



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Environmental Cleanup & Brownfields

Environmental Cleanup and Brownfields (ECB) & PFAS

**Citizens Advisory Council
September 17, 2019**

What are PFAS?

- Per- and polyfluoroalkyl substances (PFAS)
 - Family of more than 3,000 chemicals
 - Manmade chemicals manufactured and used in thousands of processes and products since the 1940s
- Became popular because they repel oil and water, are temperature-resistant, and reduce friction
- The most-studied substances are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS)

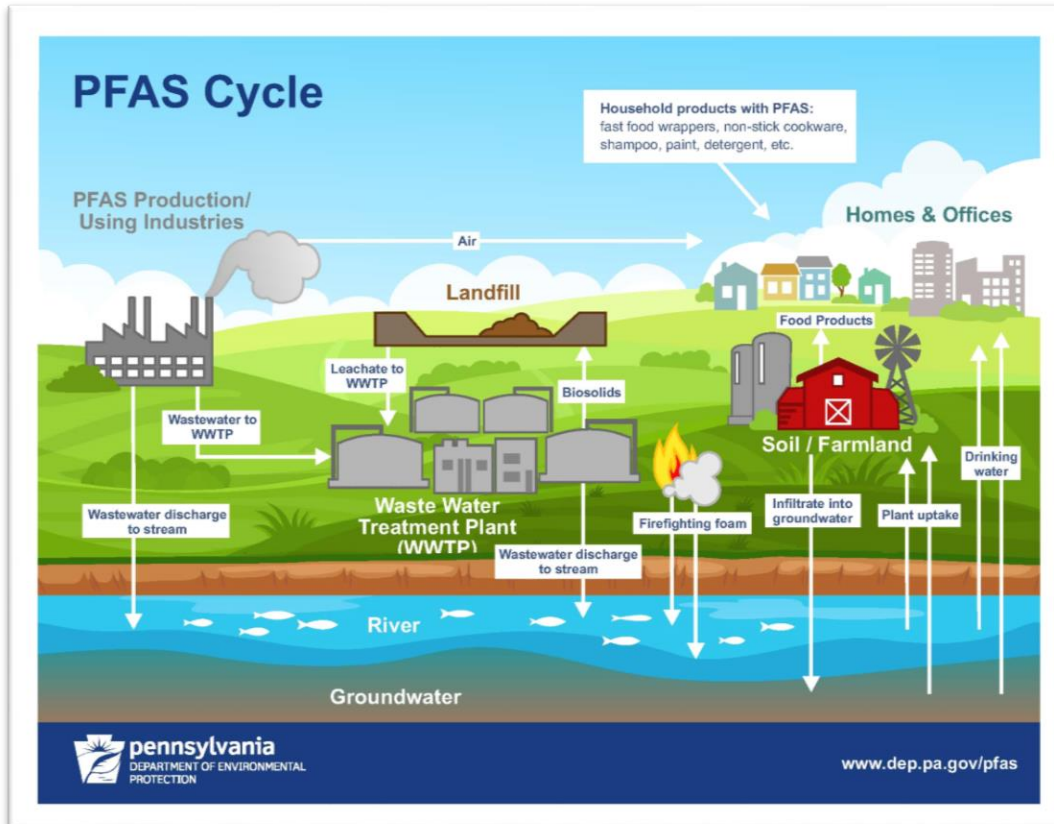
Where are they found?

- Found in soil, air and water, and break down slowly in the environment
- Firefighting foams
- Stain-repellant clothing, carpets, upholstery; household products, such as non-stick cookware, polishes, waxes, and food packaging
- Metal plating and wire manufacturing
- Only certain compounds have been phased out



How do people become exposed?

- Contaminated drinking water



Such contamination is typically localized to a specific facility; such as an industrial facility where these chemicals were produced/used to manufacture products, or areas used for firefighting training.

Why does it matter?

- Bioaccumulate in the body
- There is evidence that exposure to PFOA and PFOS can lead to adverse human health effects.

➤ What are the impacts from PFOA and PFOS?

- Studies show that PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects in laboratory animals, including:
 - Increased cholesterol levels
 - Low infant birth weights
 - Effects on the immune system
 - Cancer
 - Thyroid hormone disruption

ECB's Role

- Land Recycling (Brownfields) – Voluntary cleanup program (Act 2), soil and groundwater remediation standards
- Site Remediation – State & Federal Superfund, Storage Tank Corrective Action, DoD
- Storage Tanks – AST and UST technical standards, certified tank installers and inspectors, registration, permitting and inspections

Challenges

- Current regulatory status
- Lack of approved analytical methods
- Risk of cross contamination
- Limited lab capacity
- High analytical costs

Challenges

- Very little toxicity information
- Lack of standards
- Evolving remedial technologies
- Limited disposal and treatment options

Remediation Standards

- EPA Maximum Contaminant Level (MCL) or Lifetime Health of Level (HAL) = Act 2 Statewide Health Standard
- Combined EPA Lifetime HAL / Act 2 standard for PFOA/PFOS is 70 ng/L
- Proposing soil and/or groundwater Medium Specific Concentrations for PFOA/PFOS and PFBS

▶ National Foam Act 2 Site, Chester County

- Manufactured fire-fighting foam from the 1940's to 2016 at 2 acre site in West Chester Borough
- Entered Act 2 program in 2015
- VOC's, SVOC's and heavy metals in soil
- PFAS compounds in soil and groundwater
- PFAS compounds detected in nearby Goose Creek
- Characterization activities are ongoing

Ridge Run HSCA Site, Bucks County

- Public water supply contained concentrations of PFOA/PFOS > 70 ng/L.
- Another public supply well was found to contain combined concentrations slightly below 70 ng/L
- DEP took immediate steps to investigate the surrounding area

Ridge Run HSCA Site, Bucks County

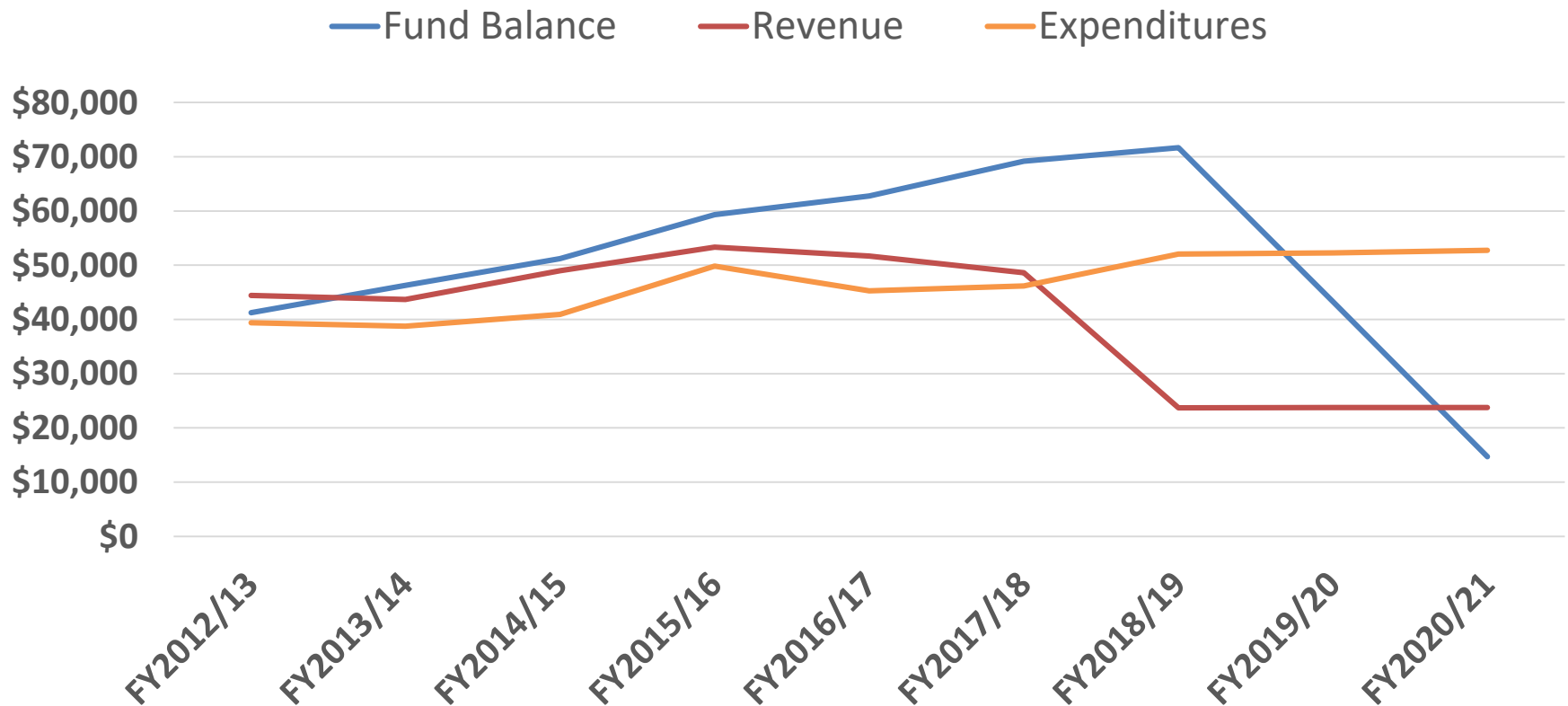
- DEP sampled 170 private wells in the vicinity of the contaminated public supply wells.
- 13 properties with concentrations > 70 ng/L are equipped with carbon filtration systems or receiving bottled water.
- DEP's efforts to characterize the extent of contamination and to identify a responsible party is ongoing

HSCF Revenue

- Capital Stock and Franchise Tax (exp. 12/2015) - \$40 million
- Act 13 Transfers (start 2014) - \$19 million
- Hazardous Waste Fees - \$1.7 million
- Penalties, Interest, Cost Recovery - \$3 million

HSCF Status/Projection

Hazardous Sites Cleanup Fund
in thousands





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