

# Air Force Civil Engineer Center

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## Cannon AFB PFAS Public Update

14 May 2024

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*Battle Ready...Built Right!*



## *Agenda*



- **The Maximum Contaminant Level Rule**
- **PFAS Investigation**
- **South-East Engineering Evaluation/Cost Analysis – Pilot Study**
- **North Playa Engineering Evaluation/Cost Analysis – Pilot Study**
- **Going Forward**
- **Additional Information**
- **Common Acronyms**



## ***The Maximum Contaminant Level Rule***



- On 10 Apr 2024, EPA published the final maximum contaminant levels (MCL) for several PFAS in drinking water, posted to Federal Register on 26 Apr 2024
  - PFOA and PFOS: 4ppt each; PFHxS, PFNA and HFPO-DA (GenX): 10ppt each
  - Mixtures of two or more of PFHxS, PFNA, HFPO-DA, and PFBS: Hazard Index of 1
- The rule provides five years for regulated drinking water purveyors to comply with the MCL levels
- MCLs are also used as cleanup standards, and can be used as a risk trigger level to take response actions (e.g., private drinking water well treatment), under the federal cleanup law, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
  - DAF is reviewing existing PFAS sampling results
  - DAF will be expanding existing cleanup investigations, and assess “background” levels of PFAS
  - Providing drinking water treatment for impacted off-base wells on prioritized basis, with focus on installing enduring solutions such as municipal connections or whole-house filters
  - Prioritizing locations where known levels of PFAS in drinking water from DAF activities are the highest



## ***PFAS Investigation***



- **Preliminary Assessment (PA) – Completed October 2015**
- **Site Inspection (SI) – Completed August 2018**
- **Off Base SI – Completed September 2018**
- **Remedial Investigation (RI) – In progress**
- **Feasibility Study**
- **Public Participation/Record of Decision**
- **Remedial Design/Remedial Action**
- **Remedial Action Completion Report/Response Complete**



# ***PFAS Remedial Investigation***

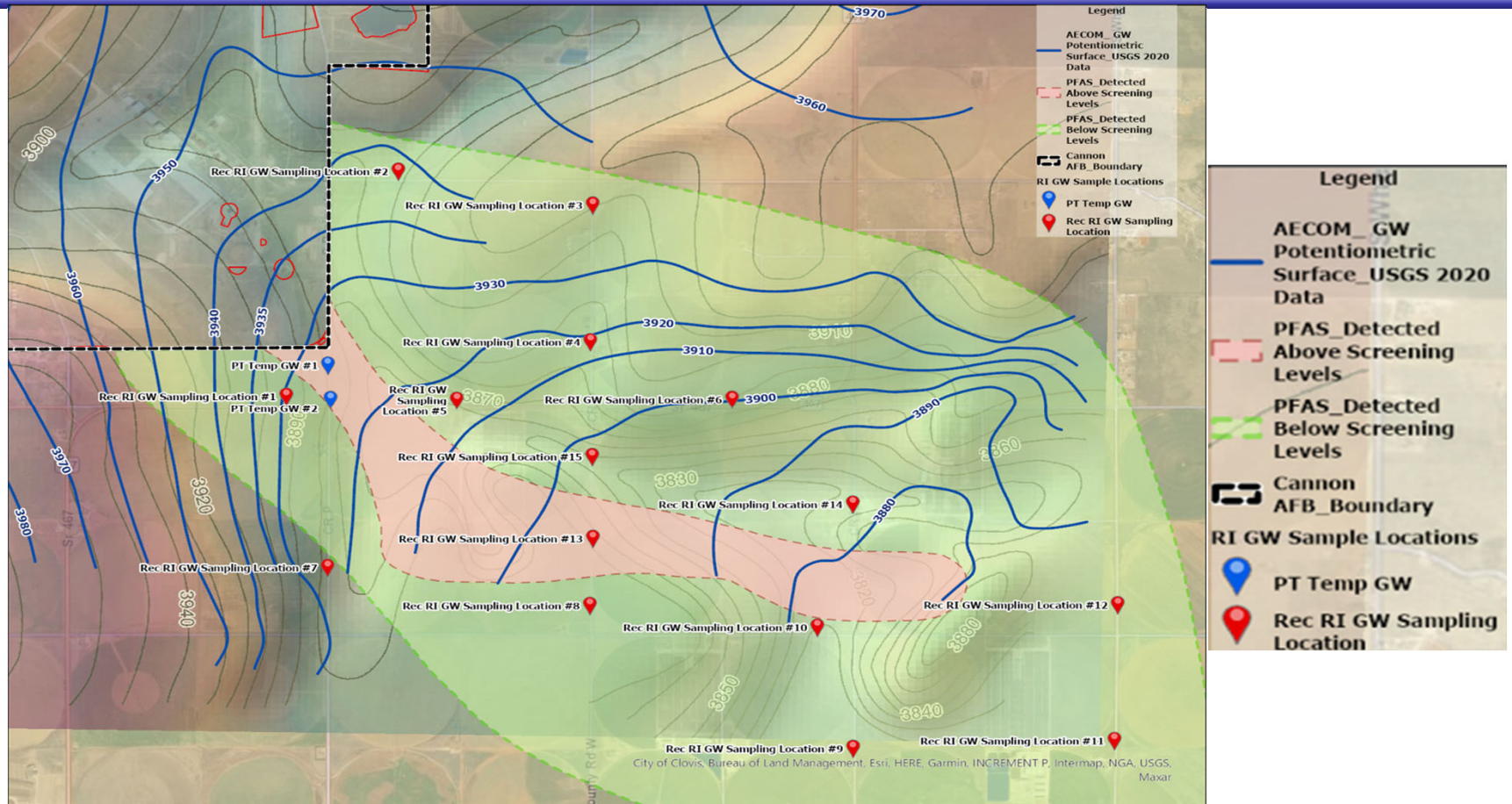


## **■ Remedial Investigation Status**

- August 2020 RI Contract awarded**
- 2022 new EPA Regional Screening Levels (RSLs)**
- 2023 updated EPA RSLs**
- RI work completed to date:**
  - Soil samples: on Base 936 – off Base 42**
  - Sediment samples: on Base 12**
  - Surface Water Samples: on Base 12**
  - Groundwater samples: on Base 19 (2 rounds), off Base 34**
  - Working on additional locations for soil borings at Fire Training Areas to fully delineate**
  - Three wells installed in NMDOT Right-of-Way: Approved by OSE and NMDOT**



# PFAS Remedial Investigation



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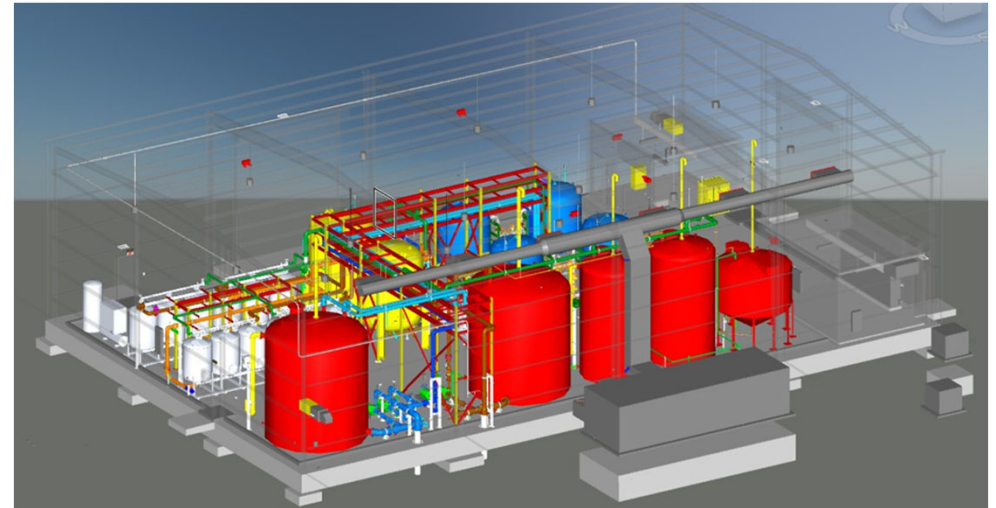




# South-East Engineering Evaluation/Cost Analysis– Pilot Study

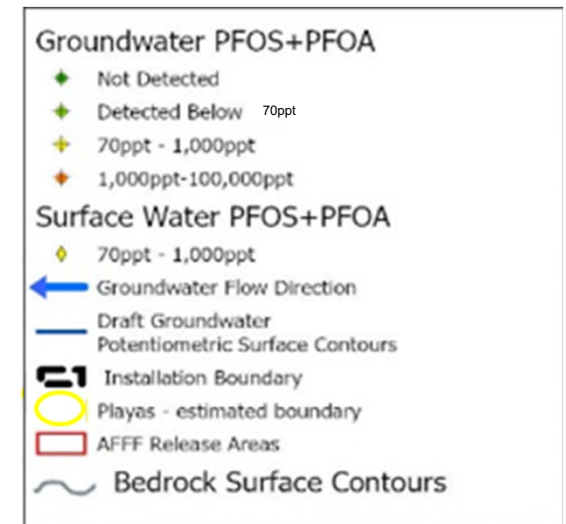
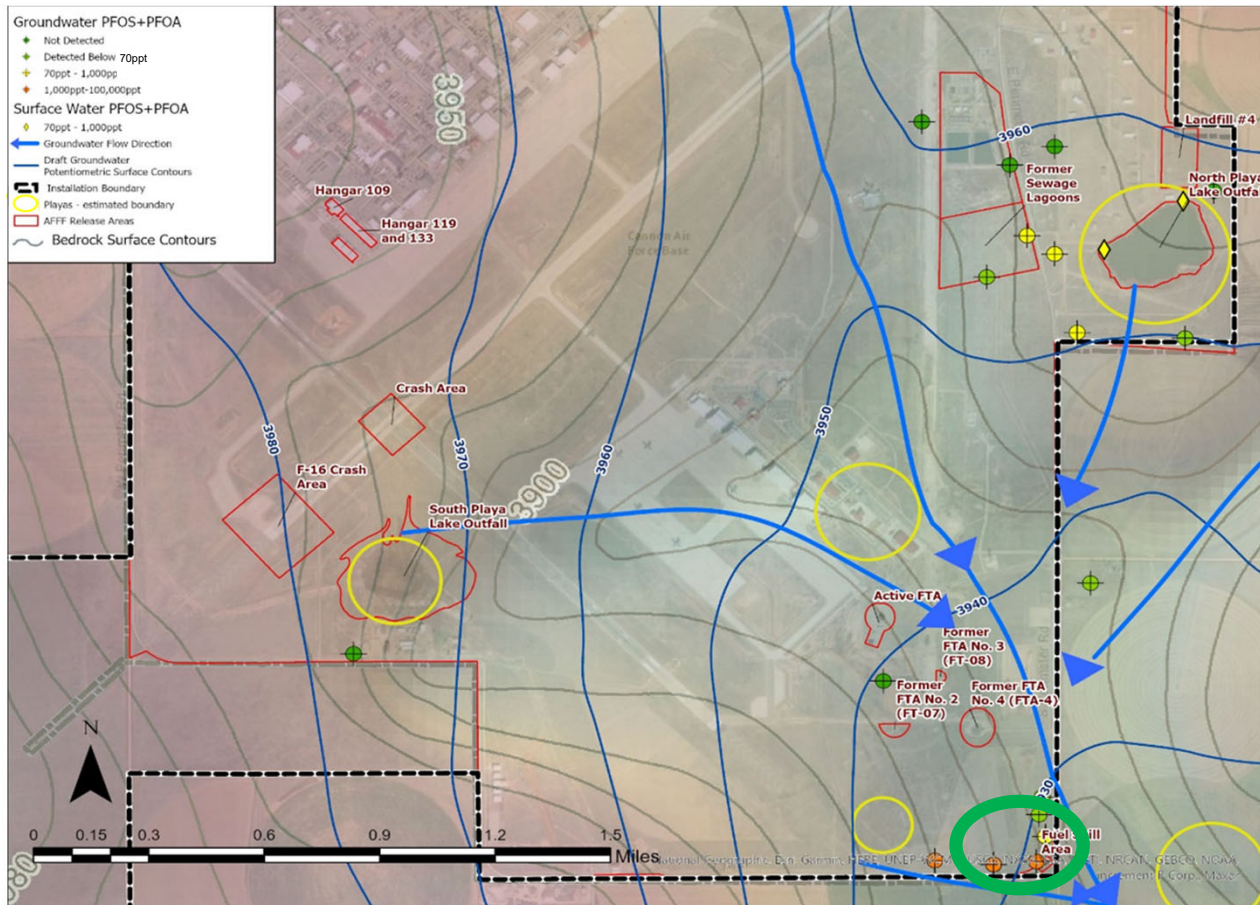


- Award COMPLETED – 27 May 2021
- Initial Site Visit COMPLETED – 2 June 2021
- Kick-Off Meeting COMPLETED – 8 June 2021
- Sampling Event COMPLETED – 14 June 2021
- Treatability Study COMPLETED – December 2021
- Aquifer Test COMPLETED – December 2021
- Design/Work Plan COMPLETED – June 2023
- Construction IN PROGRESS – July 2023
- Operation Start – July 2024
- EE/CA Final – June 2025
  - (30-day NMED/EPA/Public comment period)
- EE/CA output will determine interim action





# South-East Engineering Evaluation/Cost Analysis– Pilot Study



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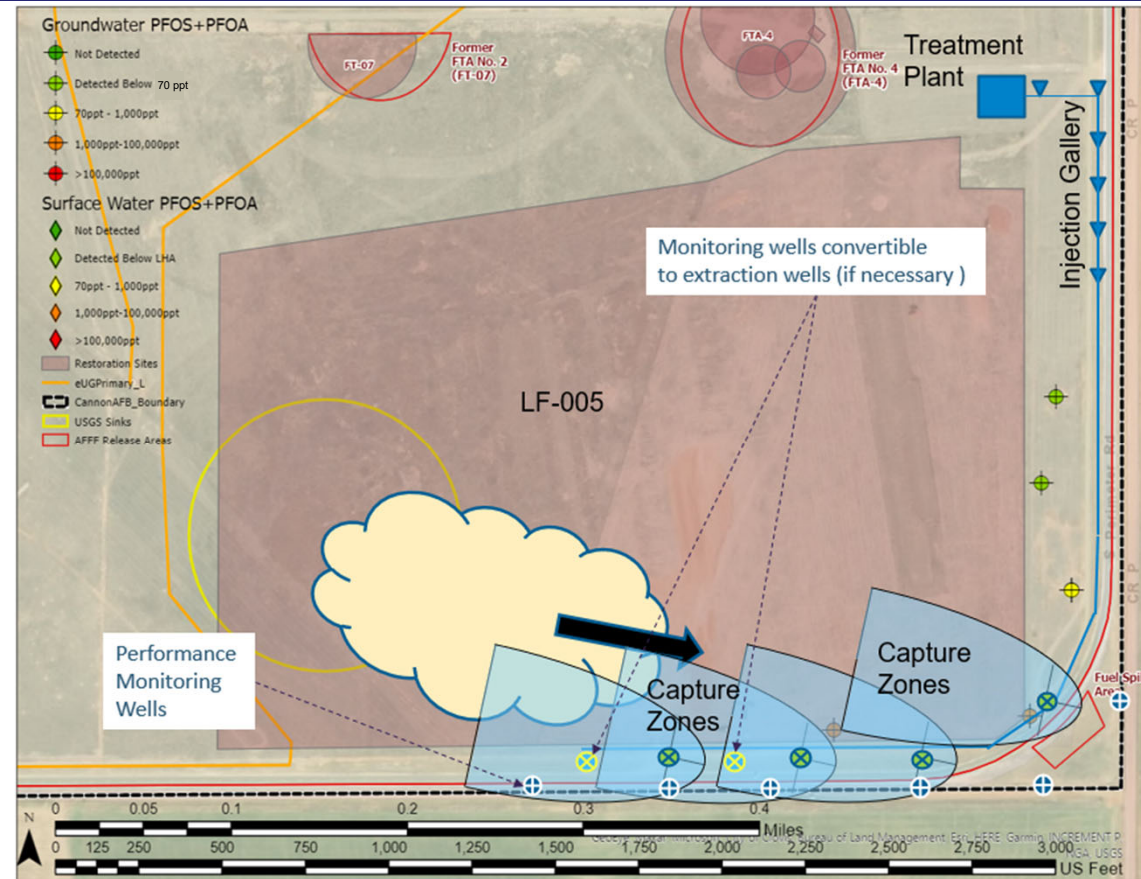




# South- East Engineering Evaluation/Cost Analysis– Pilot Study



- **Extraction wells**
  - 4 extraction wells with pumps
  - 2 extraction wells with no pumps used as monitoring wells
- **6 Injection wells**



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# South-East Engineering Evaluation/Cost Analysis— Pilot Study



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# South-East Engineering Evaluation/Cost Analysis– Pilot Study



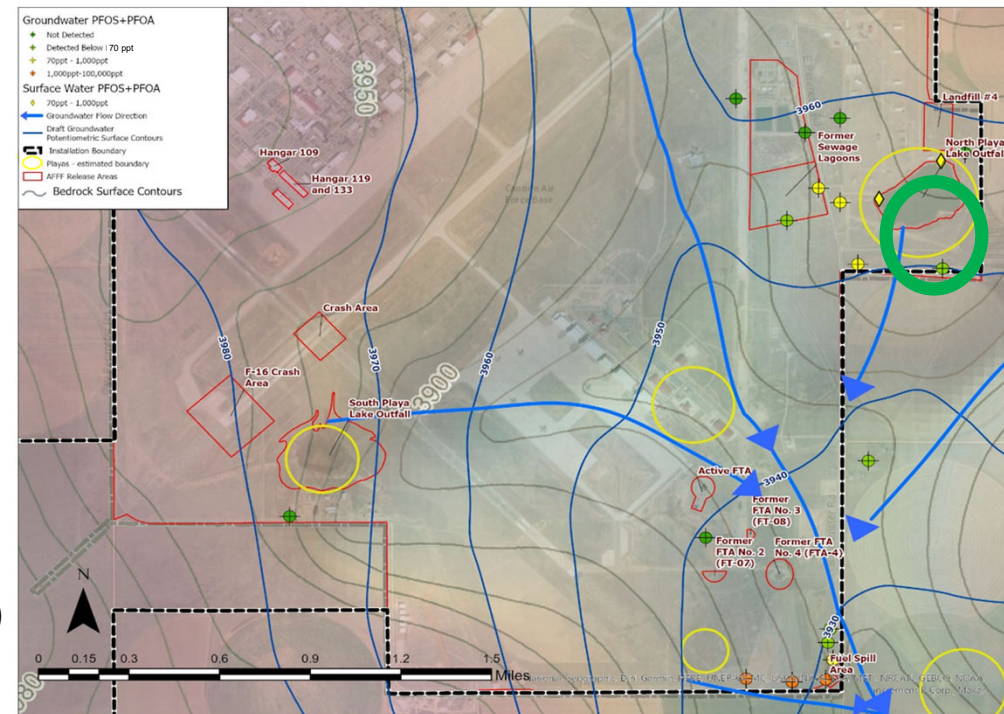
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# North Playa Engineering Evaluation/Cost Analysis– Pilot Study

- **Contract Awarded – 26 September 2023**
- **Kick-Off Meeting COMPLETED – 4 October 2023**
- **Sampling Event – ~August 2024**
- **Treatability Study – TBD**
- **Design/Work Plan – TBD**
  - (30-day NMED/EPA comment period)
- **Construction Start – TBD**
- **Operation Start – TBD**
- **EE/CA Final – TBD**
  - (30-day NMED/EPA/Public comment period)
- **EE/CA output will determine interim action**







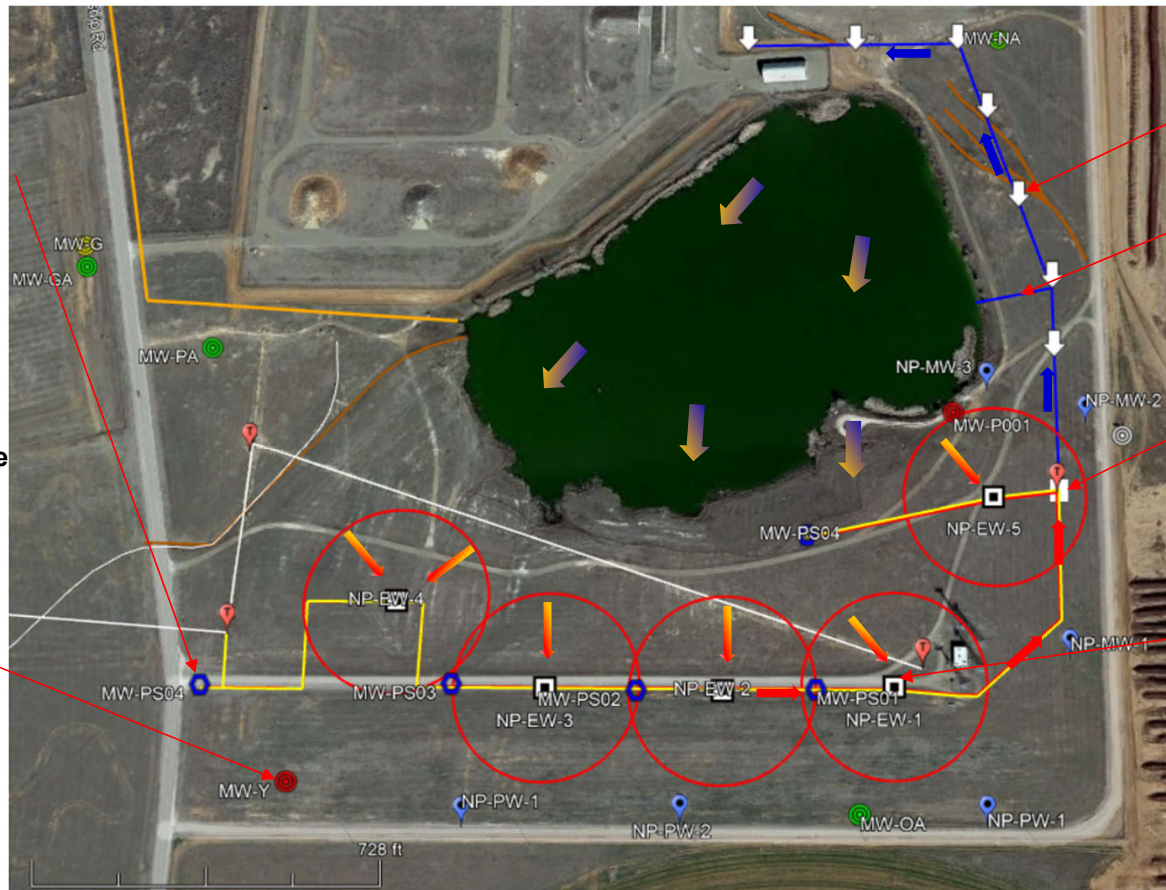
## Closed Loop Groundwater Recirculation North Playa Lake Pilot Study Treatment System Design Layout



Additional extraction wells without pumps operating as monitoring wells increases system efficiency and flexibility In case future groundwater extraction capacity is necessary

Existing monitoring well network will be augmented with capture zone performance monitoring wells to ensure compliance along the base Perimeter

100% water recycled on-base



Groundwater reinjection following treatment

Bypass allows for future flexibility (if necessary)

1000 gallon per minute groundwater treatment in a lead lag configuration Using 56,000 ion exchange resin, LGAC pretreatment

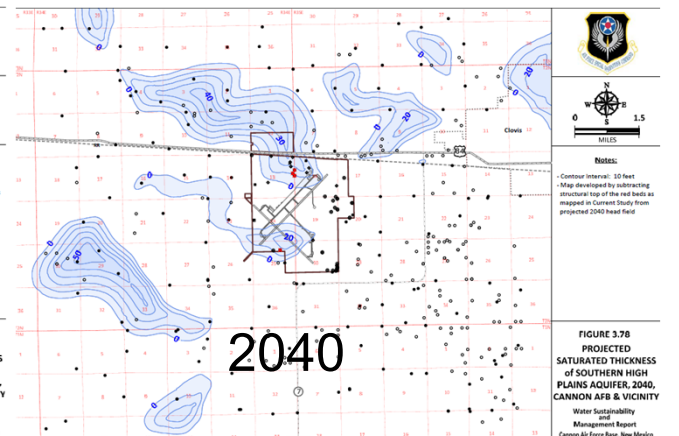
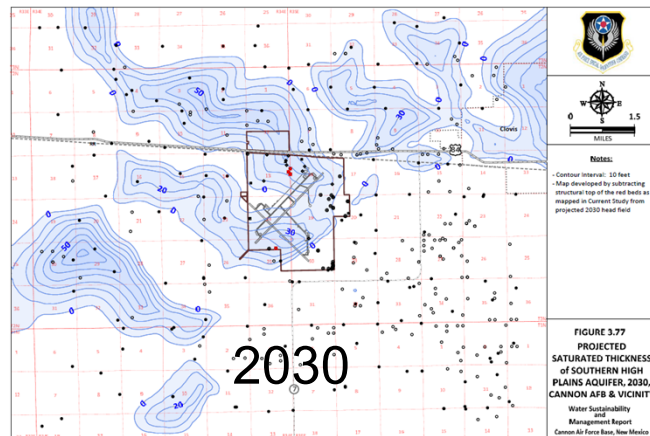
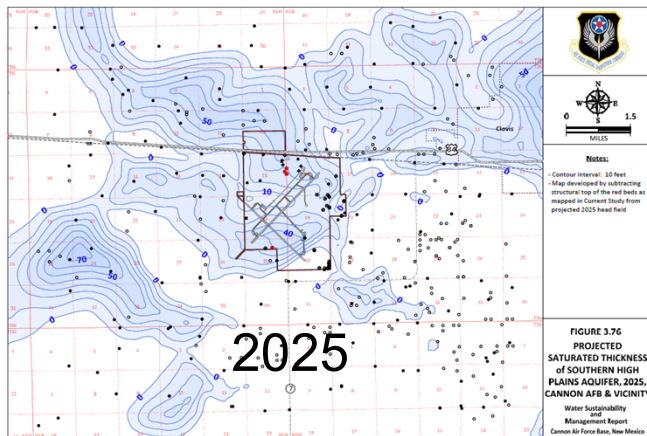
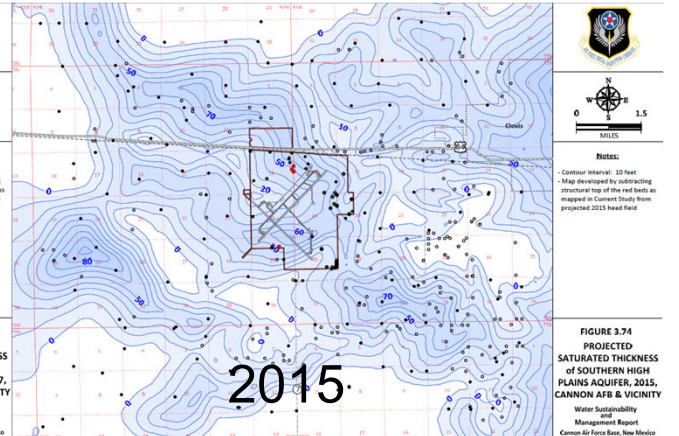
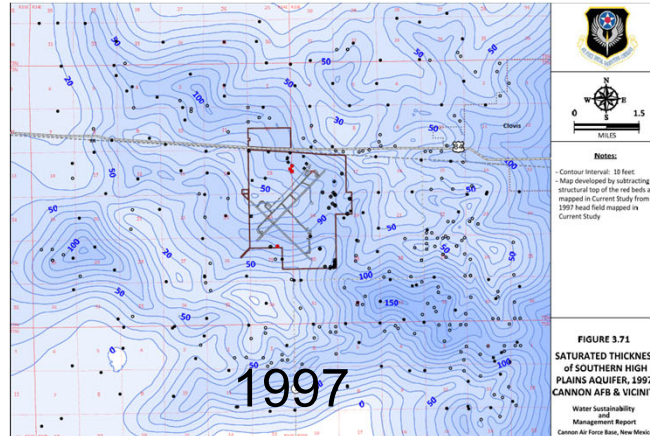
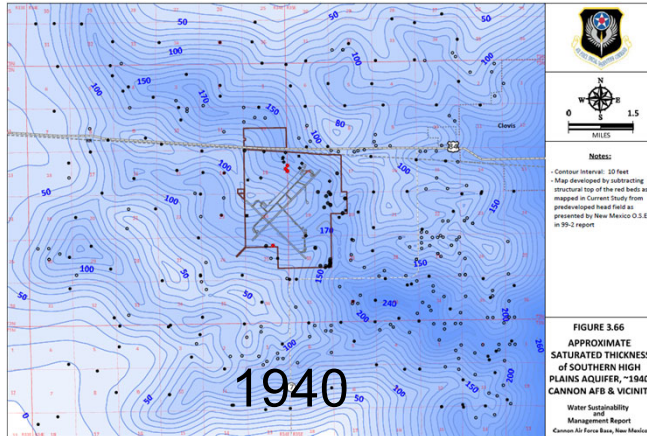
5 Grundfos 6 (230S400-10, 40 Hp, VFDs) extraction wells operating at 200 gpm per well. VFDs Optimal balancing to environmental conditions

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# Cannon AFB Groundwater Declination



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## ***PFAS Response Spending to Date***



- **Expenditures to date \$71,467,680**
  - **Preliminary Assessment: \$38,754**
  - **Site Inspection: \$2,024,231**
  - **Off Base Site Inspection: \$505,000**
  - **Remedial Investigation: \$10,684,793**
  - **United States Geological Survey (USGS) work to understand groundwater flow: \$735,000 in FY20, \$1,065,000 in FY21, \$987,000 in FY22, \$582,000 in FY23**
  - **South-East Corner Engineering Evaluation/Cost Analysis – Pilot System: \$23,576,561**
  - **North Playa Engineering Evaluation/Cost Analysis – Pilot System: \$30,292,016**
  - **Off Base Point of Use Filtration: \$843,515**
  - **Investigation for alternate PFAS Sources: \$133,810**



## *Going Forward*



- **South-East EE/CA - Pilot Study**
  - Continue construction
- **North Playa EE/CA - Pilot Study**
  - Prepare work plans, then conduct bench scale test
- **Remedial Investigation**
  - Field work; continue monitoring well installation both on and off base while collecting additional soil and groundwater samples
- **Next Public Update**
  - Tentatively planned 12 November 2024



## Additional Information



### ■ Admin Record (AR) Links to Cannon Air Force Base reports:

<https://ar.afcec-cloud.af.mil/>

- PA: AR# 1941
- SI: AR# 1938
- Off base SI: AR# 1940
- RRSE: AR# 2063, 2790, 2806
- Treatability Work Plan: AR# 2072
- RI Work Plan: AR# 2074
- Aquifer Test Work Plan: AR# 2075
- Treatability Report: AR# 2800
- Aquifer Report: AR# 2801
- South-East Pilot Study Design: AR# 2805

AFCEC ADMINISTRATIVE RECORD

Administrative Record Search

Search Criteria

Active Duty Air National Guard BRAC

Installation List:

Search Installation here...

AF Plant 3, OK

AF Plant 36, OH

AF Plant 4, TX

AF Plant 42, CA

AF Plant 44, AZ

AF Plant 59, NY

AF Plant 6, GA

AF Plant 70, CA

AF Plant 85, OH

AF Plant PJKS, CO

AFRL Rome Labs

Altus AFB, OK

Anvil Mountain RRS, AK

Arnold AFB, TN

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Author Affil:

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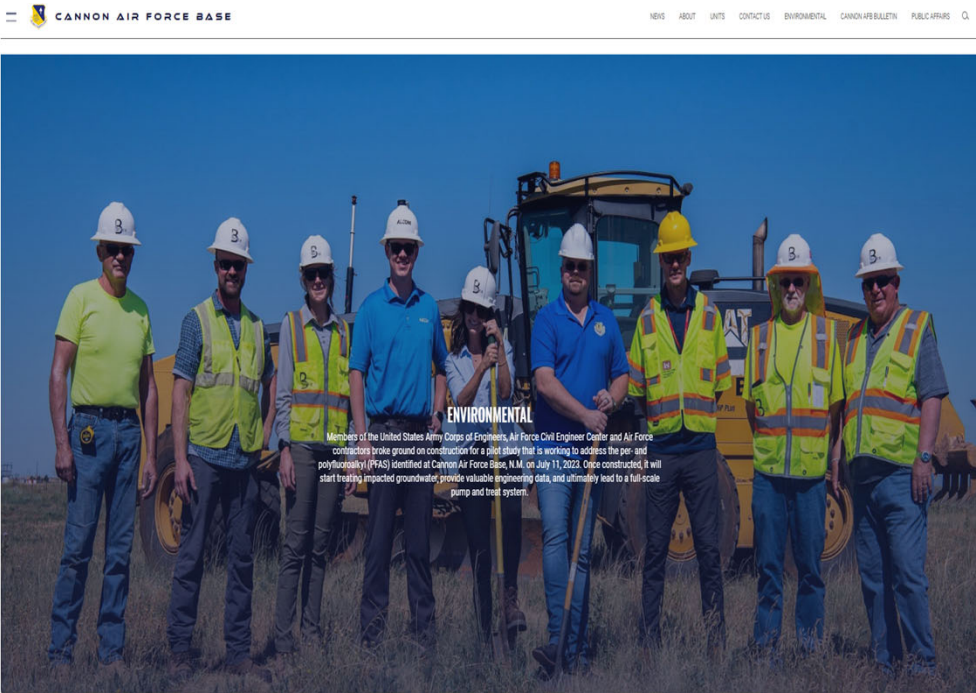
DSN: 969-0758 Phone: 210-395-0758 Email: afcec.ar.helpdesk@us.af.mil

Official United States Air Force Website





# Additional Information



## PFAS UPDATES

The next PFAS Update will occur in November 2023.

## CANNON AFB PFAS PUBLIC UPDATE ARCHIVE

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### Cannon AFB PFAS Public Update

17 May 2023

Video by 1st Lt. Hannah Canales

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May 2023 Air Force Civil Engineer Center Virtual PFAS Update for Cannon Air Base

27th Special Operations Wing Public Affairs

May 17, 2023 | 28:16

Chris Gierke, Air Force Civil Engineer Center restoration project manager at Cannon Air Force Base explains PFAS remediation efforts on Cannon Air Base.

<https://www.cannon.af.mil/Environmental/>





## ***Common Acronyms***



- **Administrative Record (AR)**
- **Aqueous Film Forming Foam (AFFF)**
- **Agency for Toxic Substances and Disease Registry (ATSDR)**
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- **Department of the Air Force (DAF)**
- **Department of Defense (DoD)**
- **Engineering Evaluation/Cost Analysis (EE/CA)**
- **Environmental Protection Agency (EPA)**
- **Food and Drug Administration (FDA)**



## Common Acronyms



- New Mexico Environmental Department (NMED)
- Parts Per Trillion (ppt)
- Per- and polyfluoroalkyl substances (PFAS)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorobutanesulfonic acid (PFBS)
- Perfluorooctanoic acid (PFOA)
- Preliminary Assessment (PA)
- Remedial Investigation (RI)
- Relative Risk Site Evaluation (RRSE)
- Site Inspection (SI)



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**Any question please contact [27SOCES.cannon.rpm@us.af.mil](mailto:27SOCES.cannon.rpm@us.af.mil)**