

West Virginia Division of Environmental Protection

- James C. Laine, Jr.
- Office of Water Resources
- Watershed Assessment Program
- October 5, 2000



Total Maximum Daily Loads (TMDLs)

West Virginia's Progress towards the
Future of Environmental Protection

James C. Laine, Jr.

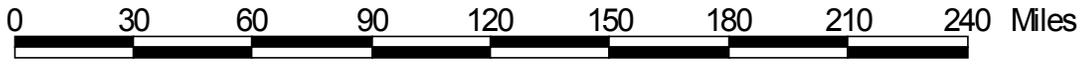
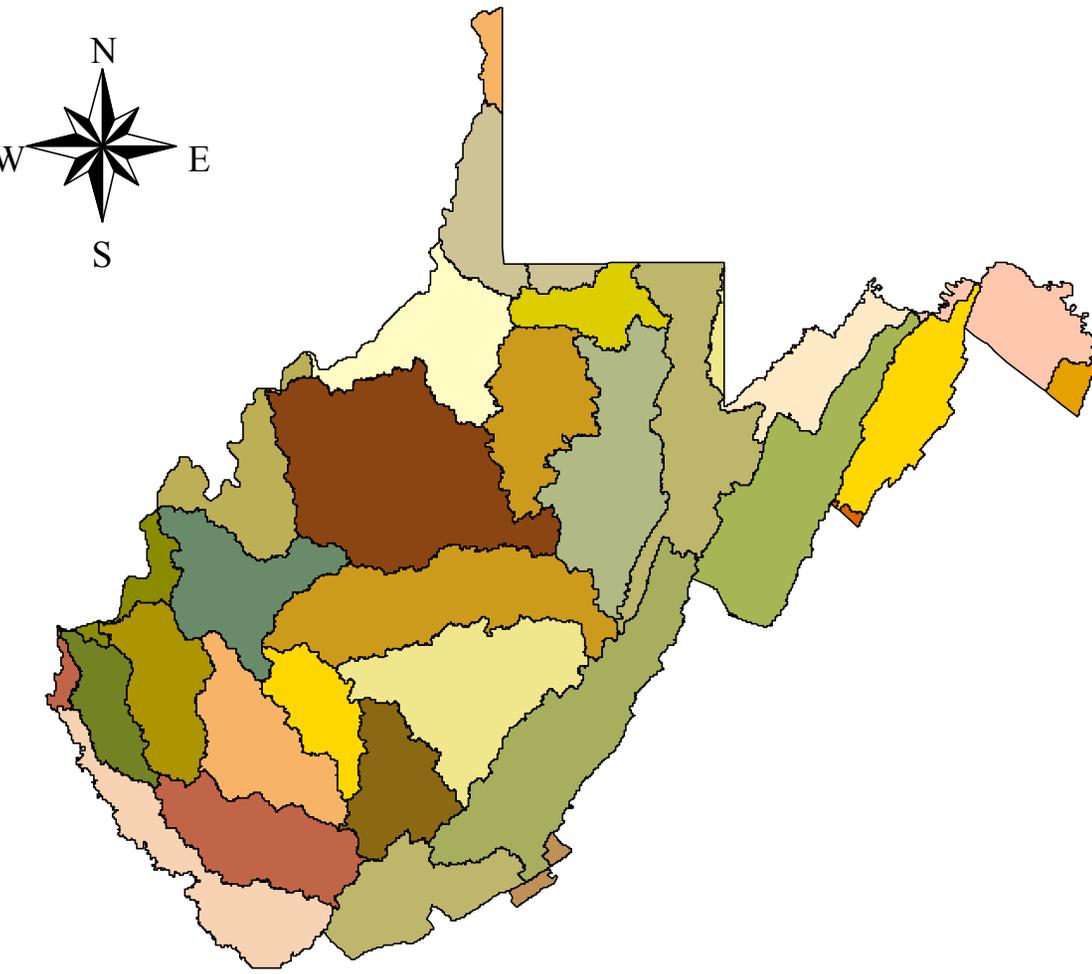
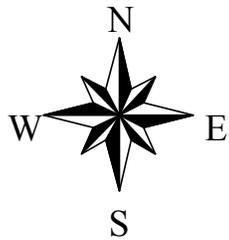
West Virginia DEP

Watershed Assessment Program

October 5, 2000



West Virginia's 32 Major Watersheds



- Watersheds**
- Big Sandy River
 - Cacapon River
 - Cheat River
 - Coal River
 - Dunkard Creek
 - Elk River
 - Gauley River
 - Greenbrier River
 - James River
 - Little Kanawha River
 - Lower Guyandotte River
 - Lower Kanawha River
 - Lower New River
 - Lower Ohio River
 - Middle Ohio River 1
 - Middle Ohio River 2
 - Monongahela River
 - N. Potomac River
 - Potomac River Drains
 - S. Potomac River
 - Shenandoah River 1
 - Shenandoah River 2
 - Tug Fork River
 - Twelvepole Creek
 - Tygart Valley River
 - Upper Guyandotte River
 - Upper Kanawha River
 - Upper New River
 - Upper Ohio River 1
 - Upper Ohio River 2
 - West Fork River
 - Youghiogheny River

Watershed Assessment Program

- **Watershed Assessments**
- **Citizens Volunteer Monitoring**
- **Large Stream Ambient Monitoring Network**
- **Fish Consumption Advisories**
- **Special Biologic Studies**
- **305(b) Reporting**
- **303(d) Listing**

TITLE 46
LEGISLATIVE RULE
ENVIRONMENTAL QUALITY BOARD

SERIES 1
REQUIREMENTS GOVERNING WATER
QUALITY STANDARDS



§46-1-1. General.

1.1. Scope. -- These rules establish requirements governing the discharge or deposit of sewage, industrial wastes and other wastes into the waters of the State and establish water quality standards for the waters of the State standing or flowing over the surface of the State. It is declared to be the public policy of the State of West Virginia to maintain reasonable standards of purity and quality of the water of the State consistent with (1) public health and public enjoyment thereof; (2) the propagation and protection of animal, bird, fish, and other aquatic and plant life; and (3) the expansion of employment opportunities, maintenance and expansion of agriculture and the provision of a permanent foundation for healthy industrial development. (See W. Va. Code § 22-11-2.)

1.2. Authority. -- W. Va. Code §22B-3-4.

1.3. Filing Date. -- June 1, 1999.

1.4. Effective Date. -- July 1, 1999.

§46-1-2. Definitions.

The following definitions in addition to those set forth in W. Va. Code §22-11-3, shall apply to these rules unless otherwise specified herein, or unless the context in which used clearly requires a different meaning:

2.1. "Board" is the Environmental Quality Board.

2.2. "Chief" is the Chief of the Office of Water Resources of the West Virginia Division of

Environmental Protection.

2.3. "Conventional treatment" is the treatment of water as approved by the State Health Department to assure that the water is safe for human consumption.

2.4. "Cumulative" means a pollutant which increases in concentration in an organism by successive additions at different times or in different ways (bio-accumulation).

2.5. "Designated uses" are those uses specified in water quality standards for each water body or segment whether or not they are being attained. (See section 5.2.)

2.6. "Dissolved metal" is operationally defined as that portion of metal which passes through a 0.45 micron filter

2.7. "Existing uses" are those uses actually attained in a water body on or after November 23, 1975, whether or not they are included in the water quality standards.

2.8. The "Federal Act" means the Clean Water Act (also known as the Federal Water Pollution Control Act) Public Law 92-500, as amended by Public Law 100-4, 33 U.S.C. 1251, et seq.

2.9. "High quality waters": are those waters whose quality is equal to or better than the minimum levels necessary to achieve the national water quality goal uses.

2.10. "Intermittent streams" are streams which have no flow during sustained periods of no

Title 46 Series 1

Requirements Governing Water Quality Standards

<http://www.state.wv.us/sos/adlaw>

Sampling Information

- **Ambient Network** - Sampling program designed to provide the Office of Water Resources with data about the water quality of major streams around the state.
- **Mini-ambient network** - Program designed to provide the Office of Water Resources with water quality data on selected streams for which little data was available or water quality problems are suspected.



Office of Water Resources

Division of Environmental Protection
West Virginia

The following information is being provided as a supplement to the West Virginia 1998 303(d) list. It is intended to explain the purpose and meaning of the list as well as provide an overview of the rationale used in its development.

Why is the list developed?

The Division of Environmental Protection (DEP), under the authority of the federal Clean Water Act, Section 303(d) and the U.S. Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations, 40CFR Part 130.7, is required to develop and submit to EPA on a biennial basis a list of water quality limited waters. A Water quality limited water can be defined as a waterbody which, due to pollution impairment, fails to meet state water quality standards.

Federal law requires that the state develop Total Maximum Daily Loads (TMDLs) for streams that are water quality limited. In simple terms, a TMDL is a plan of action that is used to clean up polluted waters. The plan includes 1) a pollution source identification/prioritization and 2) a strategy development for contaminant source reduction/elimination. Streams with a high TMDL priority (as indicated in the table) will be the first to have TMDLs developed. Those having medium and low priority will follow. Priority determinations were made after consideration of legal mandates, degree and number of impairments, degree of public interest, feasibility of restoration, and the timing relationship with the West Virginia Watershed Management Framework.

Many high priority waters are having TMDLs developed in accordance with a 1997 consent decree between EPA and the Ohio Valley Environmental Coalition, Inc. et al. In accordance with the consent decree select waters must have TMDLs developed by September 30, 1999. Others will be scheduled for TMDLs in accordance with West Virginia's Watershed Management Framework principles and as resources are made available. Generally, in a given year, TMDLs will be developed in those watersheds where DEP has recently completed its basin monitoring activities. DEP monitors the state's 32 major river basins on a five-year rotation (an average of 6-7 basins per year).

1998 TMDLs

Buckhannon River
Tenmile Creek of Buckhannon River
Lost River
Tomlinson Run Lake
Mountwood Park Lake
Hurricane Lake
Burches Run Lake

1999 TMDL considerations

Cheat River and its mine drainage impacted tributaries
Tygart River and its mine drainage impacted tributaries
Kanawha River (lower)
Armour Creek
Pocatalico River
Turkey Run Lake
Ridenhour Lake
Bear Rocks Lake
Castleman Run Lake

The ultimate goal of the TMDL process is to restore water quality limited waters so that they may be fully utilized for their many designated uses, such as fishing, swimming, and drinking water supply.

303(d) List Tables

The West Virginia 1998 303(d) list contains four separate tables of streams that DEP has determined to be water quality limited. In developing these tables, DEP utilized all existing and readily available water quality data from its own offices of Water Resources (OWR), Abandoned Mine Lands & Reclamation (AML), and Mining and Reclamation (OMRI). In addition, information was acquired from the WV Division of Natural Resources (DNRI), U. S. Geological Survey (USGS), U. S. Forest Service (USFS), U. S. Army Corps of Engineers (COE), Ohio River Valley Water Sanitation Commission (ORSANCO), National Park Service, and the states of Virginia, Kentucky, Ohio, Pennsylvania, and Maryland. Also, data generated by the Cacapon Institute and selected permitted facilities in the state were reviewed in making listing determinations.

As a general rule, in order for data to be used to make listing decisions, it had to be of adequate quality, quantity, and not more than five years old. Data greater than five years old was only used in cases where severe, chronic, and long term pollution problems have been documented.

1998 303(d) List Cover Page

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303(d) Listing

- List of streams that are *not meeting water quality standards* (numeric or narrative), subject to exceptions in listing criteria
- Required every 2 years by Clean Water Act
April 1, 2000 requirement dropped by US EPA
- Parallel process to 305(b) Reporting
- Listing considerations found in 40CFR130

1998 303(d) List

4 Groupings

Table A (Primary List) Large Rivers,
Larger AMD Streams, Lakes, Misfits

Table B (Mine Drainage)

Table C (Biologically Impaired)

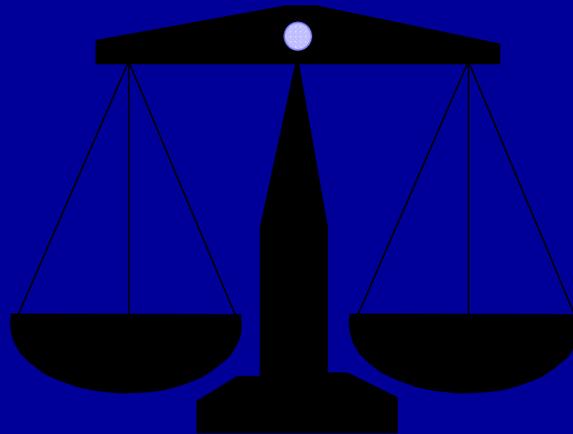
Table D (Acid Rain)

2002 Next 303(d) List - Anticipated Factors

- 1998 list will be used as a basis for listing
- Will incorporate WV TMDL Stakeholder Advisory Group recommendations
- Biologically impaired streams from Group B and C will be included.
- Increase in amount of facility data
- 1998 data criteria will be used
- Completed TMDL's remain on list

1997 Consent Decree

- OVEC and Highlands Conservancy vs. EPA
- Requires 44 TMDLs in 6 years
- 100 AMD TMDLs by 9/30/99 (extended)
- Cheat and Tygart TMDLs by 9/30/99 (extended)
- Balance of AMD TMDLs by 9/30/06 (extended)



Where have TMDL's been developed??

- Blackwater River (Dissolved Oxygen)
- South Branch Potomac River and several tributaries (Fecal Coliform)
- Lost River (Fecal Coliform)
- Buckhannon River (Iron)
- Tenmile Creek of Buckhannon (Aluminum and Iron)

Y2K TMDL's

(Iron & Aluminum)



- Little Kanawha River
- Reedy Creek
- Spring Creek
- Sand Fork
- Oil Creek
- Saltlick Creek
- Saltlick Pond #9 (Siltation)
- Pat's Branch (Cu, Fl)
- Ohio River (Dioxin)

FUTURE TMDL's

- 400+ Mining Impaired Streams
 - 100+ Biologically Impaired Streams
 - ??? Fecal Coliform Impaired Streams
-
- West Fork River
 - Elk River
 - Tug Fork River
 - Guyandotte River

**Iron,
Aluminum,
Lead, Zinc**

Cheat and Tygart TMDL's

- Due 03/31/2001
- EPA Contractor *Tetra Tech* - Tygart
- EPRI Contractor *Systech* - Cheat
- TMDL's will incorporate AMD tributaries
- Periodic modeling update meetings

How Will TMDL's Affect Permittees

- Possible loading reductions from existing discharges
- Possible water quality based permit limits
- Potential for trading (and cleanup may equal higher discharge limit)
- Better flow monitoring

What Should Permittees Be Doing?

- 1st - Determine if your receiving water is on the 303(d) list
- Consider a stream water quality monitoring effort
 - OWR data may be old
 - Affected length could be incorrect
 - Parameters incorrect
- Get involved/monitor the TMDL process

Newly proposed TMDL Regulations

- Changes 303(d) list schedule to 4 years
- Requires a 4 part list
- Requires submission of list methodology for EPA approval.
- Requires prioritized schedule for TMDLs for Part I of the list (Impaired waters)
- Initial schedule should allow completion of Part I TMDLs within 10 years. (Possible extension of 5 years if justifiable)

Newly proposed TMDL Regulations continued

- Reasonable assurances
 - (a) apply to pollutant
 - (b) implement expeditiously
 - (c) reliable mechanisms
 - (d) adequate funding
- Voluntary /incentive based programs are acceptable for NPS sources (such as 319)
- List can be modified between cycles
- 10 years to accomplish, (selected TMDLs may be extended up to 5 more years)
- Higher Priority is recommended for Drinking water violations & Endangered Species waters
- Increases minimum number of TMDL elements to 11

TMDL Required Elements (Proposed)

- Name & location of waterbody
- Identify pollutant and WQS standard
- Identify assimilative capacity
- Amount of deviation from capacity
- Identify source/s
- Wasteload allocations (NPDES)
- Load allocations (NPS)
- Margin of Safety
- Seasonal Variation
- Future Growth
- Implementation Plan

Needs for TMDLs

- Better Public Participation/Communication
- Ability to Construct Models within WV
- Lack of Data (Attempting to plan for future)
- Data Availability (system for submission)
- Methods to determine BMP effectiveness
- Answers for Implementation
- Cost effective AMD clean-up technology
- Adequate funding

TMDLs - not just another four letter word

Questions?

TMDLs

303(d) list