



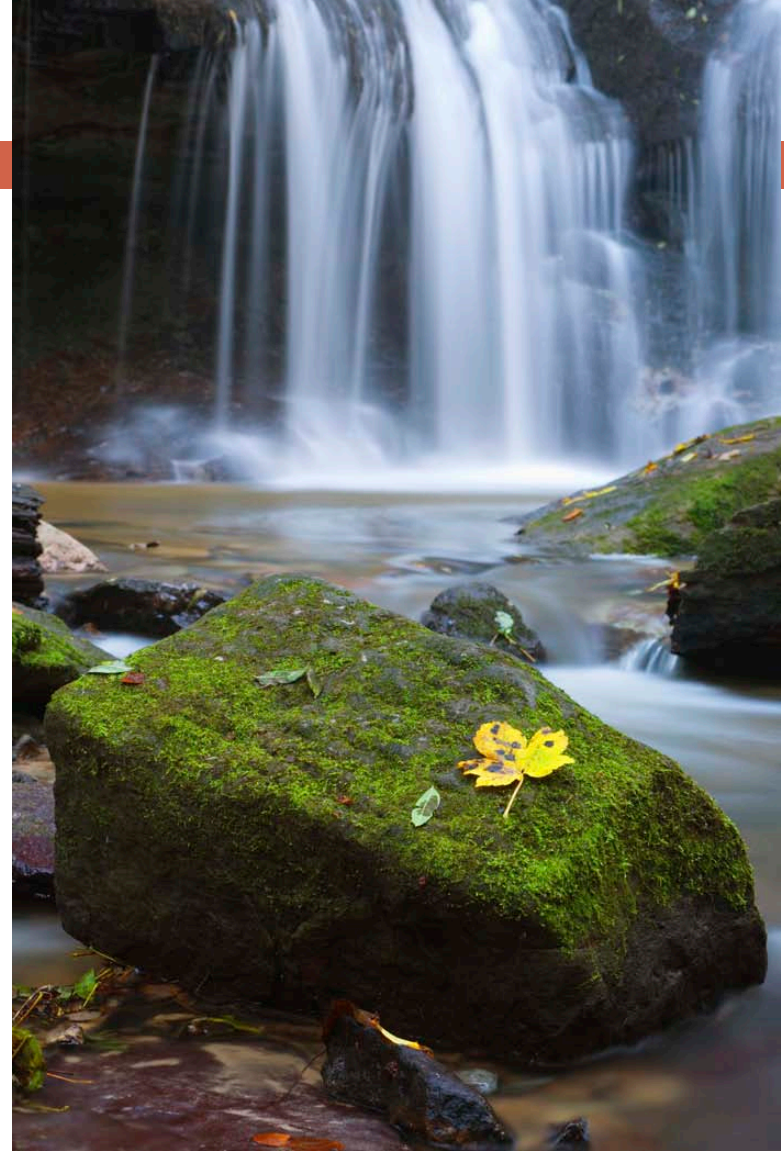
**Environmental  
Protection Agency**

# ORSANCO JUNE 2010

**George Elmaraghy, Chief, DSW**

# Overview

- Ammonia Criteria
- TDS Standard
- Mercury Trends
- Ohio River Basin Facilities Update



# Look Ahead

## U.S. EPA Draft Ammonia Water Quality Criteria



# U.S. EPA Ammonia WQC

- **Published DRAFT update of aquatic life water quality criteria for ammonia**
  - ▣ **Values more protective of freshwater mussels in accordance with latest science**
  - ▣ **Comment period ended April 1, 2010**

# U.S. EPA Ammonia WQC

	<b>Draft 2009 Ammonia Criteria (at pH 8, 25°C)</b>	<b>Current Ohio EPA WWH Criteria (at pH 8, 25°C)</b>
<b>ACUTE</b>	<b>2.9 mg/L mussels present 5.0 mg/L mussels absent</b>	<b>9.1 mg/L</b>
<b>CHRONIC</b>	<b>0.26 mg/L mussels present 1.8 mg/L mussels absent</b>	<b>1.0 mg/L</b>

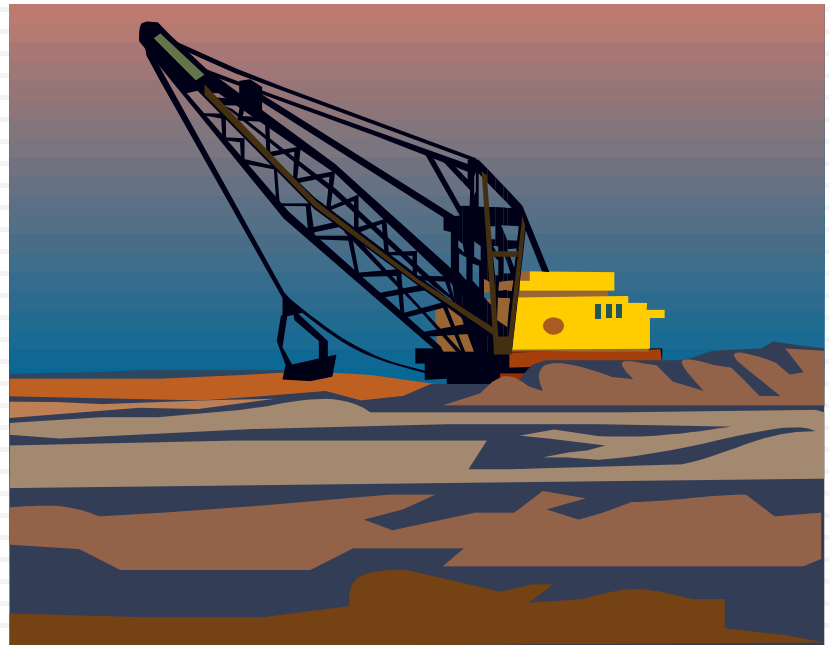
# U.S. EPA Ammonia WQC

## □ Ohio EPA's comments

- Majority of Ohio's streams and rivers would be impacted by mussel present criteria
- Upgrades of WWTPs may be necessary
- Concern that other factors such as habitat destruction and stream flow alterations may limit mussel population recovery even with ammonia loading reductions

# Look Ahead

## Appalachian Total Dissolved Solids Standard



# Ohio Water Quality Standard

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- **Total Dissolved Solids – 1500 mg/l (monthly average)**
- ▣ **Equivalent to 2400  $\mu\text{S}/\text{cm}^2$  specific conductance**



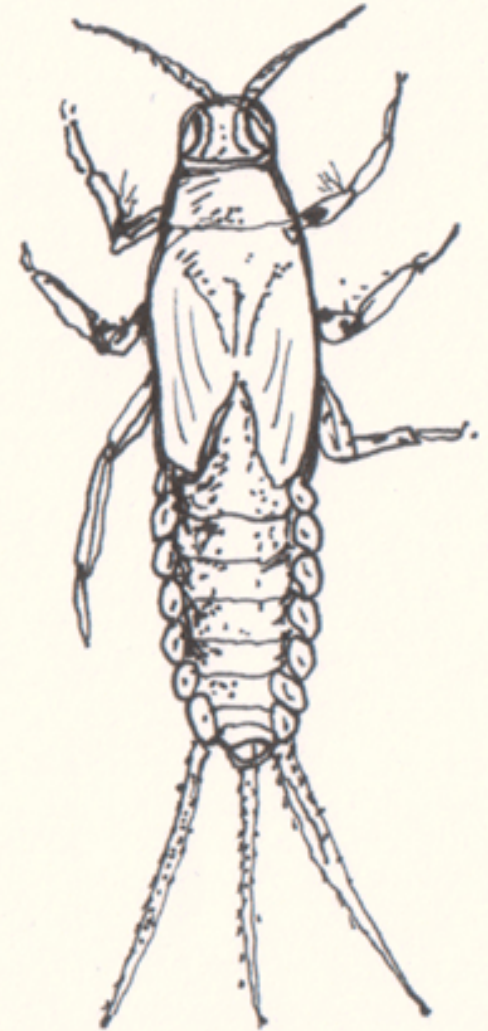
# Recent Federal TDS Studies

- ***A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams***
  - ▣ 300-500  $\mu\text{S}/\text{cm}^2$  conductivity needed for Appalachian waters (Need TDS)
  - ▣ No Ohio data used in analysis

<http://www.epa.gov/wetlands/guidance/mining.html>

# Ohio EPA Field Data

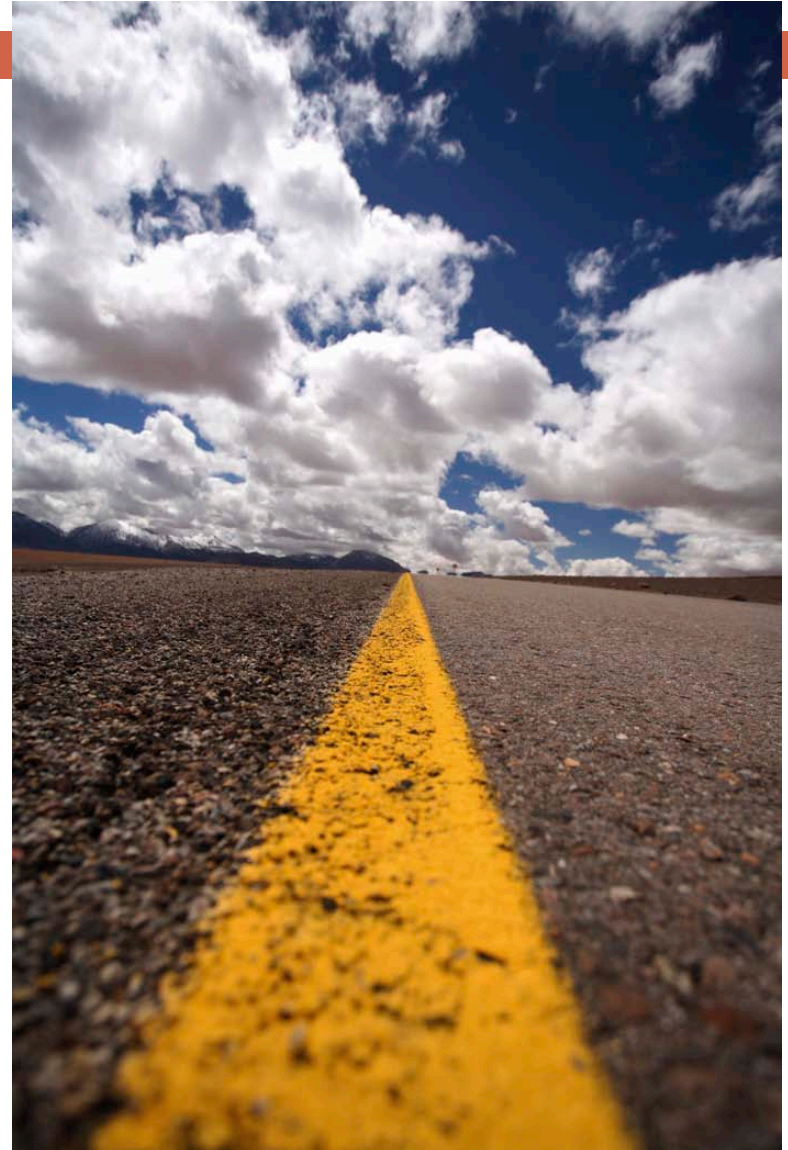
- Ohio EPA reference sites higher than federal criteria
- ICI and mayfly richness met at higher TDS
  - ▣ Work to date indicates ~800-1000 mg/l TDS



*Baetis sp. larvae*  
(Ephemeroptera)

# Ohio WQS Revision

- Ohio's water quality standard not protective of all streams
- Revised standard 2-3 years away



# Coal Mining Interim Permit Strategy

- General or Individual permits with
  - ▣ Current TDS WQS, biological monitoring, adaptive management plan
  - ▣ Current TDS WQS, whole effluent toxicity limit (based on both *C. dubia* and a mayfly/stonefly species), biological monitoring, adaptive management plan
  - ▣ Limits for sulfate and chloride (based on numeric translation of narrative standards), with or without current TDS WQS

# Fish Tissue Analysis Trends

## Mercury & PCBs



# Fish Tissue Mercury & PCB Trends

- Analysis of fish tissue database 1993-2008
- Lake Erie and Ohio River
  - ▣ Results for both water bodies similar
  - ▣ PCBs seem to be decreasing or leveling off, mercury seems to be increasing in fish tissue

# Fish Tissue Mercury & PCB Trends

	Geomean Hg ppb ('01-'08)	% Hg Change '93-'00/'01-'08	Geomean PCBs ppb ('01-'08)	%PCB Change '93-'00/'01-'08
Lake Erie – Trophic Level 3 (n=180, 129)	93	↑ 37%	311	↓ 43%
Lake Erie – Trophic Level 4 (n=199, 179)	156	↑ 70%	271	↑ 38%
Ohio River – Trophic Level 3 (n=74, 177)	95	↑ 73%	387	↓ 20%
Ohio River – Trophic Level 4 (n=276, 113)	134	↑ 49%	271	↓ 1%

# Fish Tissue Mercury & PCB Trends

## □ Additional Results

- Inland lakes - Both mercury and PCBs appear to be declining overall
- Large rivers – PCBs have either leveled off or are decreasing slightly; Mercury has increased by an avg of 50% (1993-2000 vs. 2001-2008)





# Facilities Update



# Jefferson County

- **Steubenville – Contempt of Consent Order requiring submission of LTCP.**
  - ▣ **LTCP finally submitted June 2009, review complete.**
  - ▣ **Amended orders sent to city for review.**
  - ▣ **Non-compliance update – one time fecal coliform violation attributed to operator error; back in compliance.**

# Monroe County

- **ORMET – Non-compliance update**
  - ▣ **Dec 22, 2009 DFFOs require facility to address numerous NPDES violations (pH, cyanide, chloride, copper, nickel, aluminum).**
  - ▣ **As part of settlement, facility submitted detailed compliance plan and took immediate action to return to compliance.**

# Gallia County

- Gallipolis - Source of high bacteria found by ORSANCO has been identified as an overflow from Spruce Street lift station – not at mouth of Chickmanauga Creek.
- ▣ Also found some isolated drainages directly to Ohio River containing high bacteria last summer/fall.
- ▣ Working with city officials towards resolution of problem.

# Scioto County

- **New Boston – U.S. EPA required submittal of LTCP by March 2007.**
  - ▣ **Plan not submitted as required.**
  - ▣ **U.S. EPA has lead and plans to meet with village officials this summer.**
- **Portsmouth – Submitted revised LTCP in June 2009.**
  - ▣ **U.S. EPA has lead and has reviewed plan.**
  - ▣ **Mayor has indicated LTCP will be revised to meet U.S. EPA's requirements.**

# Lawrence County

- **Union Rome – Non-compliance update**
  - ▣ **New \$25 million WWTP on-line last year; should resolve compliance issues. Only 2 minor pH violations since then.**

# Adams County

- **DP&L Stuart – Non-compliance update**
  - ▣ Issued PTI for system to address hex chrome violations.
  - ▣ Outfall 609 CBOD and TSS exceedances related to new WWTP startup; plant performing well and no exceedances after Dec. 2009.
  - ▣ Outfall 019 TSS exceedances from settling pond were caused by heavy rains in Sept. & high winds during Feb. Facility proposed closing discharge valve during heavy rains and high winds to store water as long as possible. Outfall discharges to wetland for additional polishing before Ohio River.
  - ▣ Outfall 012 exceedance caused by failure of bottom ash pond filtration system, filters evaluated and problem corrected.

# Clermont County

- **Duke Energy – Beckjord – Non-compliance update**
  - ▣ **TSS violations were limited in duration and involve 2 different outfalls**
  - ▣ **Reporting violation not a violation – report has been received but not entered into SWIMS**



# Hamilton County

- **Implementation program details for MSD Consent Decree submitted to judge for modification of CD. Sierra Club submitted comments on proposal.**
- **MSD began work on new grit facilities at Mill Creek WWTP and modification to secondary clarifiers.**
  - ▣ **Both changes limit wet weather flow during construction, ~ 2 years.**
  - ▣ **Flow capacity greatly increase upon completion.**

# Hamilton County Cont.

- **Duke Energy – CG&E Miami Fort Station – Non-compliance update**
  - ▣ **Reporting violation not a violation – report has been received but not entered into SWIMS**

# Contact Information

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