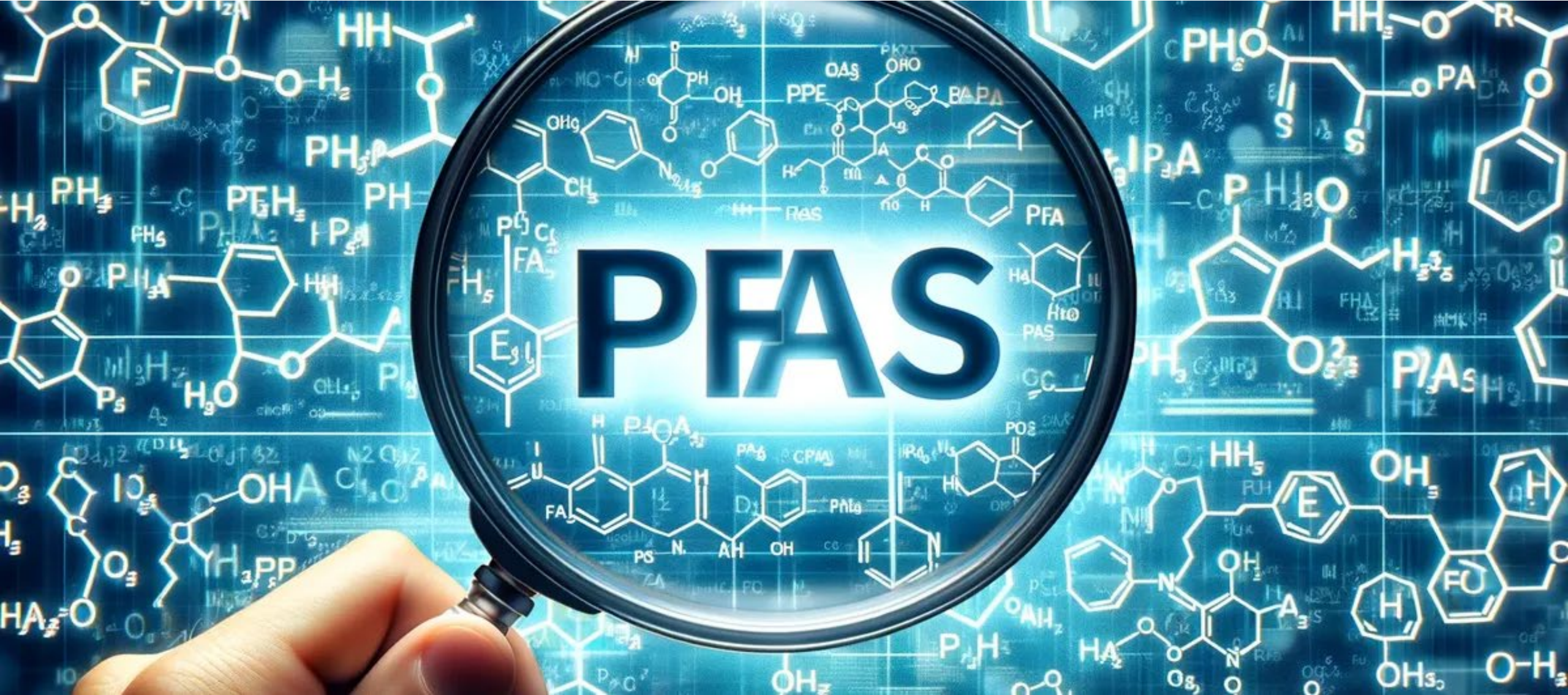




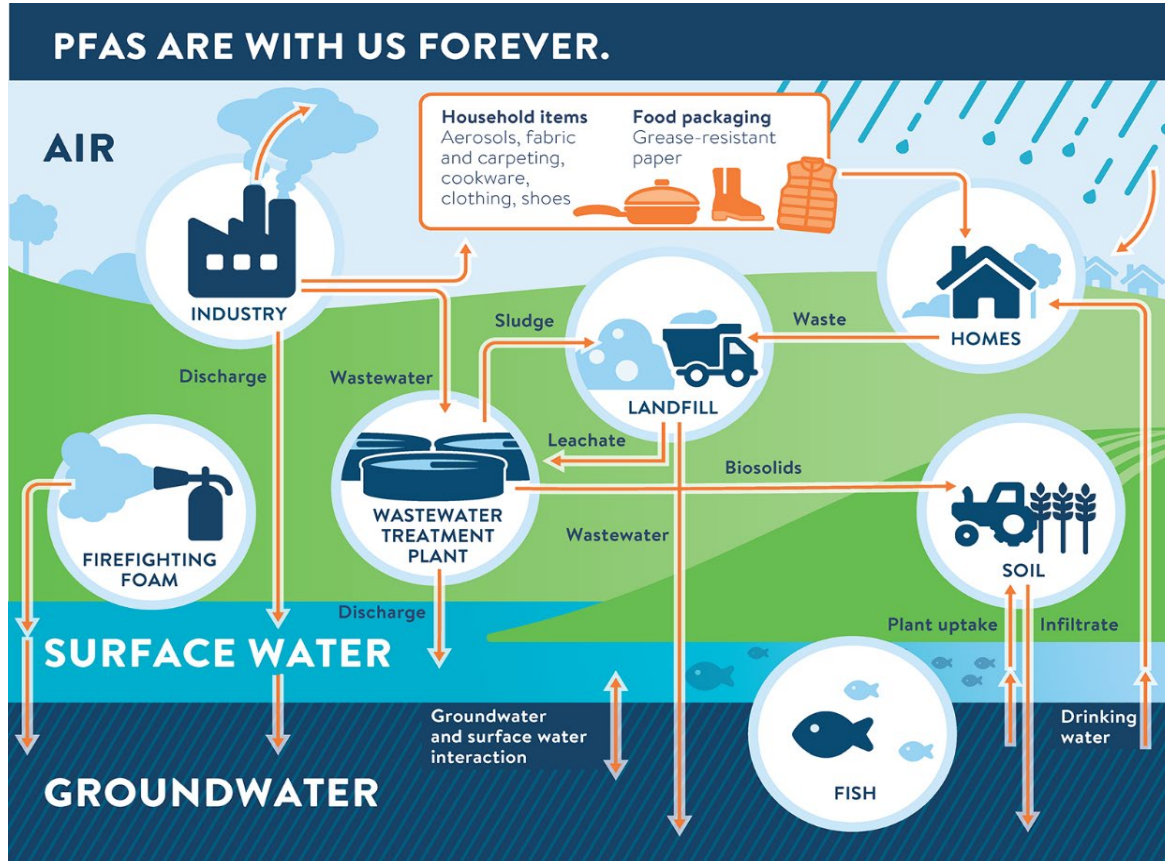
2025 AWMA Midwest Section Environmental Technical Conference
Douglas Watson | April 22, 2025



Potential Health Effects

- Immunological (decreased vaccination response, asthma)
- Liver (cholesterol, elevated liver enzymes)
- Developmental (low birth weight)
- Thyroid
- Reproductive (decreased fertility)
- Cardiovascular
- Cancer (testicular, kidney)
 - Considered “possibly carcinogenic” to humans by the International Agency for Research on Cancer (IARC)
 - Considered to have suggestive evidence of cancer potential for humans by the US Environmental Protection Agency (EPA)

Routes of Exposure to PFAS (EPA):



- Drinking water
- Food supply (biosolids), food packaged, fish, wildlife
- Air, soil, and dust
- Skin, consumer products such as carpet and clothing, fire suppressant aqueous film forming foam (AFFFs)
- Working in occupations, firefighting military and civilian, chemical manufacturing and processing

Source: Upper Republican NRD (urnrd.org)

Preliminary Results on Drinking Water PFAS

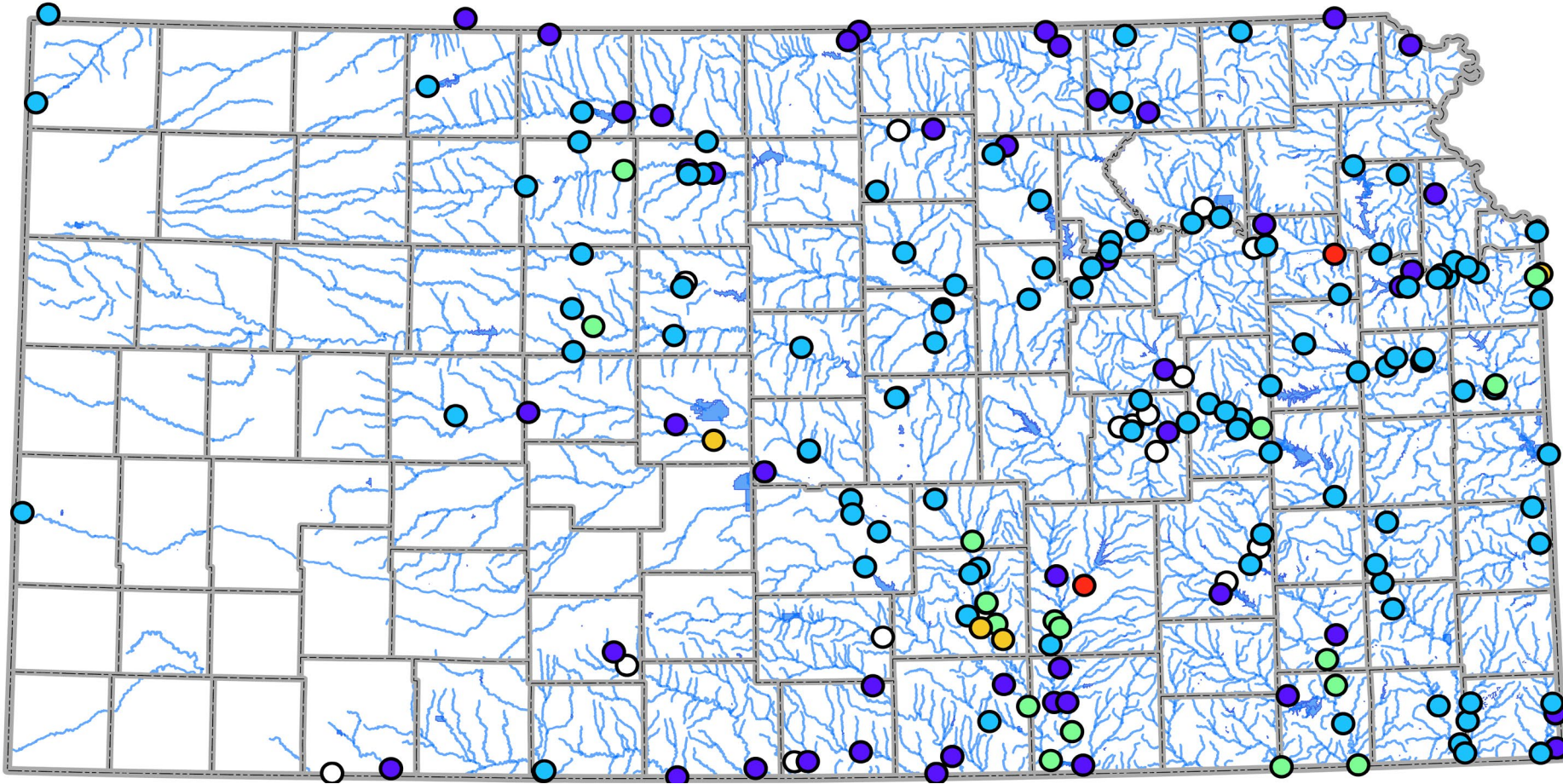
- EPA's Monitoring Results to Date in Kansas:
 - Many utilities see detects of PFAS compounds
 - Few are the six regulated compounds
 - Two out of 40 utilities may have compliance issues



Manageable, But Fish and Drinking Water Complicates

- Must meet most stringent standard:
 - Surface water standards for aquatic life are in parts per **million**
 - Wastewater effluent in parts per **trillion**
 - Human Health Criteria for water and fish consumption likely parts per **quadrillion**
- Mixing Zones Important to Maintain Distance
 - From Outfall to Intake
- Source Water Protection
 - Most Reservoirs detected PFBA only
 - Clinton Lake Has Mix, Including PFHxS and PFOS (MCL substances)

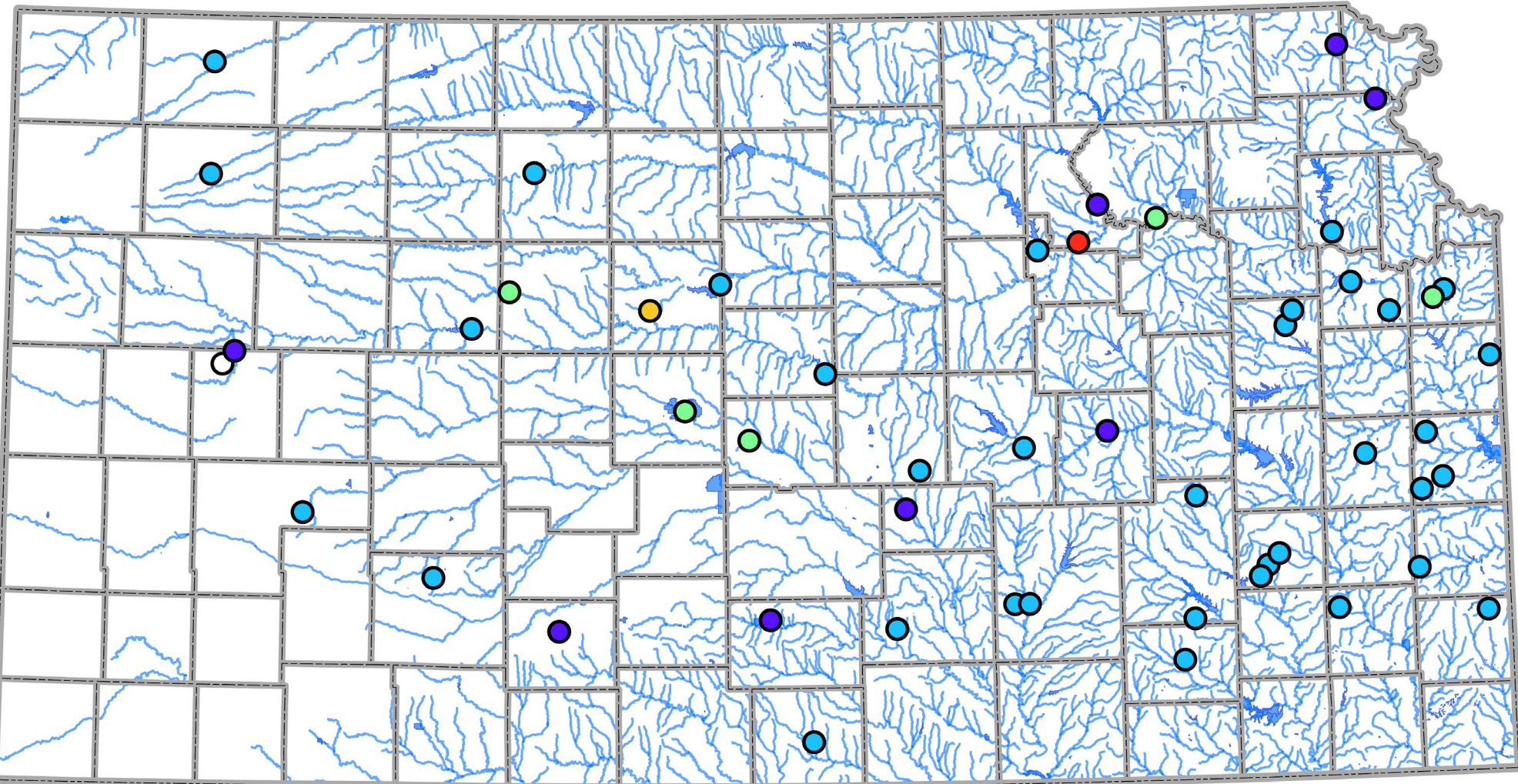
Monitoring PFAS in Rivers and Streams



**Total PFAS, Streams
(ng/L, or ppt)**

	Non-detect
Blue	≤ 4
Light Blue	≤ 30
Light Green	≤ 70
Yellow	≤ 150
Red	≤ 240

Monitoring PFAS in Lakes and Wetlands



**Total PFAS, Lakes
(ng/L, or ppt)**

	Non-detect
Purple	≤ 4
Light Blue	≤ 20
Light Green	≤ 50
Yellow	≤ 150
Red	≤ 300

Anticipated Complications of PFAS

- Tying Permit Limits to Fish Tissue Accumulation or Human Health Criteria
- Lab Capacity and Capability for PFAS Analyses
 - KHEL has stood up Method 533 for Drinking Water
 - KHEL has yet to stand up Method 1633 for wastewater, biosolids, soils, fish
- Handling Leachate from Landfills
 - One sample – 900 parts per trillion PFOA; 140 parts per trillion PFOS
- Biosolids Management
 - One sample > 6000 parts per trillion
 - Land Application
 - Landfills and Monofills
 - Incineration
 - Deep Disposal

Planned Actions for Contaminated Sites

- Update the Risk-Based Standards for Kansas (RSK) Manual to incorporate PFAS
- Perform background study of PFAS in soil - focus on urban areas
- Assess existing contaminated sites and new sites
- Assess long term sites during Five Year Reviews
- Orphan Sites Program will conduct PFAS assessment and remediation at sites without viable responsible parties
- Costs to responsible parties and the State cannot be determined at this time

Next PFAS Steps for KDHE in 2025 - 2026

- Assist Utilities with PFAS Monitoring of Drinking Water
- Adopt Kansas PFAS MCL Regulations
- Contract with Kansas State to analyze wastewater, biosolids and fish tissue with Method 1633
- Stand up KHEL with Method 1633 by July 2026
- Stay abreast of EPA developments on biosolids and human health criteria
- Investigate cause and effect at stream and reservoir hot spots
 - Lower Arkansas River, Walnut River, Shunga Creek
 - Clinton Reservoir, Ogden City Lake, Fossil Lake (Russell)

Water Program Task Force

- Senate Sub. For House Bill No. 2172
- Establishes a water program task force
 - 13 voting members
 - 7 legislators
 - 6 Kansas Residents
 - 3 non-voting members
 - Director of Bureau of Water – KDHE
 - Director of Kansas Water Office
 - Chief Engineer – KDA Division of Water Resources
- Purpose
 - Evaluate major risks to the quality and quantity of the state’s water supply
 - Including impact on current or future economic growth and population stability
 - Steps the state must take to define and achieve a future supply of water for Kansans
 - Evaluate current funding for water in the state and determine whether such funding is sufficient to address the water issues in the state water plan

Water Program Task Force (con't.)

- Task Force shall prepare and submit Final Report to legislature on or before January 31, 2027
- Report shall include recommendations on:
 - Water program's long-term structure to address the state's current and future water needs
 - Roles and responsibilities of the state, municipalities and regional entities
 - How program's investments and successes should be evaluated (including stakeholder input)
 - Criteria to determine program investments (including geographic diversity of such investments)
 - Funding for the water program
 - New dedicated moneys or investments for the state water plan fund
 - Changes to any existing fees or moneys dedicated for the state water plan fund
 - Any additional funding sources or tools necessary to ensure that the financial resources are adequate to address the state's water issues