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TOTAL MAXIMUM DAILY LOAD (TMDL) DEVELOPMENT

For Toxicity due to Pesticides and Other Pollutants in the

Pearl River

Leake County downstream of Carthage, Mississippi

And

Leake County upstream of Carthage, Mississippi

(HUC 03180001)

Pearl River Basin, Mississippi



Summary Page

The Consent Decree between the Environmental Protection Agency (EPA) and the Sierra Club in the Mississippi Total Maximum Daily Load (TMDL) Lawsuit requires EPA to develop TMDLs for waters included on Mississippi's 1996 303(d) List of Impaired Waterbodies, according to a prescribed schedule. The 1996 Section 303(d) List includes all waters determined to be impaired based on monitored or evaluated assessments, and shows cause(s) of impairment for each listed waterbody. Mississippi's evaluated listings assume that agricultural activities in the watershed may have adversely affected water quality in these specific reaches (MSUPRLRM2 and MSUPRLRM1) of the Pearl River.

This "toxicity due to pesticides TMDL" is a phased TMDL proposed in compliance with the Consent Decree to address evaluated impairments in segments MSUPRLRM1 and MSUPRLRM2. These segments are listed for "evaluated causes" since there are no pesticide data to determine impairment status or the specific pollutant problem or to determine a specific pesticide loading reduction. If there is a demonstrated aquatic life problem due to a pesticide or a combination of pesticides, the TMDL can be best expressed in terms of aquatic life toxicity. For this reason, EPA is using a phased approach for TMDL development for these "evaluated" listings.

In a phased TMDL, EPA or the state uses the best information available at the time to establish the TMDL at levels necessary to implement applicable water quality standards and to make allocations to pollution sources. The phased TMDL approach recognizes that additional data and information may be necessary to validate the assumptions of the TMDL and to provide greater certainty that the TMDL will achieve the applicable water quality standard. Thus, Phase 1 identifies toxicity levels needed to protect the waterbody and Phase 2 identifies the data and information that needs to be collected to determine the specific toxicity causes and to develop the appropriate pollutant reduction implementation plans. The Phase 2 TMDL will include targeted pollution allocation strategies for specific causes of impairment and a margin of safety that addresses uncertainty about the relationship between load allocations and receiving water quality.

EPA guidance states that TMDLs under the phased approach include allocations that confirm existing limits or would lead to new limits or new controls while allowing for additional data collection to more accurately determine assimilative capacities and pollution allocations. (USEPA, 1991) Therefore, no new or additional source of pollutant representative of any of the cited classes of respective impairments shall be introduced into these segments until:

- actual impairment status is known,
- specific pollutants causing impairment are determined; and
- the Phase 2 TMDLs are developed for individual pollutants in these segments; or
- these segments are de-listed based on the biological or toxicity water quality monitoring to be conducted.

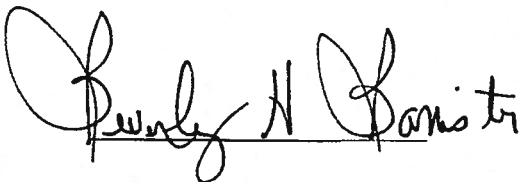
The TMDL is the total amount of pollutant that can be assimilated by the receiving water body while maintaining water quality standards. For some pollutants, TMDLs are expressed on a mass loading basis (e.g., pounds per day). In accordance with 40 CFR Part 130.2(i), "TMDLs can be expressed in terms of ... mass per time, toxicity, or other appropriate measure." In addition, NPDES permitting regulations in 40 CFR 122.45(f) state that "All pollutants limited in permits shall have limitations...expressed in terms of mass except...pollutants which cannot appropriately be expressed by mass." For the toxicity TMDL for these segments of the Pearl River, the Total Maximum Daily Load is expressed in terms of chronic toxicity units (TU_s).

This TMDL has been established to protect the biology of the listed segments of the Pearl River against chronic toxicity due to pesticides and other pollutants that may cause toxicity to the aquatic organisms. The toxicity wasteload allocation (WLA) for any dischargers to these segments of the Pearl River will be determined as follows:

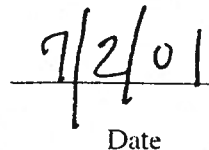
$$\text{Toxicity from each point source} = 100 / \text{NOEC} = 100 / \text{IWC} = 100 / 100 = 1.0 \text{ TU}$$

Where NOEC is the No Effect Concentration; IWC is the Instream Water Concentration and TU is Toxicity Units. Since these segments of the Pearl River are on the State's 303(d) impaired waters list, the IWC for any new or expanding sources will be established at 100, meaning there is no instream dilution available for assimilative capacity.

The existing toxicity contribution to these segments of the Pearl River from nonpoint sources is not known. The toxicity associated with any new nonpoint sources cannot exceed 1.0 TU.



Beverly H. Banister, Director
Water Management Division



Date

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Introduction

Section 303(d) of the Clean Water Act (CWA) as Amended by the Water Quality Act of 1987, Public Law 100-4, and the United States Environmental Protection Agency's (USEPA/EPA) Water Quality Planning and Management Regulations [Title 40 of the Code of Federal Regulation (40 CFR), Part 130] require each State to identify those waters within its boundaries not meeting water quality standards applicable to the water's designated uses. Total maximum daily loads (TMDLs) for all pollutants violating or causing violation of applicable water quality standards are established for each identified water. Such loads are established at levels necessary to implement the applicable water quality standards with consideration given to seasonal variations and margins of safety. The TMDL process establishes the allowable loadings of pollutants or other quantifiable parameters for a water body, based on the relationship between pollution sources and in-stream water quality conditions, so that states can establish water-quality based controls to reduce pollution from both point and nonpoint sources and restore and maintain the quality of their water resources (USEPA, 1991).

Problem Definition

The Consent Decree between the Environmental Protection Agency (EPA) and the Sierra Club in the Mississippi Total Maximum Daily Load (TMDL) Lawsuit requires EPA to develop TMDLs for waters included on Mississippi's 1996 303(d) List of Impaired Waterbodies, according to a prescribed schedule. The 1996 Section 303(d) List includes all waters determined to be impaired based on monitored or evaluated assessments, and shows cause(s) of impairment for each listed waterbody. In many cases, the causes listed for monitored waterbodies are listed based on evaluated assessments. These are potential causes of impairment based on local land uses, such as agriculture. In some cases, a monitored waterbody is listed with only evaluated causes. Pursuant to the Consent Decree, EPA is responsible for developing TMDLs for all causes associated with the monitored waterbodies on the 1996 Section 303(d) List, regardless of whether these waters or causes were determined to be monitored or evaluated. Pearl River segments MSUPRLRM1 and MSUPRLRM2 (Figure 1) are listed as monitored waterbodies on the 1996 Mississippi Section 303(d) List. The 1998 Section

303(d) List identifies MSUPRLRM1 as a monitored segment, and MSUPRLRM2 as an evaluated segment. The format of the 1998 List was selected to differentiate monitored and evaluated pollutants on monitored segments.

Mississippi's evaluated listings assume that agricultural activities in the watershed may have adversely affected water quality in these specific reaches (MSUPRLRM2 and MSUPRLRM1) of the Pearl River. This toxicity due to pesticides TMDL is a phased TMDL proposed in compliance with the Consent Decree to address evaluated impairments in segments MSUPRLRM1 and MSUPRLRM2. These segments are listed for evaluated causes and there are no pesticide data to determine impairment status or the specific pollutant problem or to determine a specific pesticide loading reduction. If there is a demonstrated aquatic life problem due to a pesticide or a combination of pesticides, the TMDL can be best expressed in terms of aquatic life toxicity. For this reason, EPA is using a phased approach for TMDL development for these "evaluated" listings. In a phased TMDL, EPA or the state uses the best information available at the time to establish the TMDL at levels necessary to implement applicable water quality standards and to make allocations to pollution sources. The phased TMDL approach recognizes that additional data and information may be necessary to validate the assumptions of the TMDL and to provide greater certainty that the TMDL will achieve the applicable water quality standard. Thus, Phase 1 identifies the toxicity level needed to protect the waterbody and Phase 2 identifies the data and information that needs to be collected to determine the specific toxicity causes and to develop the appropriate pollutant reduction implementation plans. The Phase 2 TMDL will include targeted pollution allocation strategies for specific causes of impairment and a margin of safety that addresses uncertainty about the relationship between load allocations and receiving water quality.

EPA guidance states that TMDLs under the phased approach include allocations that confirm existing limits or would lead to new limits or new controls while allowing for additional data collection to more accurately determine assimilative capacities and pollution allocations. (USEPA, 1991) Therefore, no new or additional source of pollutant representative of any of the cited classes of respective impairments shall be introduced into these segments until:

- actual impairment status is known;
- specific pollutants causing impairment are determined; and
- the Phase 2 TMDLs are developed for individual pollutants in these segments;
- or these segments are de-listed based on the biological or toxicity water quality monitoring to be conducted.

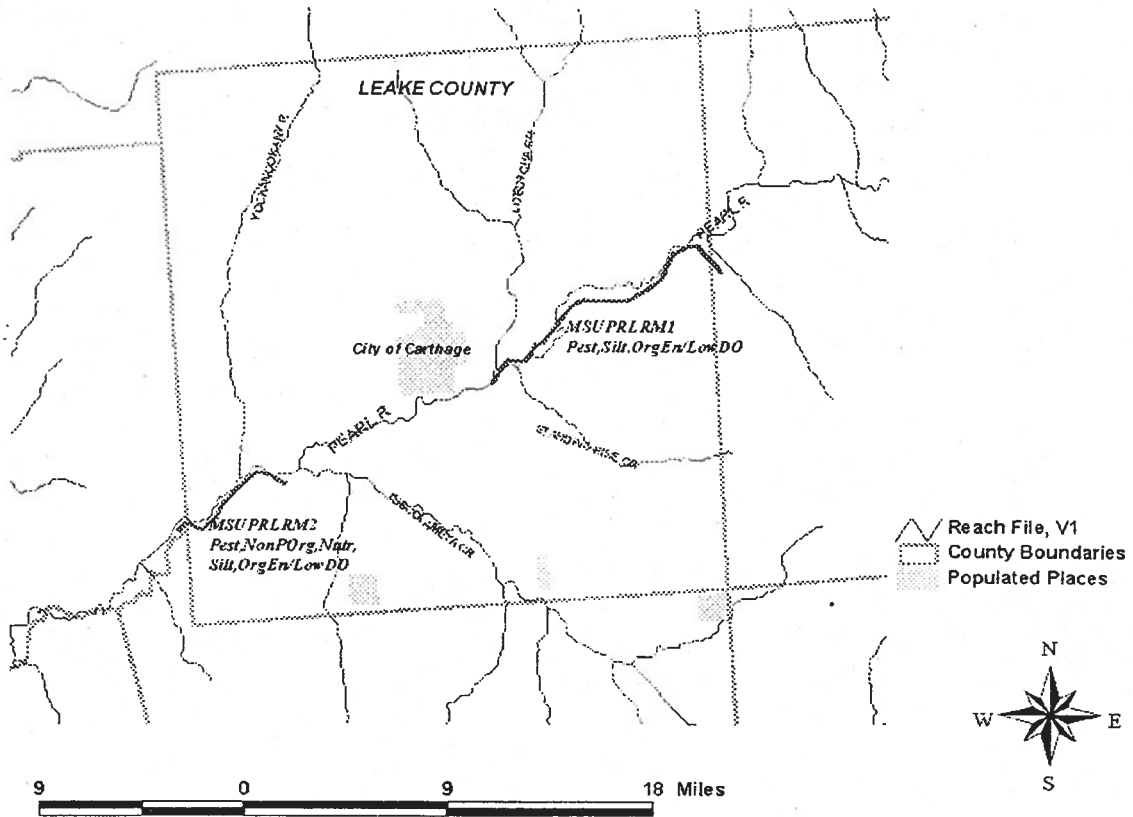


Figure 1 – Pearl River Evaluated Impairments Location Map

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Target Identification

Available data indicates that Pearl River segment MSUPRLRM1 is impaired due to pH and pathogens. (A TMDL has already been established for pathogens and a TMDL for pH has been developed by the State). Available data also shows that this segment was assessed as “monitored” for the 1998 Section 305(b) assessment based on monthly dissolved oxygen monitoring from 1993 through 1996, but no violations of the dissolved oxygen standard were identified (See Figure 2). However, no monitoring has been performed to assess the listed causes of pesticides and siltation.

The Phase One TMDL for Pearl River segments MSUPRLRM1 and MSUPRLRM2 establishes a toxicity limit and a monitoring plan to: (1) perform toxicity or/and biological monitoring to determine if the segment is impaired due to pesticides and the other evaluated pollutants; and (2) if biologically impaired, perform additional monitoring to determine the specific cause and sources of impairment. If the toxicity and/or biological monitoring suggest impairment, then the segment should be screened for all major regulated classes of pesticides and sources of siltation and organic enrichment with particular focus on land-use activities in the immediate watershed and potential point source dischargers within the watershed. Segment MSUPRLRM2 is also listed for non-priority organics and further monitoring, if needed, should also focus on these types of pollutants. Table 1 describes common pesticides used in the counties contained within the catchment basin of the two listed segments. Sampling should be conducted to assess the segments’ compliance with Mississippi’s water quality standards for pesticides as established in the *State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters*. (MDEQ, 1995).

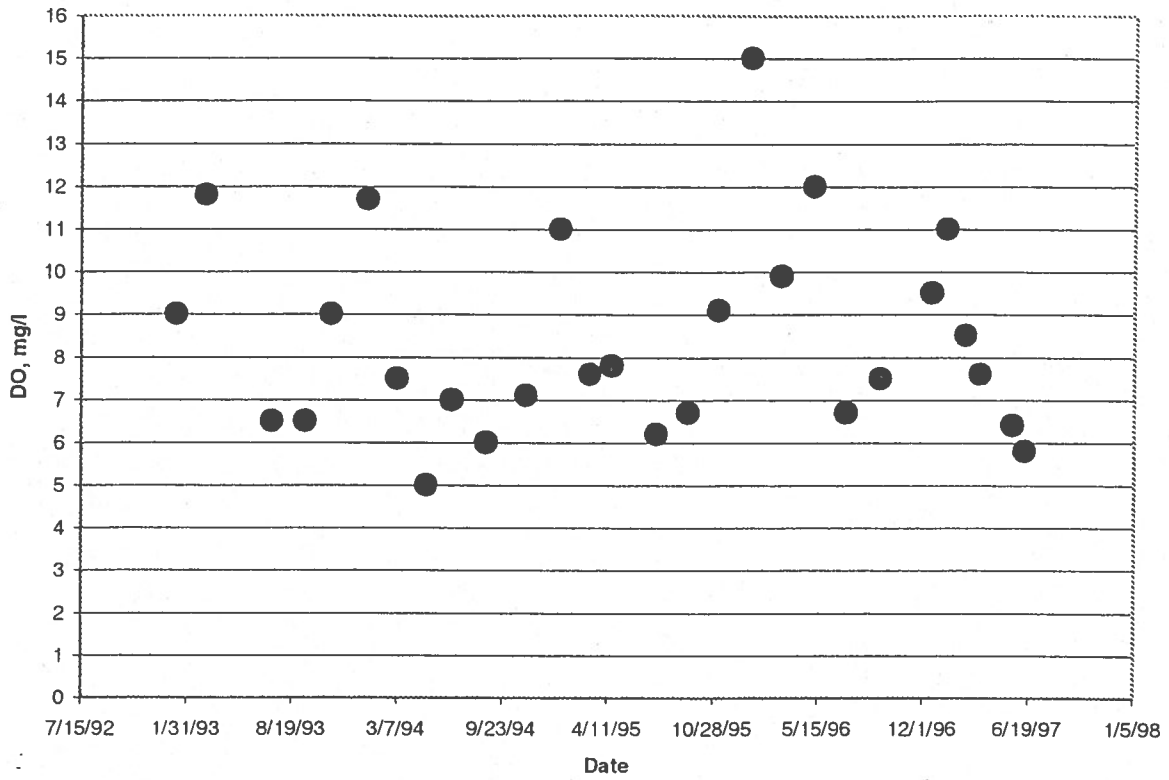


Figure 2 - DO Monitoring: Pearl River at Hwy 16 near Edinburg

Pesticide Name	Choctaw	Attala	Winston	Leake	Madison	Scott	Neshoba	Kemper	Newton	Average
MSMA	2.9	17	4.2	8.8	65.2	3.8	NA	NA	NA	17.0
2 4-D	3.5	4.9	9.6	8.3	8.3	9.8	11.2	8.1	10.8	8.9
Trifluralin	3.3	7.5	2.7	5.3	27.1	4.9	0.5	2.4	4.3	6.8
Fluometuron	1.5	9	2.2	4.6	34.5	2	NA	NA	NA	10.5
Cyanazine	1.2	6.7	1.8	3.6	25.4	1.5	0.1	0.1	0.1	4.9
Glyphosate	2.4	2.6	2.8	3.4	6.7	4.6	2	3.6	5.3	3.9
Metolachlor	3.4	4.2	2.4	3.6	13	1.5	1.8	0.8	2.7	3.8
Norflurazon	0.8	4.5	1.1	2.3	17.4	1	NA	NA	NA	5.3
Atrazine	3.4	2.6	2.6	3.8	5.4	0.9	2.6	1	3.1	2.8
DSMA	0.7	3.9	1	2	14.9	0.9	NA	NA	NA	4.5
Pendimethalin	1.3	2.4	0.9	1.8	8.5	1.8	0.2	1	1.8	2.3
Dicamba	0.9	1.3	2.4	2.1	2.2	2.5	2.7	2.2	2.8	2.3
Alachlor	1.7	1.5	1.4	2.1	3.3	1	1.2	0.8	2	1.7
Prometryn	0.3	1.9	0.5	0.9	7.1	0.4	NA	NA	NA	2.2
Paraquat	0.5	0.6	0.4	0.7	1.9	0.7	0.2	0.5	0.9	0.7
Methazole	0.2	1	0.3	0.5	3.9	0.2	NA	NA	NA	1.2
Diuron	0.1	0.8	0.2	0.4	3.2	0.2	NA	NA	NA	1.0
Metribuzin	0.5	0.4	0.3	0.5	1.2	0.8	0.1	0.5	0.9	0.6
Bentazon	0.4	0.3	0.2	0.4	0.9	0.6	0.1	0.4	0.7	0.4

Table 1 – Common Pesticides Applied in Pearl River Watershed Based on County Usage (tons/square mi)

In addition, segment MSUPRLRM2 is listed for nutrients. MDEQ has no in-stream data to support the listing. EPA's STORET database indicates that monitoring has not been conducted in this segment. Again, if this segment is determined to be biologically impaired, sampling is to be conducted for phosphorus, nitrogen, and algae to assess the validity of the "evaluated" listing.

Phased Total Maximum Daily Load (TMDL) Approach

Since there are no data to determine impairment status for these segments and there are no specific pollutants identified for certain key "evaluated" causes, specific pollutant TMDL development is not possible at this time. For this reason, EPA is using a phased approach for the toxicity TMDL development for these "evaluated" listings.

The phased TMDL approach recognizes that additional data and information may be necessary to validate the assumptions of the TMDL and to provide greater certainty that the TMDL will achieve the applicable water quality standard. Thus, Phase 1 identifies toxicity level needed to protect the waterbody and Phase 2 identifies the data and information that needs to be collected to determine the specific toxicity causes and develops the appropriate pollutant reduction implementation plans. The Phase 2 TMDL will include targeted pollution allocation strategies for specific causes of impairment and a margin of safety that addresses uncertainty about the relationship between load allocations and receiving water quality.

EPA guidance states that TMDLs under the phased approach include allocations that confirm existing limits or would lead to new limits or new controls while allowing for additional data collection to more accurately determine assimilative capacities and pollution allocations. (USEPA, 1991) Therefore, no new or additional source of pollutant representative of any of the cited classes of respective impairments shall be introduced into these segments until:

- actual impairment status is known;
- specific pollutants causing impairment are determined; and
- the Phase 2 TMDLs are developed for individual pollutants in these segments;

- or these segments are de-listed based on the biological or toxicity water quality monitoring to be conducted.

Total Maximum Daily Load (TMDL) Development

The TMDL is the total amount of pollutant that can be assimilated by the receiving water body while maintaining water quality standards. For some pollutants, TMDLs are expressed on a mass loading basis (e.g., pounds per day). In accordance with 40 CFR Part 130.2(i), "TMDLs can be expressed in terms of ... mass per time, toxicity, or other appropriate measure." In addition, NPDES permitting regulations in 40 CFR 122.45(f) state that "All pollutants limited in permits shall have limitations...expressed in terms of mass except...pollutants which cannot appropriately be expressed by mass." For the toxicity TMDL for Pearl River, the Total Maximum Daily Load is expressed in terms of chronic toxicity units (TU_cs).

Waste Load Allocations

This TMDL has been established to protect against chronic toxicity. Through its National Pollutant Discharge Elimination System (NPDES) permitting process, the MDEQ will determine whether any permitted dischargers to these segments of the Pearl River have a reasonable potential of discharging chronically toxic effluent. An allocation to an individual point source discharger does not automatically result in a permit limit or a monitoring requirement. MDEQ NPDES permitting group will use its best professional judgment to determine whether a reasonable potential exists for these facilities to discharge chronically toxic effluent. If the NPDES permitting group determines that such a reasonable potential exists, effluent monitoring requirements or limitations will be established as appropriate.

The toxicity wasteload allocation (WLA) for any dischargers to these segments of the Pearl River will be determined as follows:

$$\text{Toxicity from each point source} = 100 / \text{NOEC} = 100 / \text{IWC} = 100 / 100 = 1.0 \text{ TU}$$

Where NOEC is the No Effect Concentration; IWC is the Instream Water Concentration and TU is Toxicity Units. Since these segments of the Pearl River are on the State's 303(d) impaired waters list, the IWC for any new or expanding sources will be established at 100, meaning there is no instream dilution available for assimilative capacity.

Load Allocations

The existing toxicity contribution to these segments of the Pearl River from nonpoint sources is not known. In the event that nonpoint sources are causing or contributing to the toxicity impairment of these segments of the Pearl River, the allocation to the point sources would not be any different. The toxicity associated with the either nonpoint or point sources cannot exceed 1.0 TU_c.

TMDL Monitoring Strategy

Sampling Proposal for Pearl River 303(d) listed "Evaluated" Segments

Biological monitoring and assessment will be conducted within the listed segments. If the segments in the Pearl River are determined to lack biological and, thereby, toxicity impairments, and no evidence of chemical data exists to support the listings, then the appropriate segments should be de-listed. If biological impairment is determined, then a comprehensive chemical monitoring effort will be conducted in accordance with existing MDEQ river basin monitoring plans. This chemical monitoring plan will be constructed in such a manner as to identify specific pollutants for TMDL development and such Phase 2 TMDLs will be completed consistent with TMDL development in the State's rotating basin approach (i.e., in 2005).

References:

MDEQ. 1995. *State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters*. Office of Pollution Control.

Sierra Club v. EPA & Hankinson USDC-ND-GA Atlanta Div. #1: 97-CV-3683

USEPA. Guidance for Water Quality-based Decisions: The TMDL Process. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA/440/4-91-001, April 1991.

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**RESPONSIVENESS SUMMARY
CONCERNING EPA'S DECEMBER 15, 2000 PUBLIC NOTICE
PROPOSING TMDLs FOR A NUMBER OF
WATERS AND POLLUTANTS OF CONCERN
IN THE STATE OF MISSISSIPPI**

Public Participation Activity Conducted:

On December 15, 2000, EPA Region 4 published an abbreviated public notice in the legal advertising section of The Clarion-Ledger. Additionally, Region 4 mailed copies of a detailed public notice to the Mississippi Department of Environmental Quality (MDEQ), the Plaintiff in the Mississippi total maximum daily load (TMDL) lawsuit against EPA (Sierra Club v. John Hankinson et al., Civil Action No. 1-97-cv-3683-MHS), and persons, identified as potentially interested parties, on a mailing list maintained by Region 4. This public notice requested comments from the public on EPA's proposed TMDLs for the following water quality limited segments and pollutants of concern:

WATERBODY NAME (WATERBODY IDENTIFICATION)	POLLUTANT OF CONCERN
PEARL RIVER BASIN	
Pearl River (MSUPRLRM1)	pesticides
Pearl River (MSUPRLRM1)	siltation
Pearl River (MSUPRLRM1)	organic enrichment / low dissolved oxygen
Pearl River (MSUPRLRM2)	pesticides
Pearl River (MSUPRLRM2)	nonpriority organics
Pearl River (MSUPRLRM2)	nutrients
Pearl River (MSUPRLRM2)	siltation
Pearl River (MSUPRLRM2)	organic enrichment / low dissolved oxygen

On January 31, 2001, a Notice of Extension of Comment Period December 15, 2000 Public Notice was issued by EPA Region 4. Region 4 mailed copies of the public notice to the Mississippi Department of Environmental Quality (MDEQ), the Plaintiff in the Mississippi total maximum daily load (TMDL) lawsuit against EPA (Sierra Club v. John Hankinson et al., Civil

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Action No. 1-97-cv-3683-MHS), and persons, identified as potentially interested parties, on a mailing list maintained by Region 4. This public notice requested comments from the public on the aforementioned proposed TMDLs by March 2, 2001.

Matters on Which Public Was Consulted:

As a result of settlement negotiations in the Mississippi TMDL lawsuit against EPA (Sierra Club v. John Hankinson et al., Civil Action No. 1-97-cv-3683-MHS), EPA had the following commitment:

“Within five (5) years of the Effective Date of this Consent Decree, EPA will have approved State-proposed TMDLs or EPA will propose TMDLs for the WQLSs on the Special Waters listed in Exhibit B attached hereto (Special WQLSs), subject to paragraph V.A.5.b. below. EPA will have approved State-proposed TMDLs or EPA will propose TMDLs for the Special WQLSs for which there is monitoring data as indicated on Mississippi’s 1996 § 303(d) List during the first three (3) years of this schedule. EPA will have approved State-proposed TMDLs or EPA will propose TMDLs for the Special WQLSs for which there is evaluated data as indicated on Mississippi’s 1996 § 303(d) List during years four and five of this schedule. TMDLs for the Special WQLSs will be proposed by the following dates:”

Number of TMDLs on Special WQLSs Which Will Be Developed Each Year	Established by Mississippi by Date	State TMDL Approved by EPA or EPA-Proposed TMDL
22	6/15/99	12/15/99
33	6/15/00	12/15/00
40	6/15/01	12/15/01
03	6/15/02	12/15/02
06	6/15/03	12/15/03

The public was consulted on proposed, TMDLs for 8 water quality limited segments and several pollutants of concern located in the State of Mississippi. EPA Region 4 had received and evaluated water quality-related data and information about these waters and the pollutants and had prepared documents supporting the preliminary determinations of these evaluations.

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Summary of Public's Comments:

One person contacted the EPA Region 4 offices, during the public comment period, to request information. The following is a brief summary of the contact by the public:

1. Sam Testa
National Sedimentation Laboratory
Oxford, Mississippi
December 21, 2000

requested a copy of the proposed TMDLs for the Pearl River.

The following person provided written comments during the public comment period:

1. Barry S. Royals, P.E.
Surface Water Division Chief
Office of Pollution Control
Mississippi Department of Environmental Quality
Post Office Box 10385
Jackson, Mississippi 39289-0385
February 27, 2001

Agency's Specific Responses in Terms of Modifications of the Proposed Action or an Explanation for Rejection of Proposals Made by the Public:

It should be noted that the aforementioned request for information, data, documents, etc., was responded to in a timely manner (within 24 hours of the request).

The following are the specific comments and EPA's responses to each of the written comments that were received concerning the proposed TMDLs:

COMMENT

The commenter objects to the approval by EPA of any TMDL for a water body segment for which there is no scientifically reliable monitoring data indicating impairment. The TMDLs recently proposed for the Pearl River are objectionable, in part, on this ground. The approval and implementation by EPA of a TMDL can have serious repercussions on existing and new permitting activity in an area. The commenter believes that the promulgation of a TMDL by EPA in the absence of scientifically defensible monitoring data and/or modeling results is an arbitrary and capricious decision that may subject EPA's future permitting decisions, based in whole or in part on that TMDL, to administrative or judicial review and reversal. To the extent that the implementation of the TMDL would cause MDEQ, the Mississippi Commission on Environmental Quality, or the Mississippi Environmental Quality Permit Board to take arbitrary

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and capricious regulatory actions, those entities may be forced to determine that the approval of an unsubstantiated TMDL is an action beyond EPA's statutory authority and is, thus, not an enforceable part of the federal water pollution control regime as delegated to and administered by the State of Mississippi. The commenter requests that EPA Region 4 withdraw the current document and re-propose TMDLs for this waterbody segment only where data have been collected to confirm actual pollutant specific impairment.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

The Consent Decree between the Environmental Protection Agency (EPA) and the Sierra Club in the Mississippi Total Maximum Daily Load (TMDL) Lawsuit requires EPA to develop TMDLs for waters included on Mississippi's 1996 Section 303(d) List of Impaired Waterbodies, according to a prescribed schedule. The 1996 Section 303(d) List includes all waters determined to be impaired based on monitored or evaluated assessments, and shows cause(s) of impairment for each listed waterbody. In many cases, the causes listed for monitored waterbodies are listed based on evaluated assessments. These are potential causes of impairment based on local land uses, such as agriculture. In some cases, a monitored waterbody is listed with only evaluated causes. Pursuant to the Consent Decree, EPA is responsible for developing TMDLs for all causes associated with the monitored waterbodies on the 1996 Section 303(d) List, regardless of whether these waters or causes were determined to be monitored or evaluated. Pearl River segments MSUPRLRM1 and MSUPRLRM2 are listed as monitored waterbodies on the Mississippi 1996 Section 303(d) List and EPA is obligated under the Consent Decree to develop these TMDLs at this time.

Since there are no data to determine impairment status for these segments and there are no specific pollutants identified for certain key "evaluated" causes, specific pollutant TMDL development is not possible at this time. For this reason, EPA is proposing a phased approach for the toxicity TMDL development for these "evaluated" listings. The phased TMDL approach recognizes that additional data and information may be necessary to validate the assumptions of the TMDL and to provide greater certainty that the TMDL will achieve the applicable water quality standard. Thus, Phase 1 identifies toxicity level needed to protect the waterbody and Phase 2 identifies the data and information that needs to be collected to determine the specific toxicity causes and develops the appropriate pollutant reduction implementation plans. The Phase 2 TMDL will include targeted pollution allocation strategies for specific causes of impairment and a margin of safety that addresses uncertainty about the relationship between load allocations and receiving water quality.

EPA guidance states that TMDLs under the phased approach include allocations that confirm existing limits or would lead to new limits or new controls while allowing for additional data collection to more accurately determine assimilative capacities and pollution allocations. (USEPA, 1991) Therefore, no new or additional source of pollutant representative of any of the cited classes of respective impairments shall be

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introduced into these segments until:

actual impairment status is known;
specific pollutants causing impairment are determined; and
the Phase 2 TMDLs are developed for individual pollutants in these segments;
or these segments are de-listed based on the biological or toxicity water quality
monitoring to be conducted.

COMMENT

The commenter would be pleased to hear and consider the explanation for why EPA now has decided to propose TMDLs for evaluated (not monitored) pollutant parameters and stream segments for which virtually no scientifically defensible information exists demonstrating a violation of Mississippi water quality standards. MDEQ stands behind its commitment to monitor all water body segments in the State during its continuing basin rotation plan and to propose TMDLs on those segments where impairment is found.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

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COMMENT

The commenter requests that EPA Region 4 rewrite all sections in these TMDLs that arbitrarily eliminate possible growth in discharge. These decisions must be made on scientific data, not mere speculation.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

Since there are no data to determine impairment status for these segments and there are no specific pollutants identified for certain key "evaluated" causes, specific pollutant TMDL development is not possible at this time. For this reason, EPA is proposing a phased approach for the toxicity TMDL development for these "evaluated" listings. The

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EPA guidance states that TMDLs under the phased approach include allocations that confirm existing limits or would lead to new limits or new controls while allowing for additional data collection to more accurately determine assimilative capacities and pollution allocations. (USEPA, 1991) Therefore, no new or additional source of pollutant representative of any of the cited classes of respective impairments shall be introduced into these segments until:

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or these segments are de-listed based on the biological or toxicity water quality monitoring to be conducted.

COMMENT

The commenter requests copies of all comments, along with EPA's responses, received by EPA Region 4 regarding these proposed TMDLs for the Pearl River.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

Copies of these documents were provided.

COMMENT

The commenter requests that EPA Region 4 withdraw the toxicity based TMDL until further monitoring can be completed in the waterbody. Once the existence of impairment is verified, EPA Region 4 will be in a stronger position to propose this TMDL. Also, if these data indicate there is no toxicity impairment in the waterbody, these parameters should be delisted and any further TMDL activity would not be needed. The commenter requests that EPA Region 4 hold off further TMDL development until the data are collected and assessed.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

The waterbody has been listed by MDEQ for toxicity, therefore a TMDL has been completed. The TMDL proposes additional toxicity monitoring. Once the additional

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data are collected and analyzed, the TMDL can be updated and revised to reflect the most current information during a subsequent phase of the TMDL.

COMMENT

The commenter requests that EPA Region 4 un-bundle these TMDLs. Dissolved Oxygen should be proposed in a separate document.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

EPA has developed this TMDL for the listed waterbody's watershed. This approach allows all pollutants of concern to be addressed through one document. It is EPA's position that, when possible, all the pollutants in the watershed should be addressed at the same time.

COMMENT

The commenter requests that EPA Region 4 take the necessary time needed to address the needed modifications and monitoring efforts noted in the commenter's letter.

Barry S. Royals, P.E., Surface Water Division Chief, Office of Pollution Control, Mississippi Department of Environmental Quality, Post Office Box 10385, Jackson, Mississippi 39289-0385, February 27, 2001

RESPONSE

The TMDL can be updated and/or revised when the additional monitoring data and stream assessments are available. However, this Phase 1 TMDL will be completed based on the data and information currently available.

Description of the Effectiveness of the Public Participation Program:

The public participation process in the matter of EPA's establishment of total maximum daily loads for pollutants and waters in the State of Mississippi was considered to be an important one. The number of comments received from the public, including the State TMDL program, was not significant. However, the expressed interest still demonstrates that the opportunity for public participation in this matter was effective.