lake [AU not yet assigned]

This tributary drains a wetland extending west of I-93 and flowing into Canobie Lake at West Shore Road in Windham. NHDOT collected chloride grab samples from 12/13/02 to 05/22/03, and concentrations ranged from 75 to 330 mg/l. Based on studies conducted by EPA in 2004, water quality is impaired by chloride primarily from water-softener brine waste injected at the W&E Wellfield adjacent to the wetland. Chloride also originates from I-93 deicing chemicals, as well, that flow into the wetland from a number of catch basins. Grab samples collected from 8/27/04 to 9/17/04 by EPA contained chloride ranging from 439 to 564 mg/l and specific conductivities from 1,409 to 1,683 uS/cm [4]. Specific conductivities measured continuously since August 24, 2004 reached as high as 3,862 uS/cm in February 2005, far in excess of the acute threshold of 2,855 uS/cm [5].

Beaver Brook [NHRIV700061203-16]

Specific conductivities in this stream were monitored continuously by NHDOT from December 17, 2003 to April 15, 2004 at two locations: upstream of I-93 at Fordway Extension Road and downstream at Gilcreast Road. The four-day average levels between February 4 to 8, 2004 were 916 and 929 uS/cm, respectively, which exceeds the 853 uS/cm chronic threshold [2].

The five waterbody segments being added to this list are given a high priority for TMDL development; proposed date of TMDL completion is 2010.

References

1. NHDOT, June 18 2003, Interstate 93 Improvements Salem to Manchester, IM-IR-93-1(174)0, 10418-C NHDOT Road Salt Constituent Monitoring Program Summary Handout: Great Bay Environmental Consulting, Newmarket, NH 03857
2. NHDOT, July 29, 2004, 2003/04 I-93 Water Quality Monitoring Program Regional Specific Conductance/Chloride Assessment Data Summary Report: Great Bay Environmental Consulting, Newmarket, NH 03857
3. NHDES, September 3, 2004, Southern NH Regional Specific Conductance-Chloride Study: 2002-2004 Summary of Results: NHDES Inter-Department Communication from Paul Piszczek to Carl DeLoi, NHDES, Concord, NH
4. Email Message from Douglas Heath to Sarah Pillsbury of NHDES, 11/4/04
5. Email Message from Douglas Heath to Sarah Pillsbury of NHDES, 2/18/05

Basis for EPA Decision to partially approve New Hampshire's 2004 303(d) List

This section describes the basis for EPA's decision to partially approve New Hampshire's 2004 303(d) List. EPA concludes that New Hampshire's decision to list all waters and pollutants identified in the State's submittal are consistent with federal listing requirements.

New Hampshire submitted its Final 2004 §303(d) list to EPA on April 1, 2004. The submittal package included the following components:

1. State of New Hampshire 2004 §303(d) List of Threatened or Impaired Waters.
2. New Hampshire's Surface Water Assessment Methodology including the New Hampshire Listing Methodology, and Summaries by Waterbody Type.
3. NH DES's Response to Public Comments on the February 12, 2004, draft list and listing methodology, including a summary of substantive differences between the draft and final §303(d) Section List of Waters.

Public Participation

NH DES conducted a public participation process in which it provided the public the opportunity to review and comment on the 2004 draft Section 303(d) list. A public comment period was opened upon the release of the draft list on February 12, 2004 and was closed on March 15, 2004. Comments were solicited from the public through email or postal mail to selected environmental organizations and agencies, and through the NH DES website. EPA concludes that New Hampshire's public participation process was consistent with its Continuing Planning Process (CPP), and that New Hampshire provided sufficient public notice and opportunities for public involvement and response.

The final submittal took into account suggested changes to the draft list from interested parties. NH DES prepared a "Response to Public Comment" document which lists each comment and the State's response. EPA reviewed NH DES's responses and concludes that New Hampshire adequately responded to the comments.

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA has reviewed the State's submission, and with the exception of not including the five waters being added to this list as discussed above, EPA has concluded that the State developed its Section 303(d) list in compliance with Section 303(d) of the Act and 40 CFR §130.7. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

New Hampshire used NH DES, Department of Health and Human Services databases as well as databases developed by other organizations and agencies, as deemed appropriate, to develop its 2004 §303(d) list. The same databases were used to assist in the preparation of the biennial §305(b) report. In the development of the 2004 §303(d) list, New Hampshire began with its existing EPA approved 2002 §303(d) list and relied on new water quality assessments (i.e., post-2002) to update the list accordingly. All data sources used to develop previous §303(d) lists were carefully reviewed. New Hampshire believes that information pertaining to impairment status must be well substantiated, preferably with actual monitoring data, for it to be used for §303(d) listing.

EPA has reviewed New Hampshire's description of the data and information it considered, and its methodology for identifying waters. EPA concludes, with exception to the five waters being added to this list, that the State properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR §130.7(b)(5).

In addition, the State provided a rationale for not relying on particular and readily available water quality-related data and information as a basis for listing waters. Beginning with the 1998 list and continuing through the 2004 listing process, New Hampshire chose not to list waters where the only information regarding water quality was unsubstantiated anecdotal information (e.g., citizen

complaint). New Hampshire analyzed relevant data and information for each waterbody in the State in deciding whether there was sufficient, reliable data to support listing. The State's use of this listing methodology is reasonable and consistent with EPA's regulations. The regulations permit states to decide not to use any particular data and information as a basis for listing, provided they have a reasonable rationale in doing so. New Hampshire's decision not to use unsubstantiated anecdotal information is reasonable in light of the uncertainty about the reliability of such information. Moreover, it is reasonable for New Hampshire to decide to focus its listing and TMDL development resources on waters where water quality impairments are well-documented, rather than on waters with only unreliable water quality information. As additional waters are assessed, EPA expects New Hampshire would add waters to its list where such assessments show water quality standards are not being met.

In certain cases, New Hampshire included waters on the 2004 §303(d) list based solely on evaluative information when it had confidence that an impairment exists. For example, as all waters are covered under the statewide fish consumption advisory due to elevated mercury in fish tissue, all waters were included by reference on the list as impaired by mercury.

In developing the 2004 §303(d) list, New Hampshire used data older than five years of age if waters had previously been listed as threatened or impaired, even though data older than five years is considered "evaluative" information under EPA's Section §305(b) guidance. For waters not previously listed, New Hampshire considered only data that were five years or less for rivers, streams, impoundments, estuaries, and ocean waters, and 10 years or less for lakes and ponds.

The State concluded that the use of data older than five years for waters previously listed (provided that it met all other data requirements, including the minimum number of samples, stipulated in the assessment methodology) is reasonable in order to prevent removal of waters from a threatened or impaired category. In addition, NH DES has found that the water quality of many lakes and ponds does not change dramatically with time due to their large volume and retention times (on the order of years); therefore, use of 10-year-old data is believed to provide a reasonably accurate assessment of water-quality conditions for those waterbodies. EPA believes this conclusion is reasonable, and it is consistent with EPA regulations for states to decide to list waters based on data older than five years. The regulations require states to consider all available data, and to use it unless they provide a reasonable rationale for not doing so.

Waters were not added to the 2004 §303(d) list where limited information might indicate a possible impairment but it was determined to be insufficient for the purpose of listing on the §303(d) list. For each water quality impairment not previously listed, where information indicated an impairment due to pollutants may exist, but available information was determined to be insufficient to support a §303(d) listing (due to lack of monitoring data or QA/QC documentation), the waterbodies were not included on the §303(d) list. Instead, they are included on a separate state list of priority waters in the category of waters in need of further assessment.

In summary, New Hampshire considered the most recent §305(b) assessments, as required by EPA's regulations, and used information obtained primarily through monitoring as the basis for adding

water quality impairments to the 2004 §303(d) list. Of the 913 unique water-quality impairment problems (6102 if mercury impaired waters are included) appearing in the final 2004 §303(d) list, 676 entries (5677 if mercury impaired waters are included) appeared on the §303(d) list from 2002. A “unique” water-quality impairment problem is a pollutant/waterbody combination; there is commonly more than one pollutant associated with an impaired waterbody. The difference between the 2004 and 2002 §303(d) list entries (237) are additions to the 2004 §303(d) list. Differences between 2002 and 2004 are largely due to additional data that were assessed, the addition of water segments (called Assessment Units (AUs)), as well as revisions to the NH CALM. EPA concludes that New Hampshire appropriately considered the waters listed in the most recent section 305(b) report during the development of the 2004 §303(d) list.

Priority Ranking

As described in its assessment and listing methodology (CALM), NH established a preliminary TMDL priority ranking of high, medium, or low based on a judgment of the value of the water resource and whether the pollutants pose a threat to human health or to federally listed threatened or endangered species. The final TMDL priority ranking was determined based on a set of “water resource factors”, including amount of public interest and support, adequacy of resources available to conduct the TMDL, other administrative or legal factors (e.g., need to support NPDES program or a court order), and likelihood that a developed TMDL will be implemented (technical and economical feasibility). NH DES notes that their TMDL schedules are not always a good indicator of priority since some high priority TMDLs could take years to complete depending on complexity.

EPA reviewed the State’s priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters, as well as other relevant factors such as State program priorities, complexity of impairment, availability of quality information, and the likelihood that a remedy might be implemented before a TMDL could be developed. In addition, EPA reviewed the State’s identification of AU’s targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame.

Specifically, New Hampshire assigned a target date for completion of each TMDL. Waters designated for TMDL development from 2004-2006 include lakes with low pH caused by acid rain, estuaries with shellfish contaminated by fecal coliform, and river segments impacted by wastewater treatment facilities (WWTF’s) as indicated by low dissolved oxygen (DO). The need to prepare a TMDL for these waters has been confirmed and NHDES anticipates that sufficient information to support TMDL development exists or can be obtained within the next two years.

Categories of waters for which NH DES has assigned a low priority for TMDL development include those impaired by legacy pollutants (e.g., PCBs and dioxin), non-coastal waters impaired by bacteria, reservoirs impaired by excess algal growth for which drinking water is adequately treated, non-coastal waters impaired by chlorophyll-a and used for primary contact recreation.

NHDES has a three-year rotating-watershed monitoring program for freshwater rivers and streams

which it follows most of the time. Approximately 300 samples from approximately 100 stations are analyzed each year for physical/chemical and/or bacteriological parameters. As additional data are compiled, NH re-prioritizes waters based on factors such as, but not limited to, the nature/severity of the impact, the availability of data or models required for TMDL development, etc. Currently, NH plans to develop TMDLs for all waters listed on Category 5 by the year 2017.

EPA finds that the waterbody prioritization and targeting method used by New Hampshire is reasonable and sufficient for purposes of Section 303(d). The State properly took into account the severity of pollution and the uses to be made of listed waters, as well as other relevant factors. EPA concurs that the schedule of TMDL completion establishes a meaningful priority ranking system.

Waters which are not listed on New Hampshire's 2004 §303(d) List

In developing its 2004 §303(d) list, New Hampshire did not remove any waters from its 2002 §303(d) list. As requested in our approval letter for the NH 2002 §303(d) list, New Hampshire reassessed all Cochecho River segments to determine if any segments not listed on the 2002 list should be included on the 2004 303(d) list for bacteria due to the presence of Sanitary Sewer Overflows (SSO's). As a result of this assessment, New Hampshire has listed one estuary and one impoundment segment of the Cochecho River for bacteria due to SSOs. With respect to the AU associated with Stuart Farm, EPA is willing to support continued listing in Category 4B until the 2006 listing cycle. At this time, EPA will no longer be able to support listing in Category 4B, unless it can be demonstrated that either water quality standards have been attained or that necessary best management practices have been fully implemented.

Waterbodies on Tribal Lands

EPA's approval of New Hampshire's Section 303(d) list extends to all waterbodies on the list with the exception of those waters, if any, that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

Waters Impaired by Nonpoint Sources of Pollution

The State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. In 'Pronsolino v. Marcus,' the District Court for Northern District of California held that Section 303(d) of the Clean Water Act authorizes EPA to identify and establish total maximum daily loads for waters impaired by nonpoint sources. Pronsolino v. Marcus, 91 F. Supp. 2d 1337, 1347 (N.D.Ca. 2000). This decision was affirmed by the 9th Circuit court of appeals in Pronsolino v. Nasti, 291 F.3d 1123 (9th Cir. 2002). See also EPA's 1991 Guidance and National Clarifying Guidance for 1998 Section 303(d) Lists, Aug. 27, 1997.

