



DERP FORUM

Achieving Greater Success Through Strong Partnerships

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DERP 101

Peterson Space Force Base, Colorado Case Study

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Peterson SFB

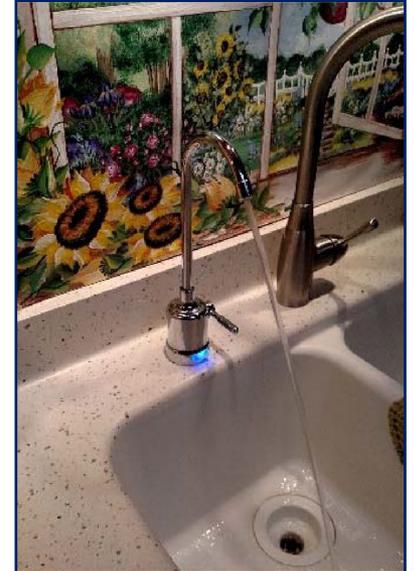
- **Case Study on Peterson Space Force Base presented in 2019 on the initial discovery of PFAS in public water treatment systems**
 - EPA’s Third Unregulated Contaminant Monitoring Rule (UCMR 3) required testing for six PFAS in 2014
 - Elevated PFAS levels identified in three public water wells, turned off immediately
 - Addressing PFAS drinking water impacts at 70 ppt increased impacted drinking water wells from 3 to 42
 - Five water districts and about 80,000 residents affected
- **Collaborative team effort:**
 - Dept. Air Force (DAF) – El Paso County Health
 - US EPA – Public Water Systems
 - CDPHE
- **Unified approach to addressing issues**
- **Communications released jointly by federal, state, county and local agencies**





DAF Off-Base Mitigation Efforts

- **Off-base Private Drinking Water**
 - 2016: 83 private wells sampled, 37 above 70 ppt
 - Initial response was bottled water to homes, mobile parks and businesses
 - Current Action
 - 21 private wells servicing 30 residences have point of use filtration systems installed
 - 2 private wells servicing a mobile home park have filtration systems installed
 - 2 residences connected to city water
 - 1 residence provided bottled water





DAF Off-Base Mitigation Efforts

- **Off-base Public Drinking Water**

- 2016: 42 Municipal drinking water wells above 70 ppt
 - Wells taken off line, surface water use halted, and conservation practices applied
 - Ion Exchange (IX) systems and Granular Activated Carbon (GAC) systems installed
 - Replacement water purchased; new pipelines installed
- Current Actions
 - Environmental Services Agreement in place with 4 public water districts
 - 4 public water treatment systems constructed and brought online between 2021 and 2022
 - Annual monitoring additional municipal systems that have remained below action levels



Investigation

- **Feb 2016 – March 2019: Preliminary Assessment (PA) and Site Inspections for PFAS completed**
- **Remedial Investigation (RI) Status**
 - October 2021: Scoping meeting
 - March 2022: RI QAPP complete
 - April 2022: Scoping meeting
 - Feb. 2023: Human Health and Risk Assessment WP complete
 - July 2023: Contract mod. allowing onsite delineation to new 2022 RSLs
 - October 2023: Scoping meeting
 - RI Report anticipated spring 2025





On Base Projects

- **August 2020: Stormwater Sewer Line and Ponds Removal action**
- **13 Treatability/Pilot Studies for soil and groundwater at various stages of completion**
 - Battelle's PFAS Annihilator™
 - PlumeStop
 - HRX Well®
 - Soil washing
- **2 source determination studies**
 - PFAS Signature™ Chemical Forensics
 - Cyclotron Resonance Mass Spectrometry

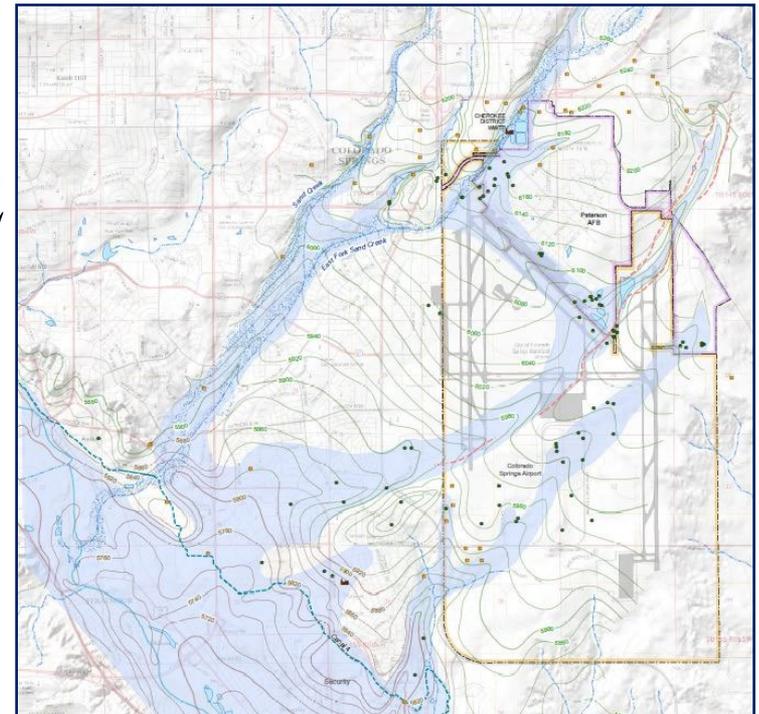




DoD and State Partnership

- **PARTNERSHIP “SECRETS TO SUCCESS”**

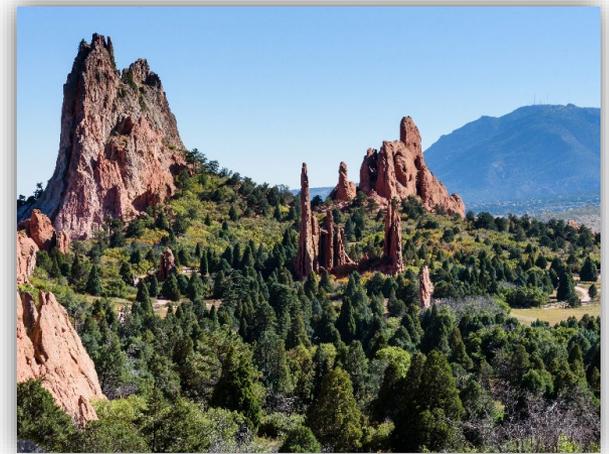
- Transparency / Open communication (early and often)
- Draft document reviews ahead of final submittals
- Quarterly joint DoD/CDPHE working group meetings
- Semi-annual DoD/EPA/CDPHE working group meetings
- CDPHE at the table for scoping process before the SI and RI
- Collaborate on pilot project development and EE/CA
- Unified public messaging





Primary Underlying Issues & Path Forward

- **EPA Health Advisories are not enforceable regulatory standards**
- **Many unknowns regarding the science and toxicology related to the universe of PFAS compounds**
- **Colorado's approach:**
 1. Aquifer-specific groundwater quality standard
 2. Hazardous Constituents listing
 3. Statewide inventory of possible PFAS sources
 4. Assess scope of problem and need for future statewide standards
 5. Collaborate to identify successful remediation technologies





Summary

- **Federal, state, county, and local agencies coordinating closely to address PFAS impacts**
- **Collaborative process for scoping SI/ESI/RI reduced iterations and time**
- **DAF quickly stepped forward to implement drinking water mitigation**
- **DAF conducting 15 projects to identify effective remediation technologies and source identification methodology**
- **Given unknowns related to PFAS, Colorado is taking a stepwise approach to regulation**