

Central Tucson PFAS Project

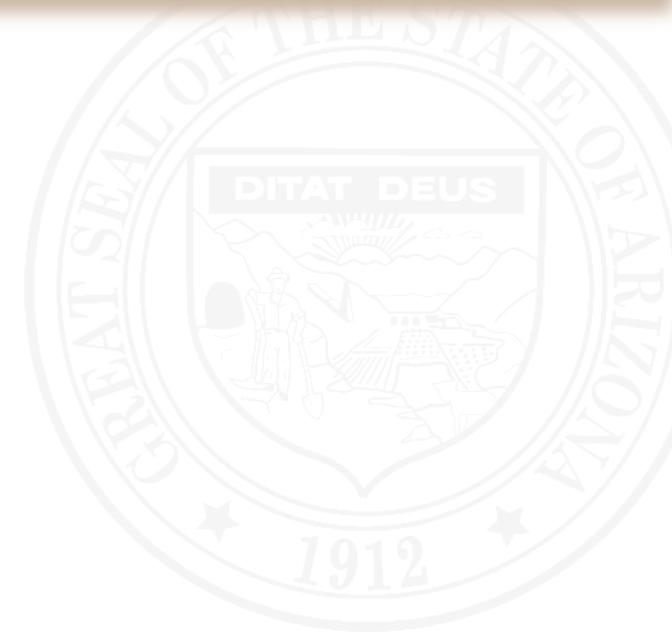
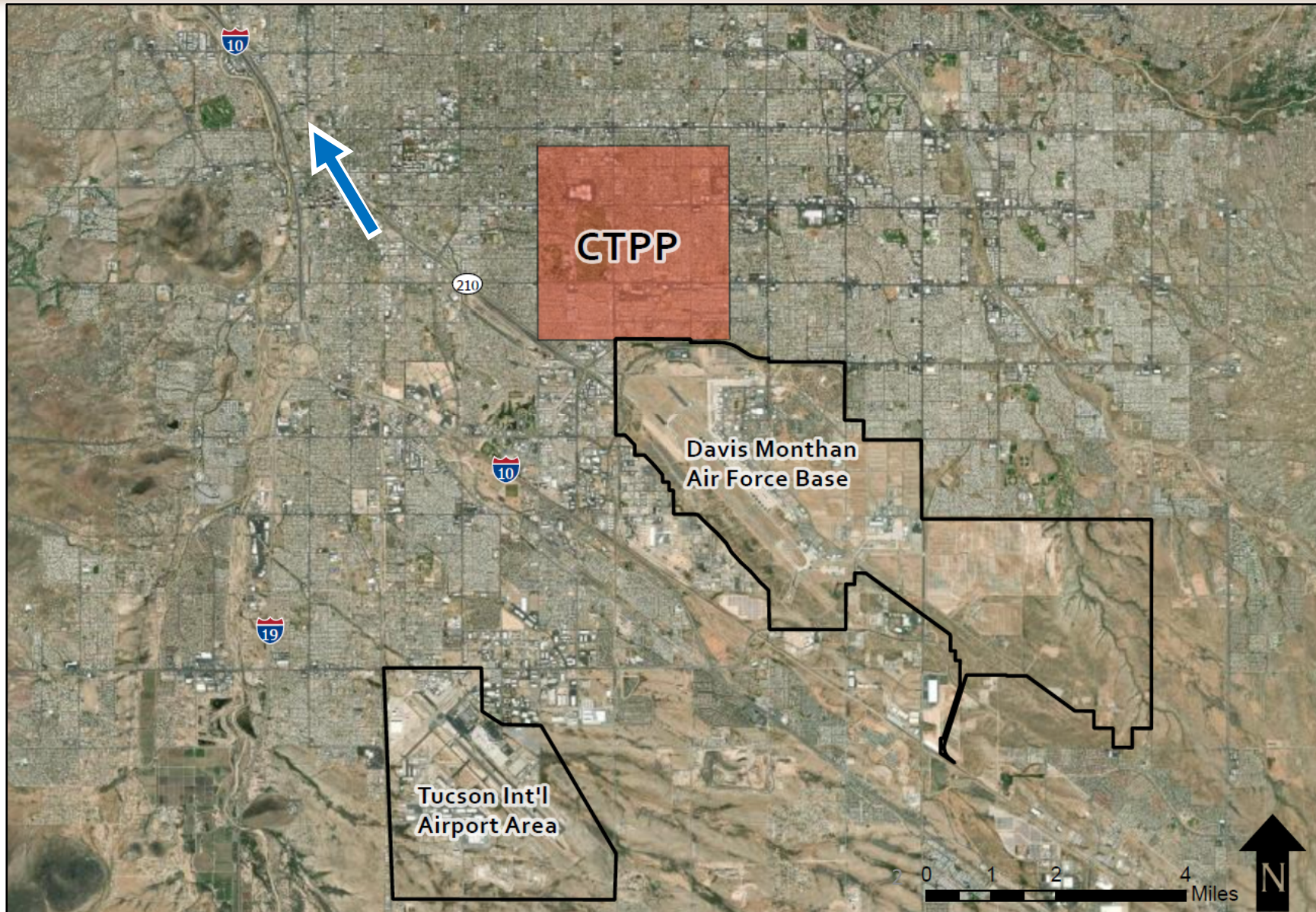
Waste Programs Division | Water Quality Assurance Revolving Fund


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Central Tucson PFAS Project (CTPP) Location



 General Direction of Groundwater Flow in the Tucson Basin

 Approximate area of the Central Tucson PFAS Project investigation

Project Objective: *Prevent additional PFAS impacts to Tucson Water's Central Wellfield*

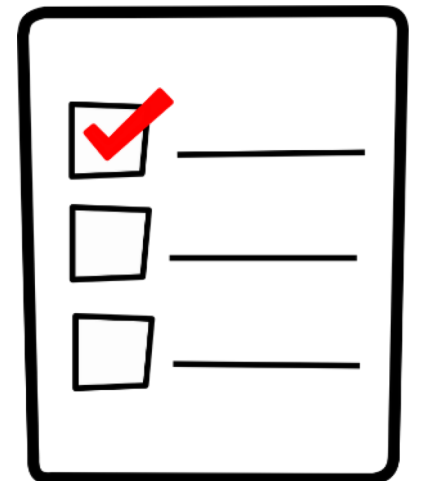
- Planning began in Spring 2020
- Work Plan and Quality Assurance Project Plan completed in August 2020
- Well installation began in October 2020



image: epa.gov

Critical Project Elements:

- Conduct groundwater sampling to determine extent of PFAS contamination and collect design data for a treatment system
- Design, construct and operate a PFAS groundwater extraction and treatment system
- Deploy quality assurance and control measures to ensure data accuracy



- PFAS are a large group of chemicals widely used in industrial processes, household products, and firefighting foams.
- EPA has set a Health Advisory Level (HAL) of 70 parts per trillion (ppt) for the combined concentration of PFOA + PFOS
- Tucson Water has identified an operating target of <18 ppt for the combined concentration of PFOA + PFOS + PFHxS + PFHpA

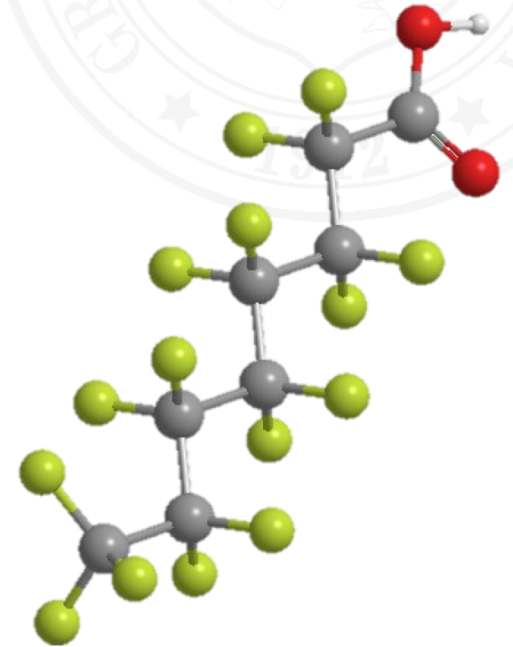
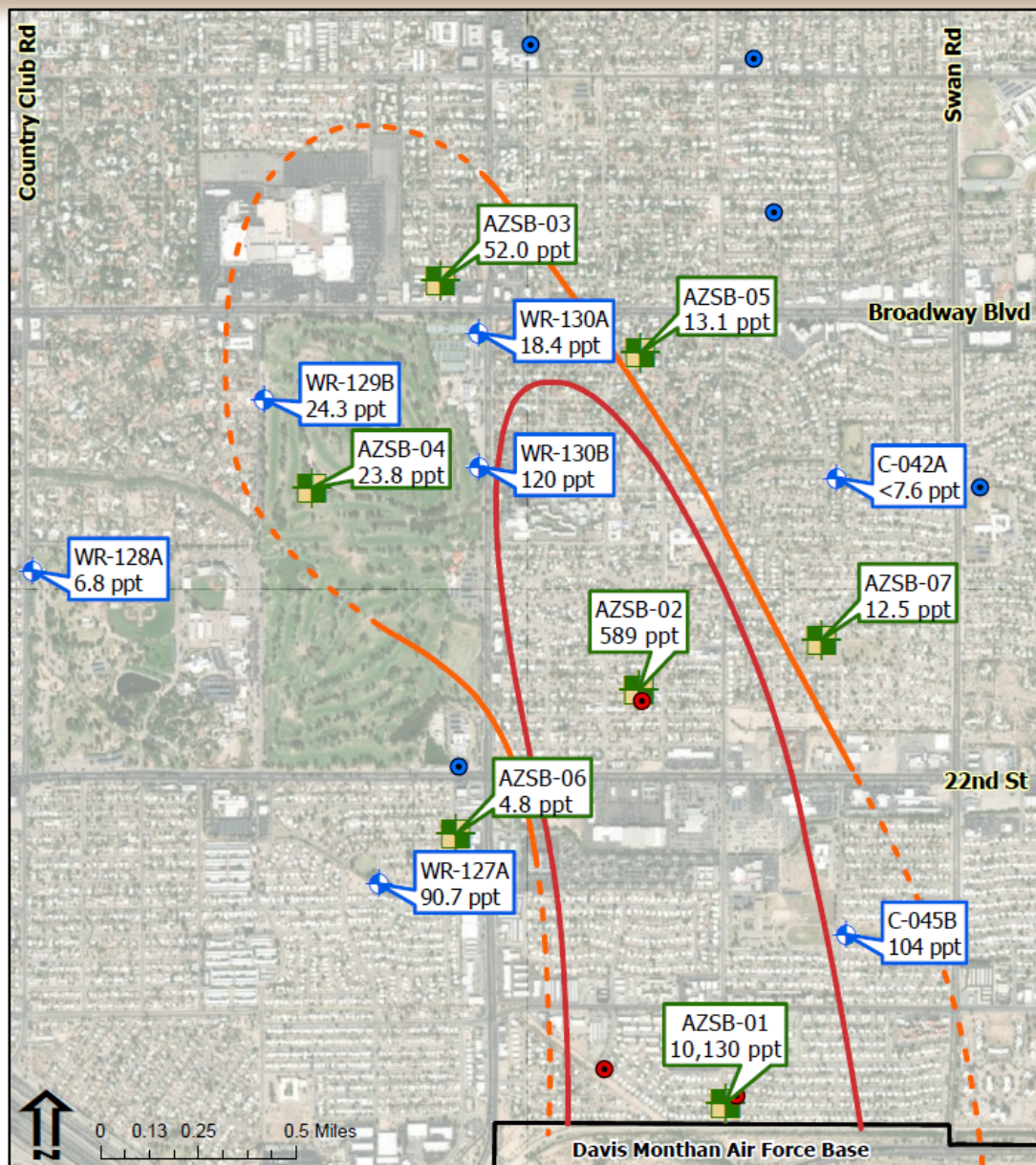


image: NIST.gov

- Committed \$3.3M in funding from the limited Water Quality Assurance Revolving Fund (WQARF)
- Developed a 3D model to simulate groundwater flow in central Tucson
- Installed seven (7) monitoring wells based on high-resolution, depth-specific sampling
- Delineated the extent of PFOA+PFOS impacts exceeding the EPA HAL in groundwater
- Completed the conceptual design of a demonstration treatment system



Preliminary Groundwater Sampling Results



EPA Health Advisory Level

— PFOA+PFOS > 70 ppt*

Tucson Water Operating Target

— PFOA+PFOS+PFHxS+PFHpA > 18 ppt*

- Active Tucson Water Drinking Water Well
- Tucson Water Drinking Water Well Removed from Service
- Tucson Water Monitoring Well (PFOA+PFOS+PFHpA+PFHxS concentration displayed)
- CTPP Monitoring Well (PFOA+PFOS+PFHpA+PFHxS concentration displayed**)

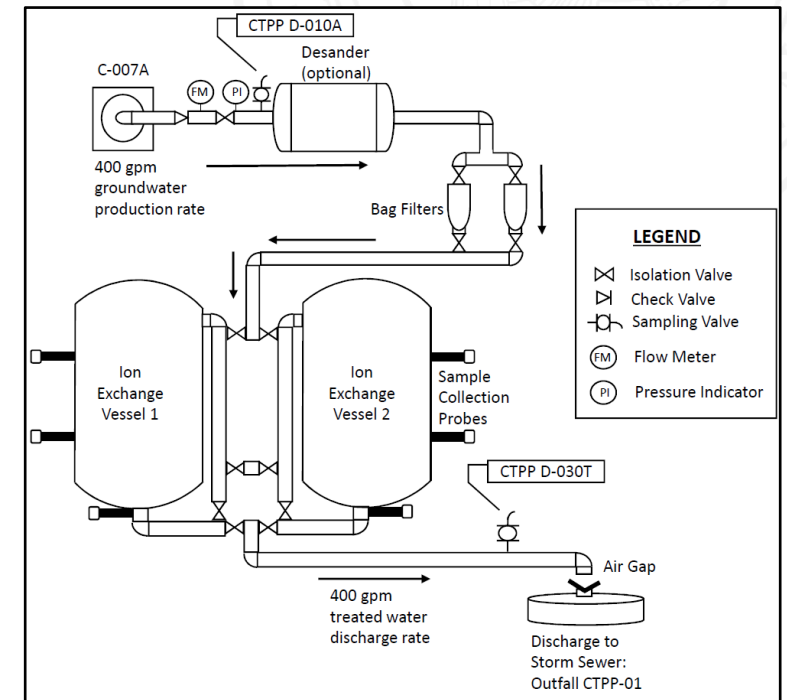
Notes:

*Contours represent estimated plume extents; contours are dashed in areas of greater uncertainty

**Concentrations displayed represent the maximum concentration detected during drilling

CTPP Demonstration System

- The conceptual design has been completed for a demonstration groundwater extraction and treatment system
- The system will use an inactive Tucson Water well in the area of highest PFAS contamination
- Water will be extracted and treated using ion exchange resin to completely remove PFAS

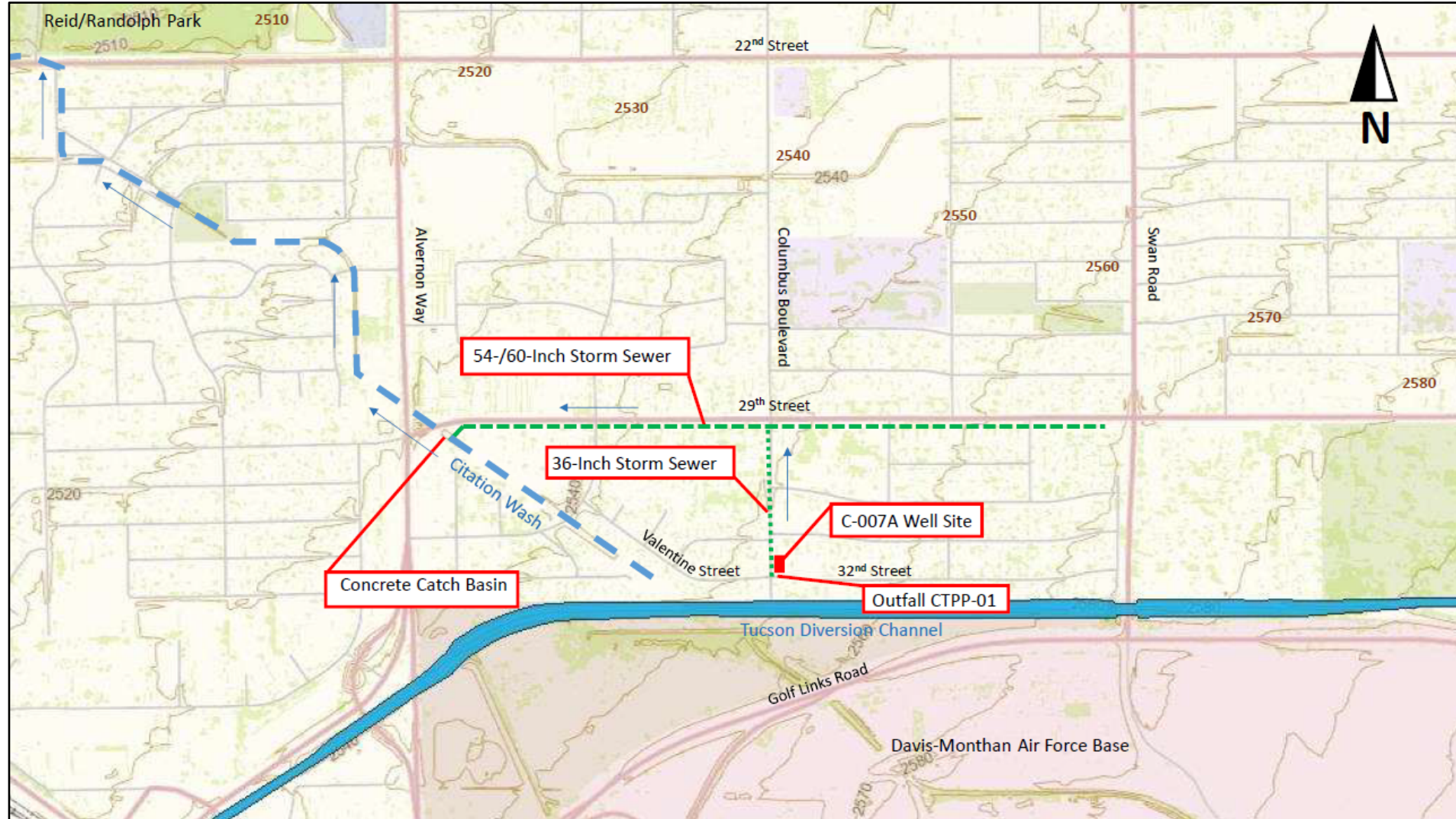


A demonstration groundwater extraction and treatment system will:

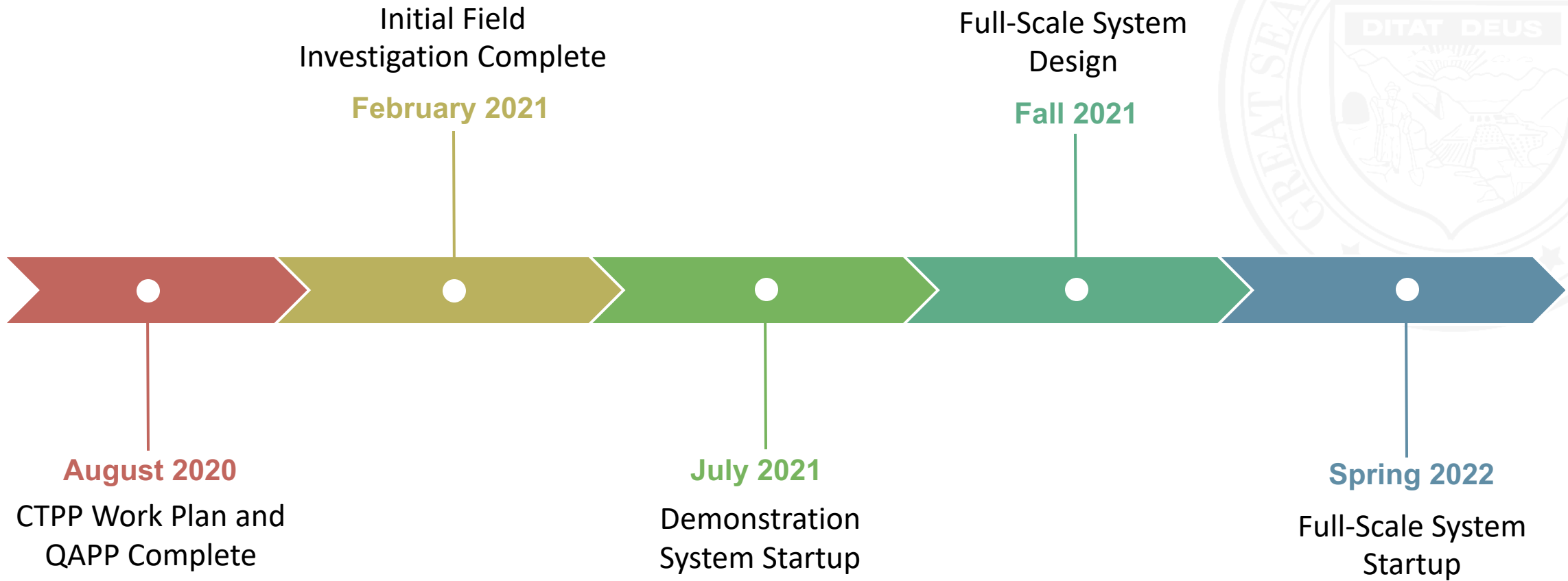
- Immediately begin removing PFAS from the highest concentration area the plume
- Limit the movement of PFAS toward central Tucson
- Prove the long-term efficiency of ion exchange treatment
- Provide a platform for evaluating other treatment technologies



Demonstration System Discharge



CTPP Timeline



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