MAIA on the Piedmont

Drinking Water Program Concerns for the Piedmont Region

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Piedmont, People and Potable Water Supplies

- Greatest population density
- Fastest growing population centers
- High concentration of drinking water sources
- Heavy rainfall = heavy runoff
- Combination of GW and SW sources offers challenges of protecting both

Piedmont, People and Potable Water Supplies

- Urban sprawl will someday be limited not by availability of sewage treatment works but availability of high quality sources of water for human consumption
- Water Resource availability should also be a part of this effort, some way, some how.

New Regulations - Oey!

- Host of new or revised regulations that have impacts in the piedmont region
- Some still under development
- Most of them need more data
- Expensive capital improvements
- Vast workload for state agencies
  - prioritization means decisions must be made

New Regulations - Oey Oey!

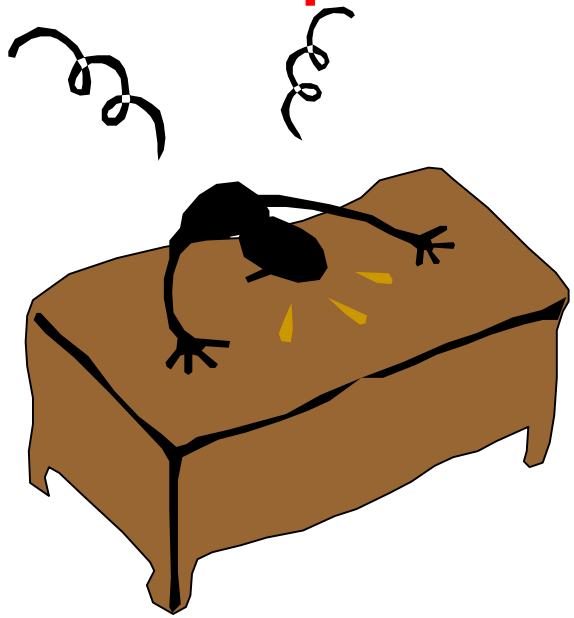
- Interim Enhanced Surface Water Treatment Rule (ESTWR)
- Radionuclides
- Consumer Confidence Report Rule

New Regulations - Oey Oey Vey!

- Future Rules
  - Radon
  - Ground Water Rule
  - Long Term 1 ESWTR
  - Long Term 2 ESWTR
  - Stage 2 Disinfectants/Disinfection Byproduct Rule (D/DBP)

New Programs - Thwap!

- Source Water Assessment & Protection
- Capacity Development
- Operator Certification
- State Revolving Fund Program



Radionuclides

- Do we have problems?
  - Uranium
    - where is it?
    - Is it a problem?
  - Radium
    - 226/228 still a problem?
    - 224 - in Piedmont?

Pathogens

- Ground Water Rule
  - Sensitive Aquifer analysis
    - SW/GW interactions - nitrate, also
  - Complications in transport determinations & TOT
    - karst -
    - fractured rock
    - well structure - vertical transport
    - organism specific issues - good indicators?
      - virus
      - bacteria
        - » *Helicobacter pylori*

Pathogens

- Enhanced Surface Water Treatment Rule
  - *Cryptosporidium sp.*
    - occurrence
    - viability
    - infectivity
  - Other organisms of concern?

Arsenic

- Whatever the MCL……
  - occurrence data at public water supplies not readily available
  - need better understanding of associated geology
  - better predictors of concentration needed

Radon

- Occurrence info is improving
  - some states need a better estimate
- Associated geology pretty well known
- Spotty occurrence creates uncertainty

Ecology/Human Health Integrated Assessment

- Linkage to the SDWA a must!
  - Source water quality
  - Occurrence of regulated contaminants or their sources
    - anthropogenic
    - naturally occurring

Source Water Assessment/Protection Efforts

- Single most likely link between MAIA and the SDWA
- Prioritization of resource restoration around the human health goal of clean and safe water
  - Targeted restoration projects should focus on landscapes where protections of public health will be obtained

Source Water Assessment/Protection Efforts

- Landscape/Land use vs. Source Water Condition
  - Identify areas with highest probability of contaminants
    - pathogens
    - chemical contaminants
  - help water suppliers prioritize protection efforts

Source Water Assessment/Protection Efforts

- UST & PWS GIS Pilot in Virginia
  - proximity of USTs to wells
  - vulnerability estimate
  - prioritize tank inspections
  - prioritize source water assessment and protection efforts

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