

# DEP Water Quality Standards Program

## Semi-Annual Public Meeting

### August 30, 2012

Protecting the environment depends on us.



Division of Water and Waste Management



# Meeting Agenda/Overview

- Intro/WQS meeting purpose/goals
- ORSANCO PCS overview
- Algae sampling overview/updates
- Overview of preparation for Triennial Review
- Other agency news/updates
- Open forum/adjournment



# Meeting Purpose/Goals

- Previous feedback:
  - Need more outreach for WQS Program
- Public Meetings:
  - Informal format
  - Not bound by formal hearing procedures
  - Present information/gain feedback



# Meeting Purpose/Goals (cont.)

- Information/Topics:
  - WQS Program related (47CSR2)
    - *46CSR6*
  - DWWM news/info
  - Other agency info (EPA, ORSANCO)
  - Other news/announcements
- No formal decisions/commitments



# Meeting Purpose/Goals (cont.)

- 2011 schedule ~Quarterly\*
- 2012 schedule:
  - “Semi-Annual”
    - ~~April~~, August, December  
*(November)*
    - Tentatively last week/end of the month



**Proposed 2012 Revisions to  
ORSANCO  
Pollution Control Standards**

# Pollution Control Standards for the Ohio River

- 1) Proposed 2012 PCS Revisions
- 2) Consideration of PPG Variance Request
- 3) Draft Variance Process

# Proposed 2012 Standards Revisions

- 1) Reorganization of standards document to enhance its usability.
  - Temperature criteria for aquatic life revised.
  - Temperature criterion for human health added.
  - Selenium criteria revised.
  - Contact Recreation Criteria revised.
  - Variance section revised.



# Document Reorganization

## Content of 2011 Standards

- Authority and Purpose
- Definitions
- Designated Uses
- Water Quality Criteria
- Waste Water Discharge Requirements
- Mixing Zone Designation
- Limitation
- Variance
- Analytical Methods
- Severability Clause
- Appendices

# Content of Proposed 2012 Standards

## Chapter 1: General Provisions

- Authority & Purpose
- Definitions
- General Conditions
- Limitations
- Severability
- Variances
- Site Specific Criteria

## Chapter 2: Designated Uses

## Chapter 3: Water Quality Criteria

- Summary Table of Criteria (Added)
- Aquatic Life
- Human Health

## Chapter 4: Mixing Zones

## Chapter 5: Wastewater Discharge Requirements

# Temperature Criteria for Aquatic Life Protection

- Revisions based on more recent scientific data on temperature endpoints for aquatic life and more recent ambient temp data for the Ohio River.
- Justification
  - Existing criteria have been in place since 1980's.
    - Current summer criteria based on biological endpoint studies conducted in 1970's.
- New criteria are segmented into upper, middle & lower sections of the river to reflect differences in temperature regimes.
- Recommendations developed by temperature work group of experts including states, USEPA, Power Industry, Fish & Wildlife, others.

Time Period	Current °F	Averages of Proposed Daily Maxima °F		
		<u>Upper</u>	<u>Middle</u>	<u>Lower</u>
January 1-31	50	45.7	46.8	49.3
February 1-29	50	44.0	48.1	48.7
March 1-15	56	49.0	55.2	53.0
March 16-31	59	54.1	60.0	57.2
April 1-15	64	59.1	64.9	61.4
April 16-30	69	64.1	69.5	65.4
May 1-15	73	69.0	74.2	69.4
May 16-31	80	74.1	79.0	73.6
June 1-15	85	80.0	84.1	78.8
June 16-30	87	87.8	87.8	87.8
July 1-31	89	87.8	87.8	87.8
August 1-31	89	87.8	87.8	87.8
September 1-15	87	84.1	86.1	85.0
September 16-30	86	84.1	86.1	85.0
October 1-15	82	76.2	79.2	77.7
October 16-31	77	71.6	73.8	72.9
November 1-30	72	64.7	65.9	65.8
December 1-31	57	55.5	55.3	56.5

# Temperature Criterion for Human Health Protection

- To protect human health from exposure to contact with water; to prevent burns.
- Maximum temperature of 110 deg F.
- Applies where public access is possible.
- Temperature workgroup recommended 116.5 deg F
  - Prevent 2<sup>nd</sup> degree burns in children with 8-20 minute exposure.
  - Standards Committee felt this was not protective enough.

- American Burn Association – Scald Injury Educator’s Guide
  - 5 min exposure to **120** = adult 3<sup>rd</sup> degree burn
  - Children have thinner skin & less surface area
- PADEP
  - Public safety value = **110**
- WHO
  - Hot tub temperatures should be **<104**
  - = prolonged exposure (15-20 min)
- Antiscald Inc (based on Moritz & Henriques 1947)
  - **120** = 2<sup>nd</sup> degree burn in 8 min
    - Pub says 9 min 30 sec to 2<sup>nd</sup> degree burn at 120.2 degrees
  - **118.4** = 2<sup>nd</sup> degree burn in 15 min
  - **116.6** = 2<sup>nd</sup> degree burn in 20 min (25 according to original pub)
  - **113** = 2<sup>nd</sup> degree burn in 2 hours
- Diller 2006
  - Reduce temp standards by **3-4** degrees to apply to children
- Huyer et al 1997
  - **108-113** = “too hot for activities; threshold for sensation of pain in adults”

# Recreational Use Criteria

- 1) Recreation season extended from May-Oct to Apr-Oct.  
Based on 2009 Recreational Use Study
- 2) Revisions based on USEPA's proposed criteria:
  - a) Fecal coliform criteria removed.
  - b) Monthly geometric mean E. coli criterion of 130/100mL revised to 90-day geometric mean criterion.
  - c) Single sample monthly max E. coli criterion of 240/100mL revised to not to be exceeded in more than 25% of samples in 90 day period.

# Selenium Criteria

- Current Selenium Criteria are considered outdated.
- US EPA is said to be close to issuing new criteria for 2-3 years now.
- Reluctant to delete criteria without replacement.
- Acute aquatic life criterion of 20 ug/L removed while the chronic aquatic life criterion of 5 ug/L has been retained.



# Revisions to Variance Section

- 1) Removed provision requiring concurrence from all affected states that a variance would be considered.
- 2) Added a statement that ORSANCO would ensure that state's regs would allow the requested variance.
- 3) Added a provision that approved variances would become part of the standards.
- 4) Variance may be granted for "life of permit" revised to "not to exceed 5 years."  
\*\* This revision based on public comments.

# PCS Review Process

- Public Comment Period Opened May 11, 2012.
  - Several hundred postcards.
  - Several thousand emails.
  - Public notice to newspapers basin-wide.
- Webinars held May 24, 2-4PM & May 30, 6-8PM.
- Hearing June 19, 2012, 4-7PM, Cincinnati Airport Holiday Inn.
- Comment period closed July 20, 2012.
- Commission Action on Proposed Revisions October 11, 2012.

# Comments Received on Standards

- About two dozen comments received.
- All proposed revisions supported by one or more commenters.
- Ohio Utility group comments on human health temperature criterion.
  - Not expected to change proposal.
- KWA,ORF comments on move to 90-day assessment period.
  - Not expected to change proposal.
- Comment on validity of temp criteria for aquatic life.
  - Staff currently reviewing.

# PPG Variance Request

- Standards eliminate mixing zones for bioaccumulative chemicals of concern as of October 2013.
- Would require discharges meet mercury criterion 0.012 ug/L at end of pipe.
- PPG not able to meet this standard.

# PPG Variance Request

- Made public notification within 30-days of receipt of PPG's request.
- Initial information submittal and two subsequent submittals from ORSANCO's info requests.
- Site visit with WVDEP made.
- Initial public comment period late 2011
  - Received 1000's emails against variance.

# Standards Committee Preliminary Decision to Recommend Commission Approval at October, 2012 Meeting

- Held 2<sup>nd</sup> public comment period which ended in July.
- Received 116 comments in favor of variance & 87 against.
- Specific comments received from 5 sources.
- Majority of comments will not result in revising the proposed approval.

# Specifics of Proposed Approval

- 1) Variance not to exceed 5 yrs beginning Oct 16, 2013.
- 2) Monthly avg limit not to exceed 55 ng/L.
- 3) WVDEP may establish daily max limits.
- 4) Submitted mercury reduction plan must be fully implemented (attached).
- 5) Annual progress reports required.

## Specifics (cont.)

- 6) Monthly Ohio River instream sampling required to demonstrate compliance with 12 ng/L Tot Hg criterion outside the mixing zone.
- 7) Commission shall have sole authority to modify, renew or revoke the variance.
- 8) Variance would not limit WVDEP's authority to impose additional or more stringent requirements.



# Specifics (cont.)

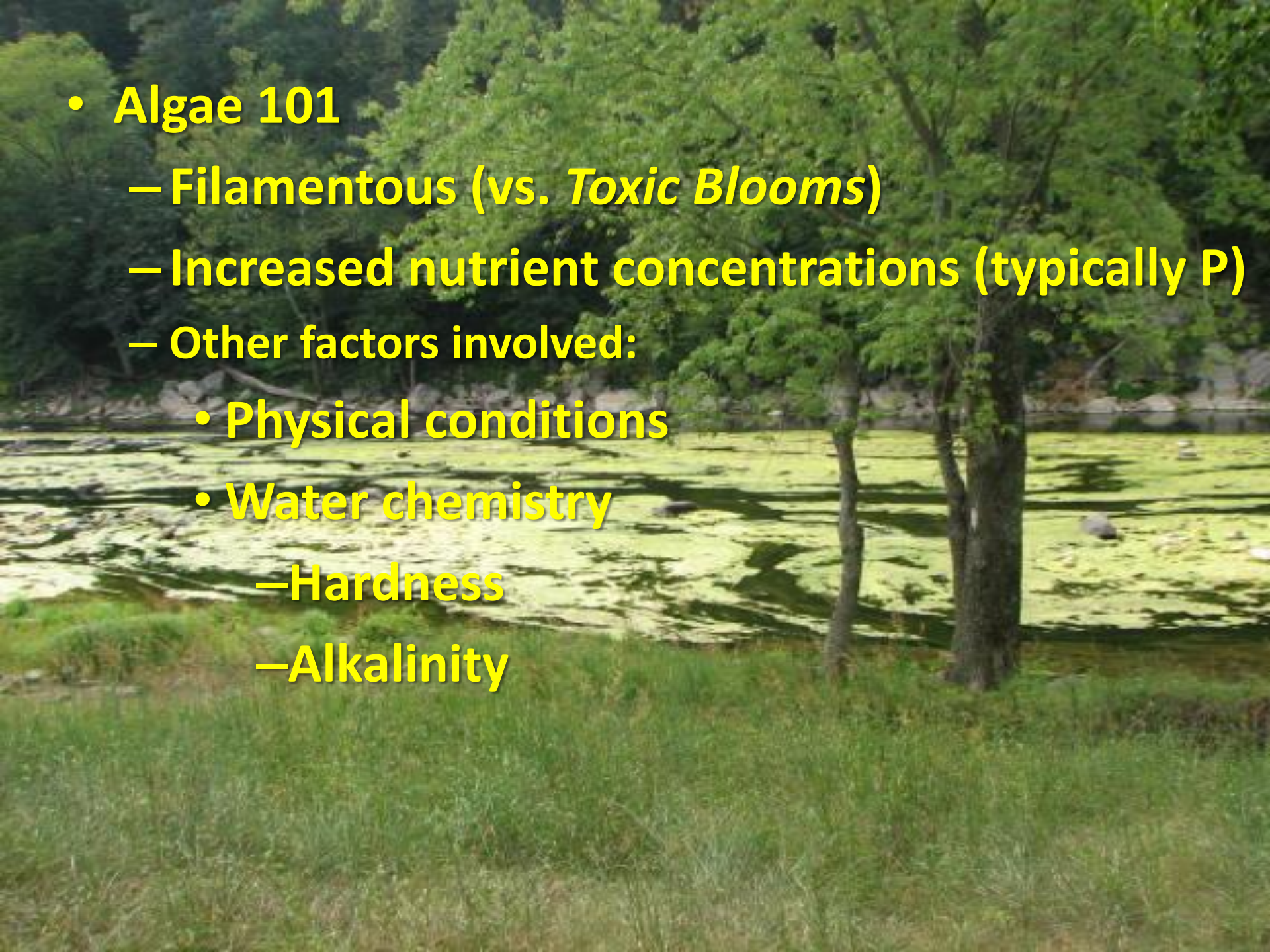
9) Annual fish tissue monitoring will be required.

\*\*\*Based on public comment received.

Questions?

# Algae 2012 Sampling



- 
- **Algae 101**
    - **Filamentous (vs. *Toxic Blooms*)**
    - **Increased nutrient concentrations (typically P)**
    - **Other factors involved:**
      - **Physical conditions**
      - **Water chemistry**
        - **Hardness**
        - **Alkalinity**

# Below White Sulphur Springs



# Below Ronceverte



# Cacapon River



# Ventura River, CA





# 2012 Algae Sampling

- Continue Greenbrier River sampling
- Cacapon River/South Branch Potomac
  - Potential partnership with Interstate Commission on the Potomac River Basin (ICPRB)
- Tygart River
  - Cooperative effort with TMDL sampling
- Continue observations in Bluestone, Hughes, other systems



# 2012 Algae Sampling

- DEP/ICPRB sampling
  - Worked with DEP before, staff in area (vs. staff from HQ) saves time/\$\$
  - S Branch Potomac, *Shenandoah*, Cacapon Rivers
  - Monthly WQ and algae = increased coverage/data in priority watersheds
  - Effort started in early summer (June/July)



# 2012 Algae Sampling

- DEP sampling
  - Greenbrier and Tygart Rivers
    - WAB staff (TMDL field crews)
- DEP WAB - SOP for algae sampling, part of WAB 2013 SOP - other states testing/using
- Webpage - “*Filamentous Algae in West Virginia*”





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## Filamentous Algae in West Virginia



### What is Filamentous Algae

Filamentous algae are connected algae cells that grow and form long threads or filaments. When growth is excessive, large mats can form that stretch from the river bottom to the surface and cover significant portions of a river reach. The term "Filamentous Algae" refers to any number of species that can be found in rivers and streams. There are numerous species of

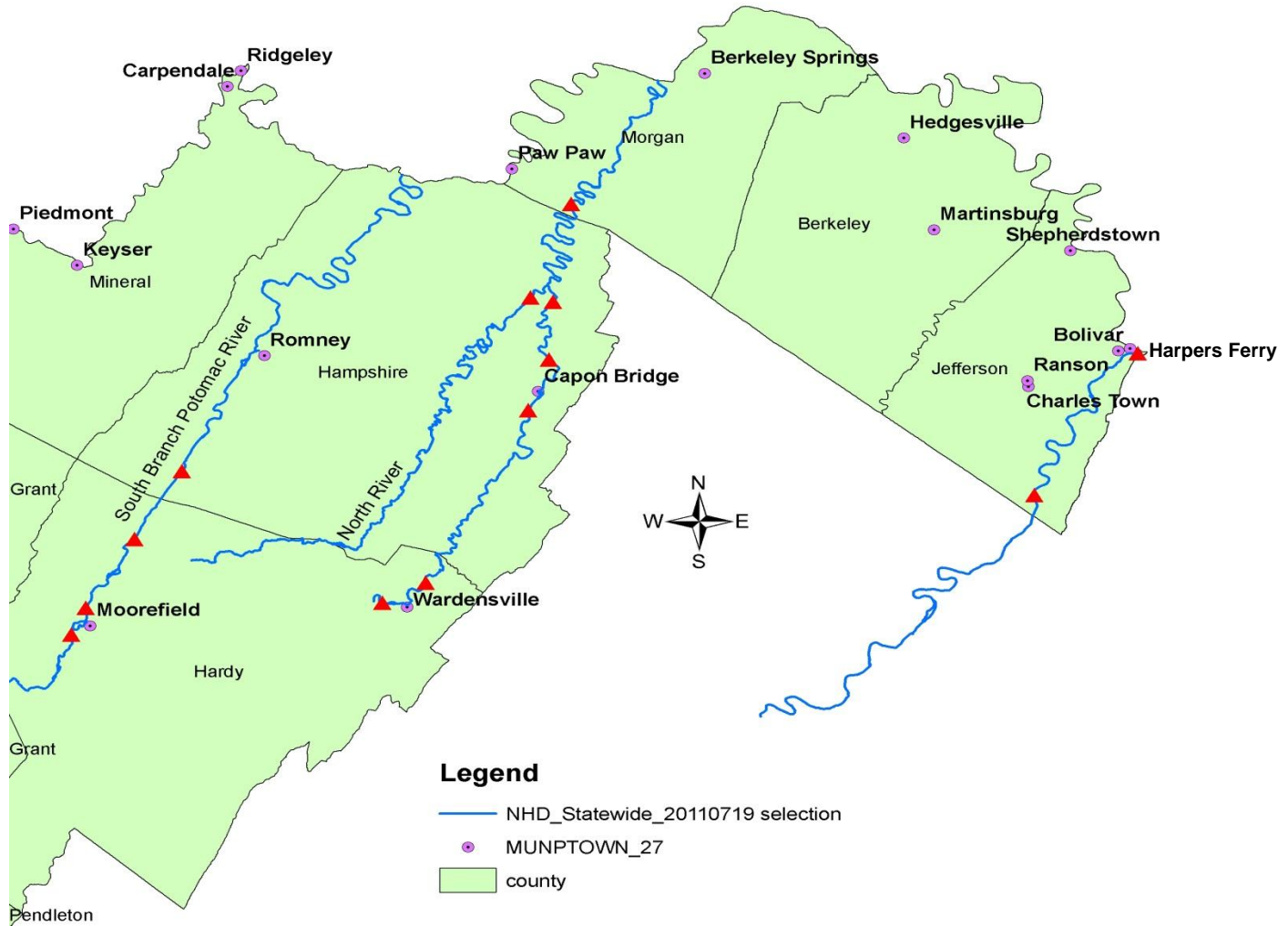


# 2012 Algae Sampling

- ICPRB sampling
  - Monthly WQ and algae
    - *S Branch Potomac* - 4 sites
      - Above/below Moorefield, upper Trough, lower Trough
        - Brackets new WWTP location



# Eastern Panhandle Nutrient Sampling 2012

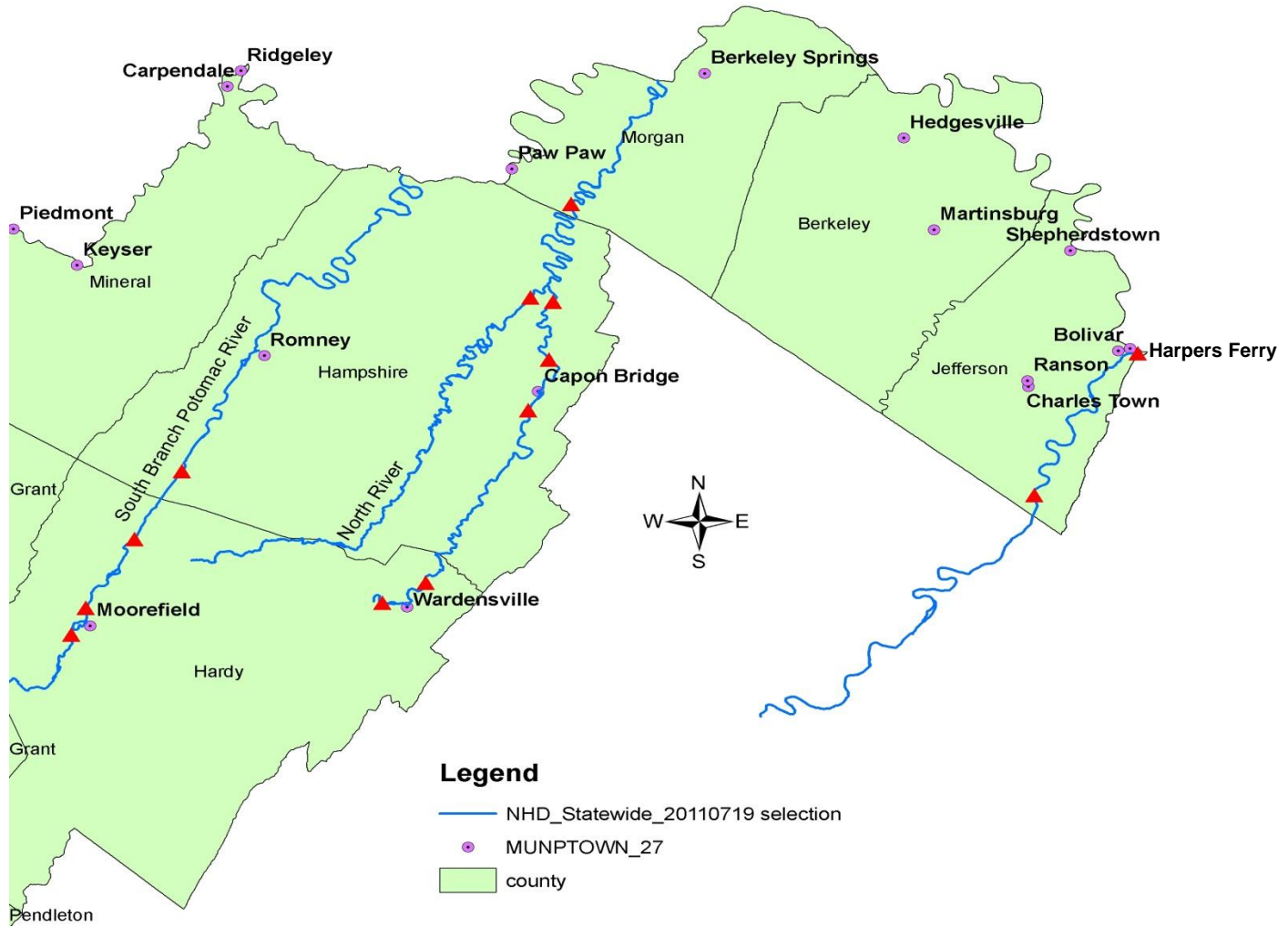


# 2012 Algae Sampling

- ICPRB sampling (cont.)
  - Monthly WQ and algae
    - *Shenandoah* - 2 sites
      - @/ just below VA/WV state line, above confluence w/ Potomac
        - Very little data on this section of the river



# Eastern Panhandle Nutrient Sampling 2012



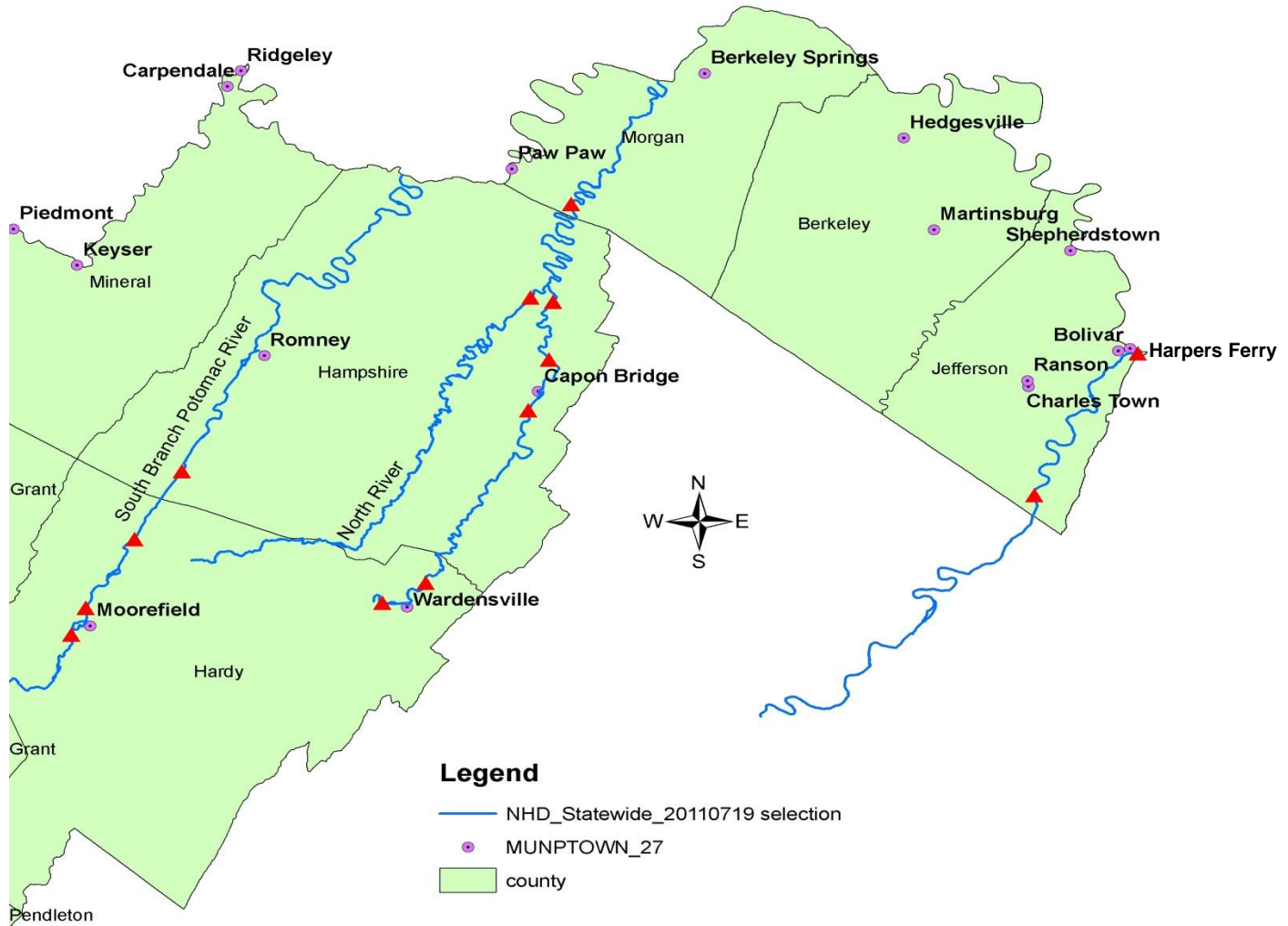


# 2012 Algae Sampling

- ICPRB sampling (cont.)
  - Monthly WQ and algae
    - *Cacapon* - 7 sites
      - Above/below Wardensville, Capon Bridge, downstream Capon Bridge, North River @ Forks, Rt. 127 crossing, Largent



# Eastern Panhandle Nutrient Sampling 2012



# 2012 Algae Sampling

- DEP sampling
  - Greenbrier and Tygart Rivers
  - Greenbrier - continued efforts similar to previous years (both WQ and algae)
  - Tygart - sampling conducted by TMDL staff, some WQ taken but limited algae measures



# 2012 Algae Sampling

- What have we found:
  - *S Branch Potomac* - Algae levels and WQ N/P as expected (*no surprises*)
    - *Interest in post WWTP construction*
  - *Shenandoah* - Building dataset
  - *Cacapon* - WQ N/P low, algae levels being evaluated



# 2012 Algae Sampling

- What have we found:
  - *Tygart* - Algae levels and WQ being evaluated
  - *Greenbrier* - 1<sup>st</sup> algae sampling trip = lower levels in upper portion of river
    - Evaluating reasons why? Flow & environment ripe for bloom!!!

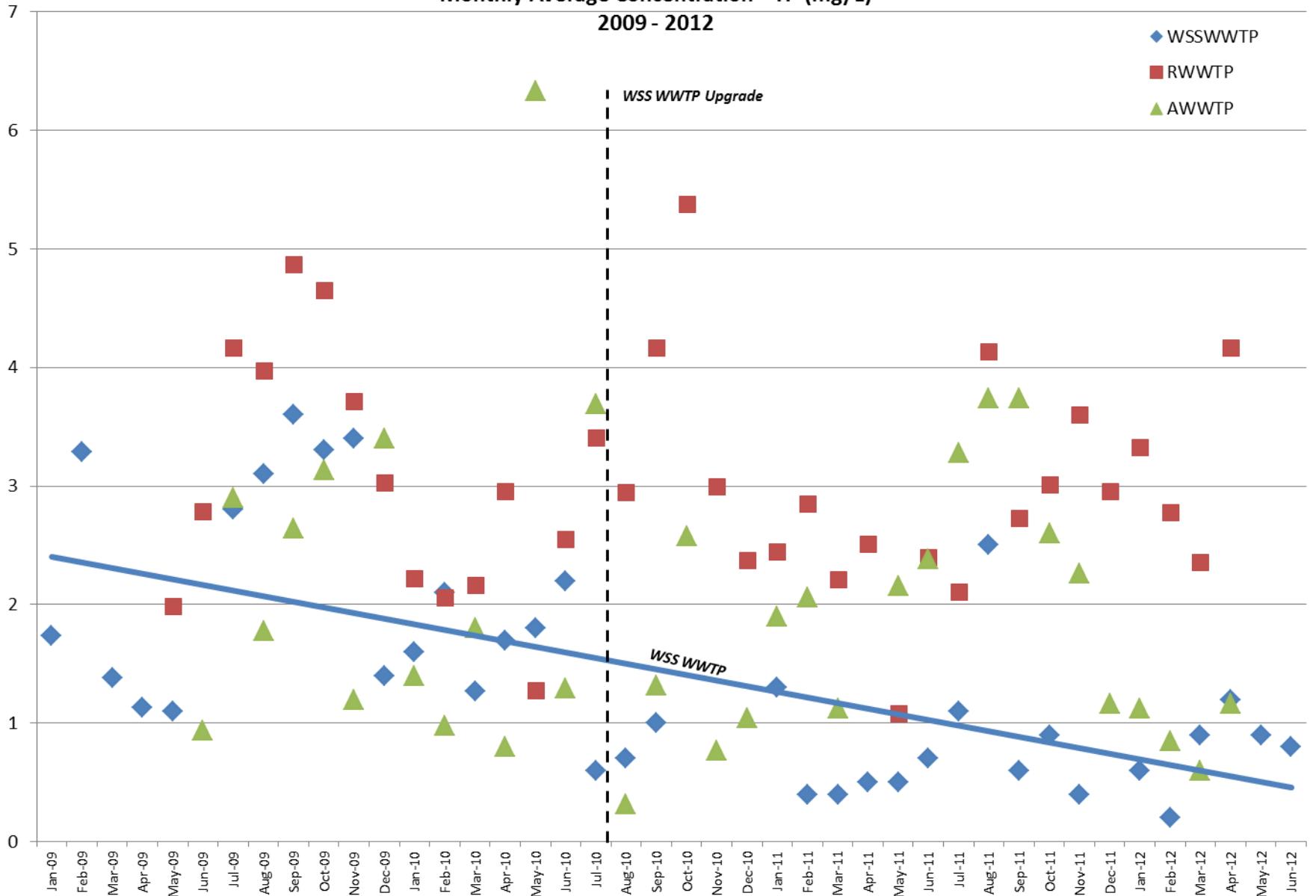


**Draft - DMR Data**

# Greenbrier River - WWTPs

Monthly Average Concentration - TP (mg/L)

2009 - 2012



# Algae Questions?



# 2014 Triennial Review

- CWA requirement - state must review WQS (47CSR2) every three years
- Triennial review requirements/basic procedures:

2013

- Environmental Advisory Council
- Public comment/response
- Public hearing
- Submitted for approval during 2014 Legislative session, passed by Legislature, signed by Gov.
- Final approval (“*effective*”) by EPA ~ 2014/2015





# 2014 Triennial Review (cont.)

- Prep for 2013 efforts
- Solicitation for comments
  - Not a requirement but done in the past - starts the outreach process early
  - Revisions = additional criteria, update to current criteria, removal of criteria...
    - Any submission must have scientific justification for the revision



# 2014 Triennial Review (cont.)

- Tentative list of potential revisions\*:
  - Bacteria - pending EPA approval, Fecal to E. coli
  - Revise final piece of lakes nutrient criteria
  - Reviewing hardness based Al criteria (Cat. B)
  - Revising Beryllium - match EPA criteria
  - Site-specific Zinc
  - Selenium (EPA), potential site specific
  - Bromide (no recommended criteria at this time)



\*Not complete list, only draft for presentation purposes

# 2014 Triennial Review (cont.)

- 2012 Plan:
  - Solicitation of comments (open ~Sept.)
    - 30 day “submission” period (end ~ October)
  - November - Public meeting
    - Review/overview of submissions
    - Allow brief presentations by submitters if they wish
    - Review timeline/process for 2013 during meeting



# 2014 Triennial Review (cont.)

- 2013 Process Overview (post 2012 solicitation)

- ~ January - March

Review of scientific information, fact gathering, drafting of rule revisions (public meetings(s) as needed)

- April

Public meeting - Review of proposed rule revisions

- May

Proposed rule to DEP Advisory Council

- Early Summer (~June)

Notice of public hearing/comment period

- Mid Summer (~July)

Public hearing

*\*The above timelines are approximate only and subject to change*



# 2014 Triennial Review (cont.)

- 2013 Process Overview (post 2012 solicitation)

- Late Summer (~August)/Fall

Filing of Agency Approved Rule/response to comments w/ Legislative Rulemaking Review Committee, for consideration that fall

- January - March 2014

Agency Approved Rule in Legislature

- ~April/May 2014

Filing of Final Legislature Approved Rule w/ SOS

- July 2014

Rationale & Final Rule to EPA for approval

- 2014/2015

EPA Approval(?)

*\*The above timelines are approximate only and subject to change*



# WQS Program Update

- Continue application reviews
- Continue preparation for Triennial Review
- 46CSR6 - Wanted to address summer, now ~ fall 2012
  - WVDEP “*Procedural Rule*”
    - Unlike “Legislative Rule” does not go through same process

Edits:

~~*Environmental Quality Board*~~ *Department of Environmental Protection*

~~*Chief*~~ *Secretary*



# Agency Updates

## EPA/ORSANCO

- EPA
  - Bacteria - Fecal to *E. coli*
    - Draft posted, comments posted to EPA website, ~ finalized end of 2012/early 2013 (*consent decree*)
- ORSANCO
  - PCS meeting in October



**Thank you**  
**Next meeting - November 2012**  
**Questions? Comments? Discussion?**



Division of Water and Waste Management

