STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN

ALTAMAHA RIVER BASIN

FISH CONSUMPTION GUIDELINES DUE TO MERCURY

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TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies.

This Implementation Plan is applicable to the following segments in the Altamaha River Basin:

Impaired Waterbody	Location	Miles/Area Impacted
Ohoopee River	Little Ohoppee River to U.S. Hwy 292	23
Ohoopee River	Hwy. 292 to Hwy. 147	12
Ohoopee River	GA Hwy 147 to confluence with Altamaha River	13
Ohoopee River	Neels Creek to Little Ohoopee River	18
Treutlen County PFA (Sand Hill Lake)	Treulen County	166 (acres)

FISH CONSUMPTION GUIDELINES DUE TO MERCURY

INTRODUCTION

The Environmental Protection Agency has developed total maximum daily load (TMDL) documents for several streams in Georgia that are on the 303(d) list for mercury and fish contaminated with mercury. These TMDLs may be revised when more information is available. Therefore, EPA proposes a phased approach. This phased approach recognizes that with more information, the assumptions on which the TMDL is based may have to be modified to achieve compliance with any applicable water quality standard. Implementation of the TMDL should also follow a phased approach and be subject to changes as more information becomes available.

DISCUSSION OF POLLUTANT

Mercury is a toxic metal and a naturally occurring element found throughout the environment. It is commonly seen as a shiny, silver-white, odorless liquid metal. According to EPA, mercury is one of the persistent, bioaccumulative, and toxic, or PBT, pollutants. Human activity can cause a release of mercury increasing the presence of this toxic element in the atmosphere. The three forms of mercury are methyl, elemental, and inorganic. The elemental or inorganic forms are usually the forms released to the environment. Methylmercury is an organic form that is more toxic and bioaccumulates in the food chain.

The main concern is the exposure to mercury of the developing fetus. Because its brain is rapidly developing, the fetus is more sensitive, and women of childbearing age are at the greatest risk. Human exposure to mercury occurs through the consumption of contaminated fish, as mercury concentrations in the air are usually low. Other groups at risk are subsistence fishermen and some Native American populations.

POLLUTANT SOURCES

EPA attributes 99% of the mercury in our water to atmospheric deposition. Only 1% is said to come from point sources. In water, the mercury is changed by biological processes to methylmercury which bioaccumulates in fish. The largest sources of mercury air emissions are:

- Coal-fired electrical utilities
- Municipal waste combustors
- Medical waste incinerators
- Hazardous waste combustors

Other sources of mercury include manufacturing activities, mining, and wastewater effluents.

There is not much data on mercury concentration in wastewater effluents. These point sources are listed in the TMDLs as having the potential to discharge mercury but, until recently, the method for analyzing mercury was not sensitive enough to measure the low trace levels found in effluents.

SOLVING THE PROBLEM

Mercury coming from power plant stacks and other sources is carried by the wind and can travel for great distances depending on atmospheric conditions. This is a global problem and EPA is working with other countries to limit mercury releases worldwide. EPA will propose limits on mercury emissions from coal and oil fired power plants by December 15, 2003 and issue final regulations by December 15, 2004. According to the TMDLs for fish contaminated with mercury, "EPA expects that a combination of ongoing and future activities under the Clean Air Act will achieve reductions in air deposition of mercury that will enable achievement of water quality standards."

EPA finalized rules for municipal waste combustors and hospital incinerators and there was almost 90% reduction in mercury emissions from 1995 to 2000 from these sources. A voluntary agreement has been achieved between the American Hospital Association and EPA to eliminate mercury waste by 2005 from hospitals.

Industrial demand for mercury declined approximately 75% from 1988 to 1996. For example, mercury is no longer added to paint or pesticides and is used less in batteries.

PLAN FOR IMPLEMENTATION OF TMDL

NPDES major facilities on a 303(d) listed stream for mercury or fish contaminated with mercury will have a monitoring requirement put in the permit. The permittee will characterize the effluent and the source of drinking water in the area for mercury concentrations through this monitoring. If the mercury concentration in the effluent is greater than the water quality target mentioned in the TMDL or greater than the mercury concentration in the source of drinking water, then the permittee will have to develop and implement a mercury minimization plan. This mercury minimization plan will involve source identification and then the reduction and elimination of mercury from the effluent.

Air point sources will continue to reduce emissions of mercury through implementation of the Clean Air Act. EPA and the regulated community will improve the mercury air emissions inventory. EPA will revise the mercury air deposition model to get better characterizations of the sources of mercury.

MONITORING PLAN

EPA and EPD will continue to collect ambient data on mercury concentrations in water, sediments, and fish.

EDUCATION/OUTREACH ACTIVITIES

The Environmental Protection Division will continue to provide guidance and education to the public on all water quality issues through outreach by the Water Protection Branch. The Pollution Prevention Assistance Division is another excellent resource for this outreach. When necessary, the Department of Natural Resources will issue fish consumption guidelines. These guidelines are updated annually, identify specific stream segments where there is a problem, and list all known species of fish with mercury contamination and how often they may be consumed.

REFERENCES

Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-.03, Water Use Classifications and Water Quality Standards, Revised December 2002.

GAEPD, 2002. Total Maximum Daily Load for Total Mercury in the Ohoopee Watershed, Georgia. February 2002.