SAMPLING FOR PFAS AT DISADVANTAGED WATER SYSTEMS

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The Office of Water Programs (OWP) at Sacramento State offers drinking water, wastewater, and stormwater services to disadvantaged communities statewide as well as other areas of the western United States.
PFAS SAMPLING PROGRAM

• PFAS General Order DW-2024-0002-DDW requires all PWS serving DAC and SDAC communities to sample designated water sources for PFAS by August 31st, 2026

• The purpose of this monitoring is to….
  • Understand PFAS impact at 3781 wells at 1220 DAC/SDAC water systems
  • Develop and validate a broad-spectrum test method for the class of PFAS
  • Develop a treatment-based regulatory approach for PFAS as a class
OVERVIEW OF PFAS

• PFAS refers to per- or polyfluoroalkyl substances
• Commonly referred to as forever chemicals, PFAS are extremely stable in the environment

PFAS was widely used in the following applications for decades:

Chemical Industry including PTFE production
Metal plating industry
Photo imaging industry
Semi-conductor industry

Biocides, household agents such as cleaning agents and impregnation sprays
Non-stick cook and bake-ware
Fire-fighting foams
Water- and oil-proof apparel
Stain resistant upholstery, carpet, etc.
Food packaging

Despite recent efforts to reduce PFAS use, it can now be found in air, water, and soil…
HEALTH EFFECTS

• Long term exposure to PFAS can potentially lead to the following:
  • Decrease fertility and birth weight
  • Weaken a body’s ability to fight disease
  • Increased risk for some cancers, asthma, thyroid disease, and liver damage
  • Increase in cholesterol levels (which can increase the risk for heart attack or stroke)
SAMPLING PROGRAM TEAM
SAMPLING APPROACH

Systems register via OWP's PFAS web portal

Geosyntec’s samplers coordinate with PWS to collect samples

Self-sampling PWS are provided with training, sampling materials, and return shipping.

Samples shipped to Babcock Labs for Analysis

Results sent to PWS along with instructions for next steps if public notification is required
PFAS TESTING METHODS

- Over 14,000 different chemicals classified as PFAS
- Targeted methods typically only test for 20 – 30 different types of PFAS
- Non-targeted methods are used to classify the total amount of PFAS at a site
PFAS TESTING METHODS

• Selected analysis methods
  • EPA 533 by LC-MSMS
  • Adsorbable Organoflourine (AOF) by Combustion Ion Chromatography (CIC)
  • DoD QSM Extract
    • LC-HRMS – Long chain amenable
    • IC-MSMS – Ultra-short chain PFAS
For more information on the program visit our website!
https://pfas.owp.csus.edu/

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