

pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Clean Water

PFAS – Surface Water Monitoring

Citizens Advisory Council Meeting

September 17, 2019

Tom Wolf, Governor

Patrick McDonnell, Secretary

Bureau of Clean Water - PFAS

- Currently, there is no guidance from EPA regarding surface water quality standards for PFAS compounds.
- Currently, there is no implementation of water quality standards through permitting or assessment of surface waters.
- While there is some localized PFAS surface water data, there is no statewide, comprehensive dataset to inform the development and implementation of a statewide monitoring strategy, water quality standards, assessment methods or permitting.

Bureau of Clean Water - PFAS

- Limited guidance from EPA regarding PFAS compounds related wastewater.
- Presentation will address two areas DEP Bureau of Clean Water is currently addressing:
 - Biosolids
 - Water Quality Monitoring

PFAS in Biosolids

- PFAS is typically found in biosolids
- Minimal information on quantities of PFAS in biosolids
- Minimal research on fate and transport of PFAS in biosolids that are land applied
- EPA working on method for quantifying PFAS in biosolids, wastewater and soil matrices
- Pilot testing of biosolids treatment for PFAS
 - Incineration at 1000° C

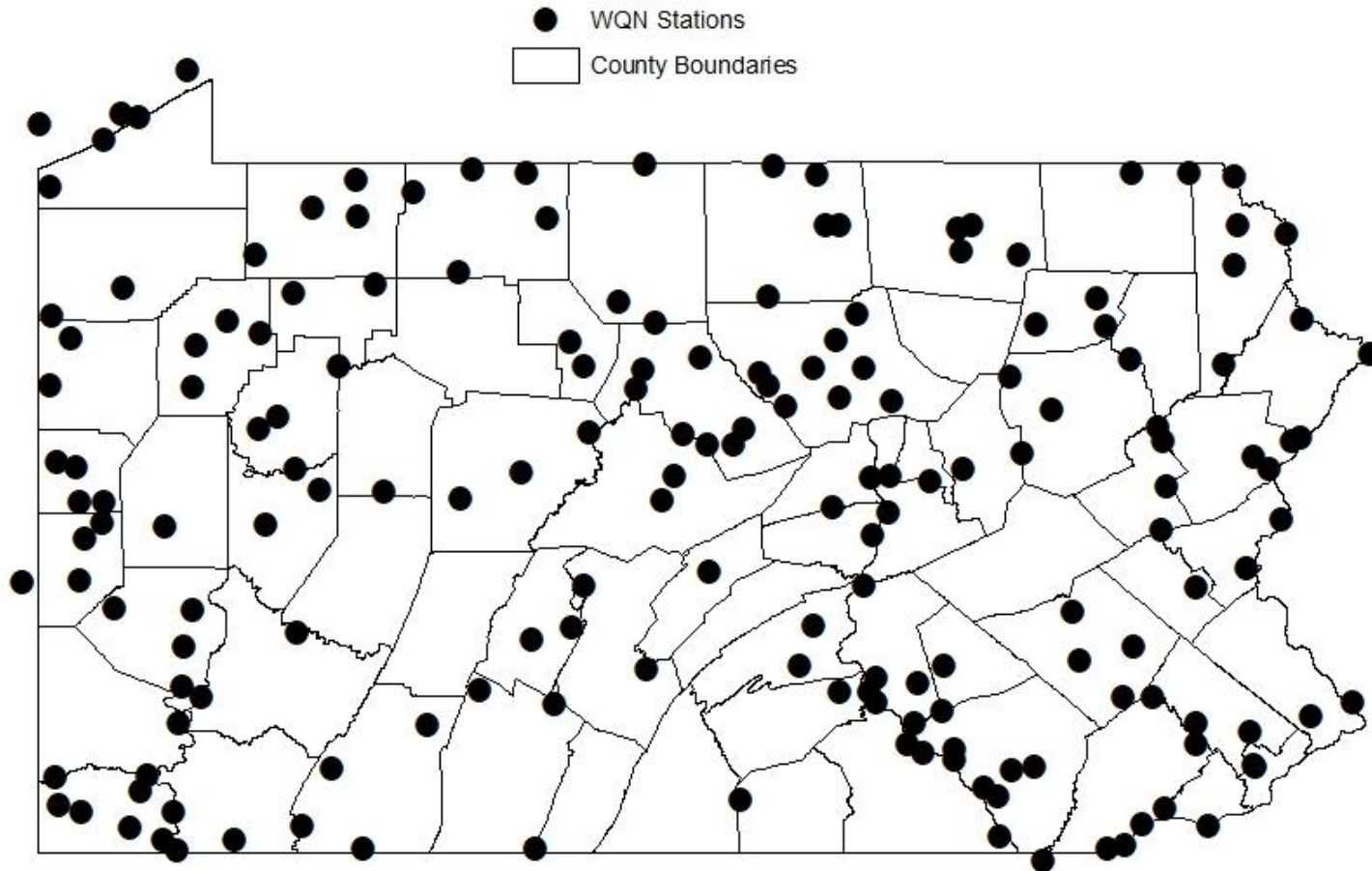
PFAS in Biosolids - EPA

- CWA Requirements
 - Review of biosolids regs every 2 years
 - Goal of report – Identify additional pollutants of concern
- EPA OIG Report
 - Reporting obligation is unfulfilled
 - EPA program response
 - 352 unregulated pollutant in biosolids (includes PFAS)
 - Completion of risk assessment and recommendation on additional pollutants by 12/31/2022
- Any new PFAS Fed biosolids requirements should be incorporated into PA biosolids Regs

Monitoring or Data Collection

- Data Collection Protocol Development
- Water Quality Standards Development
- Assessment Method Development
- Permitting and Compliance
- Protected Use Assessments
- Monitor Temporal Water Quality Trends

Water Quality Network (WQN)



WQN - Objectives

- Monitor temporal water quality trends in major surface waters throughout the state
- Monitor temporal water quality trends in reference waters
- Monitor the trends of nutrient and sediment loads in the major tributaries entering the Chesapeake Bay
- Monitor temporal water quality trends in Pennsylvania lakes

WQN Data

- Chemical
 - Metals and Ions
 - Nutrients
 - “Emerging Contaminants”
- Biological
 - Benthic Macroinvertebrates
 - Fishes
 - Algal Communities
- Physical
 - Habitat
 - Flow/Discharge

Emerging Contaminants

Contaminants of emerging concern (CECs) are those that were either not detected previously or are now found in higher concentrations than the past (<https://www.wqa.org/Whats-in-Your-Water/Emerging-Contaminants>).

They are NOT necessarily “new” compounds. These include many categories of chemicals.

WQN – Emerging Contaminants

- Hormones
- Wastewater Compounds
- Pharmaceuticals
- Pesticides
- PCBs – Polychlorinated biphenyls
- PBDEs – Polybrominated diphenyl ethers
- PAHs - Polycyclic Aromatic Hydrocarbons

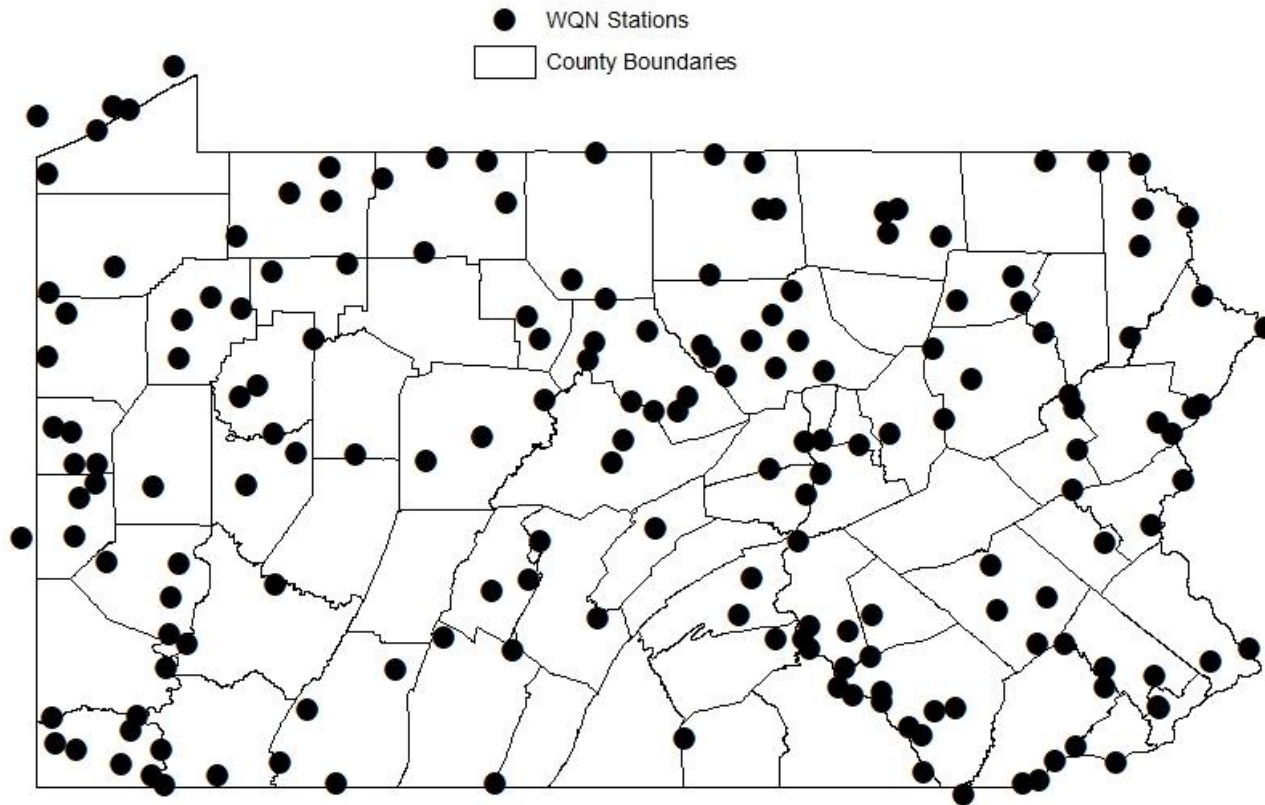
WQN – Emerging Contaminants

- Surface Water Samples
- Sediment Samples
- Passive Sampler Deployment



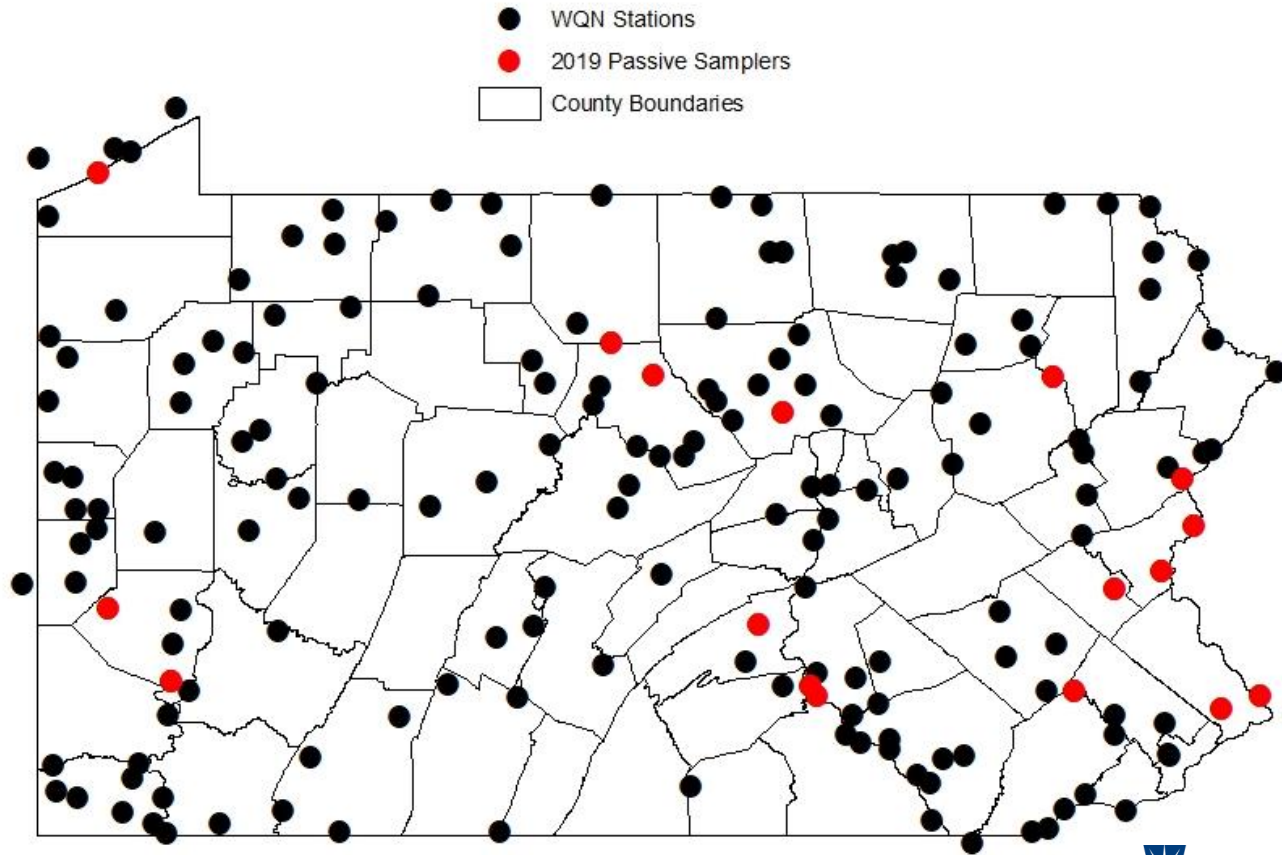
WQN - PFAS

- Single surface water collection at each of the 178 WQN station locations



WQN - PFAS

- 21 passive samplers deployments that will include PFAS



WQN - PFAS

- All PFAS surface water samples and passive sampler membranes will be analyzed by SGS AXYS Analytical Services for analysis (Sidney, British Columbia, Canada)
- 33 compounds, including:
 - GenX, ADONA, both fractions of F-53B and total oxidizable precursors (TOP)
- Replicate samples will be sent to USGS – National Water Quality Laboratory in Denver and the PA DEP Laboratory in Harrisburg
- Results will inform future data collection strategies and potentially inclusion of the PFAS analytical suite as a routine water quality monitoring and assessment objective



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