

Air Force Installation & Mission Support Center



Air Force Response to Per- and Polyfluoroalkyl Substances (PFAS)

Paul Carroll

Former Chanute AFB

30 April 2024



Agenda

- What are PFAS?
- Air Force response
- Chanute results and actions
 - Preliminary Assessment/Site Inspection
 - Non-drinking water response
 - Next steps - Remedial Investigation
 - Keeping the community informed
- More information
- Questions?





What are PFAS?

PFAS are a group of synthetic fluorinated chemicals. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are two organic chemicals within the PFAS group that were used in industrial and consumer products such as nonstick cookware, stain-resistant fabric and carpet, waterproof fabric, some food packaging, and the firefighting agent Aqueous Film Forming Foam (AFFF).

- AFFF is widely used at commercial and military airports across the U.S.; the Department of the Air Force (DAF) began using AFFF in the 1970s to extinguish petroleum fires, commonly associated with burning aircraft, to save people and property.
- At Chanute AFB, AFFF was used and stored until the base closed in September 1993.



Air Force Response



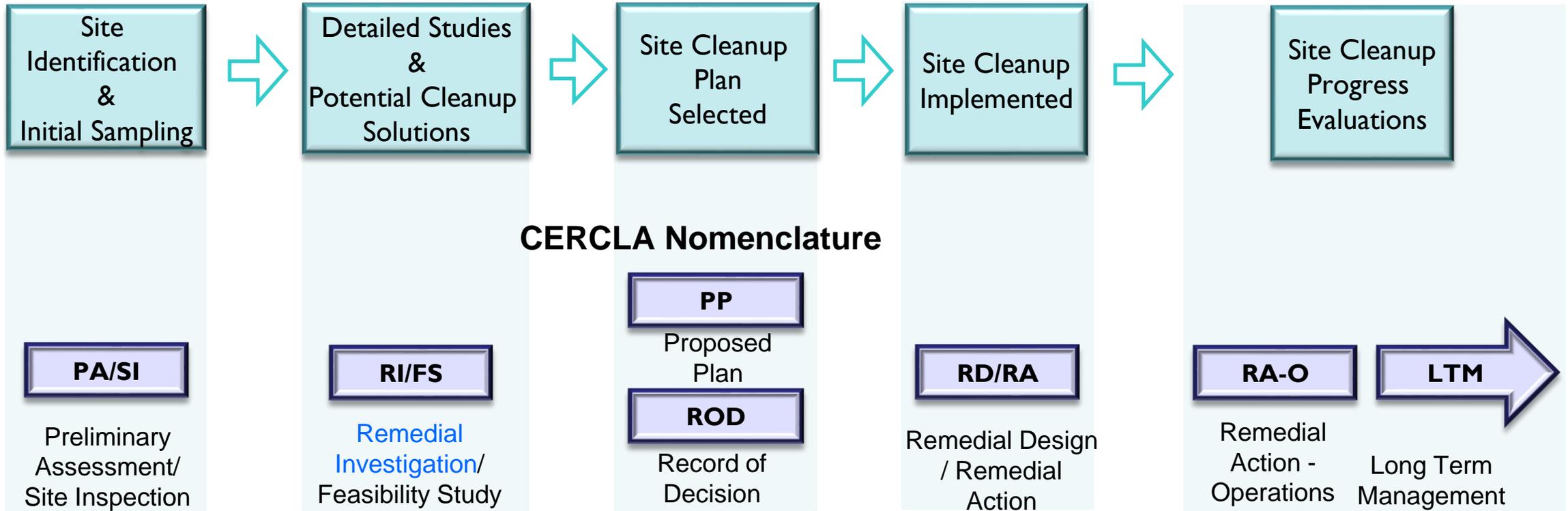
The Air Force's PFAS investigation work and mitigation actions are conducted pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, or CERCLA.



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CERCLA Overview





Air Force Response - BRAC



CERCLA Phase	Status as of Jan 2024
<p>Preliminary Assessment (PA) A base-wide records review identified fire training areas, crash sites, and other areas at installations where AFFF may have been released.</p>	<p>Of the 39 AF BRAC installations requiring PAs, 100% are complete.</p>
<p>Site Inspection (SI) AFCEC conducted groundwater, surface water, soil, and sediment sampling to verify releases, identify potential pathways to human receptors, and identify the need for additional investigation. If sampling indicated potential complete pathways to human drinking water supplies, AFCEC expanded sampling and tested public and private drinking water wells.</p>	<p>Of the 30 AF BRAC installations planning an SI, 100% are complete.</p>
<p>Remedial Investigation (RI) AFCEC continues the CERCLA process when a release is confirmed to determine the nature and extent of contamination and assess risk to human health and the environment.</p>	<p>Of the 30 AF BRAC installations planning an RI, 18 have been awarded.</p>



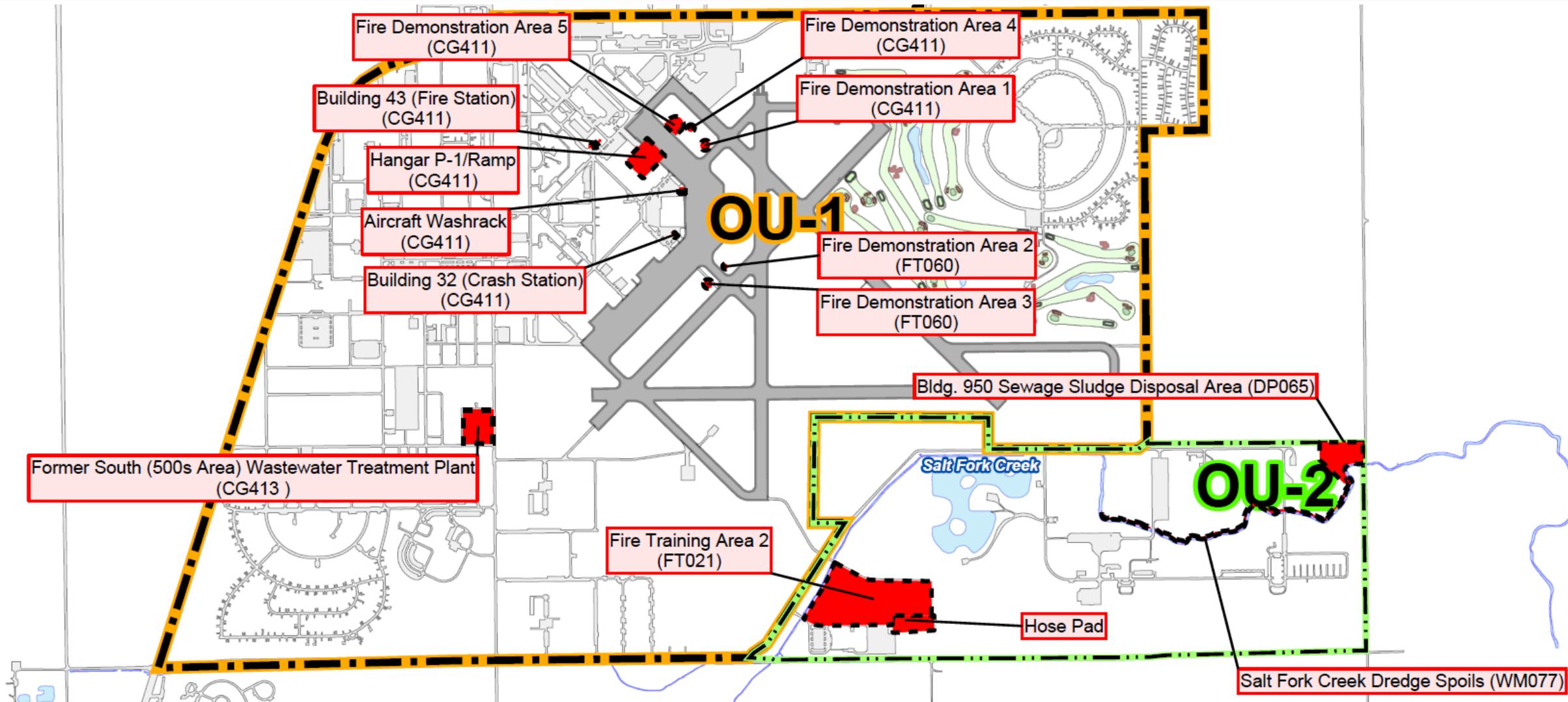
Former Chanute AFB Preliminary Assessment



- **A Preliminary Assessment was completed in 2016**
 - Personnel interviews
 - Historical document reviews
 - Archives research at national archives repositories
- **Reviewed areas where AFFF was stored, handled, used or released**
 - Crash sites/aircraft fires
 - Areas where AFFF use or release was documented via personnel interviews, reports, etc.



Former Chanute AFB AFFF Areas



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Former Chanute AFB Site Inspection



- **Site Inspection sampling conducted during two events between 2014 and 2017**
 - **Wisconsinan Groundwater (shallow)**
 - 49 Wisconsinan monitoring wells sampled (new and existing)
 - All Wisconsinan wells show PFOS or PFOA above the current EPA Regional Screening Levels (RSLs) *RSLs are screening levels to determine if further investigation and assessment is required at a particular site.
 - **Illinoian Groundwater**
 - 8 Illinoian monitoring wells sampled (new and existing)
 - PFOS and PFOA were not detected in any of the wells
 - **Soil**
 - 81 soil boring locations
 - Almost all show PFOS and PFOA above the current EPA RSLs

* Current EPA RSLs are November 2023



Former Chanute AFB Site Inspection (continued)



■ SI Sampling included migration pathways

■ Salt Fork Creek Surface Water and Sediment

- 9 co-located on base surface water and sediment locations
- PFOS and PFOA were detected in surface water and sediment

■ Stormwater System

- 41 stormwater sample locations (samples collected from onbase stormwater manholes)
- PFOS and PFOA were detected in all but one location



Former Chanute AFB Response



Non-Drinking Water Response:

- PFOS and PFOA were detected in Landfill 2 leachate pumped from the leachate collection system under the landfill. The Fire Training Area, a confirmed AFFF release area, is located next to Landfill 2 and groundwater flows towards the landfill.
- AFCEC installed a granular activated carbon (GAC) system to treat Landfill 2 leachate prior to discharge to the Village of Rantoul publicly owned treatment works (POTW) in 2016.





Former Chanute AFB

Next Steps



■ Remedial Investigation

- Contract has been awarded
- Field work began week of April 29, 2024
- In general, the sampling approach includes:
 - Soil and Wisconsinan groundwater sampling at all areas
 - Additional Illinoian groundwater sampling
 - Sanitary sewer sampling and stormwater sampling (including outfalls to Salt Fork Creek)
 - Salt Fork Creek surface water and sediment sampling upstream, on-base, and downstream
- Human health and ecological risk assessment



Keeping Residents and Community Informed



- **AFCEC is committed to being transparent in its handling of PFAS-related issues and maintaining an open dialogue with communities, regulators and other stakeholders.**
- **AFCEC will continue to work with Illinois EPA, the Village of Rantoul, and other stakeholders to ensure appropriate measures are being taken to address PFAS at former Chanute AFB.**



More Information

For more information on PFAS, visit:

Air Force Civil Engineer Center

www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/

Environmental Protection Agency

www.epa.gov/pfas

Agency for Toxic Substances and Disease Registry

www.atsdr.cdc.gov/pfas/

Illinois EPA

<https://epa.illinois.gov/topics/water-quality/pfas.html>

Media inquiries/support contact:

AFIMSC Public Affairs Office 1-866-725-7617 or AFIMSC.PA.workflow@us.af.mil



Former Chanute AFB More Information



For more information on PFAS at former Chanute AFB, visit:

Chanute BRAC page

<https://www.afcec.af.mil/Home/BRAC/Chanute.aspx>

AF Administrative Record (AR)

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

Select “BRAC” at the top, then select “Chanute AFB” from the Installation List. Enter the AR # from below in the corresponding search field and click on “Search.”

- Final Site Investigation Report for AFFF Areas, December 2018 (AR 603728 and 593849.1)
- Final Perfluorinated Compounds Preliminary Assessment (PA), May 2016 (AR 477553)

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Former Chanute Air Force Base

PFAS Remedial Investigation

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Rank First Name Last Name
Alliant and APTIM Office Symbol
30 April 2024 Date of Briefing



Agenda



- **PFAS Remedial Investigation (RI)**
 - Objective
 - Planning
 - Environmental Setting
 - AFFF Release Areas
 - Proposed Sampling
 - Schedule
- **1,4-Dioxane RI**



- **Define nature and extent of PFAS**
 - **Soil**
 - **Groundwater (Wisconsinan and Illinoian)**
- **Evaluate migration pathways**
 - **Salt Fork Creek**
 - **Stormwater system**
 - **Sanitary sewer system**
- **Human health and ecological risk assessment**



Remedial Investigation Planning



- **Contract awarded through USACE - June 2023**
 - **Alliant/APTIM**
- **Kick-off and site visit meeting with Illinois EPA - July 2023**
- **Scoping meeting with Illinois EPA - September 2023**
- **Risk assessment scoping meetings with Illinois EPA - December 2023 and January 2024**
- **Draft UFP-QAPP submitted to Illinois EPA - February 2024 (currently resolving comments)**
- **Risk assessment methods submittal to Illinois EPA – Anticipated May 2024**



Remedial Investigation



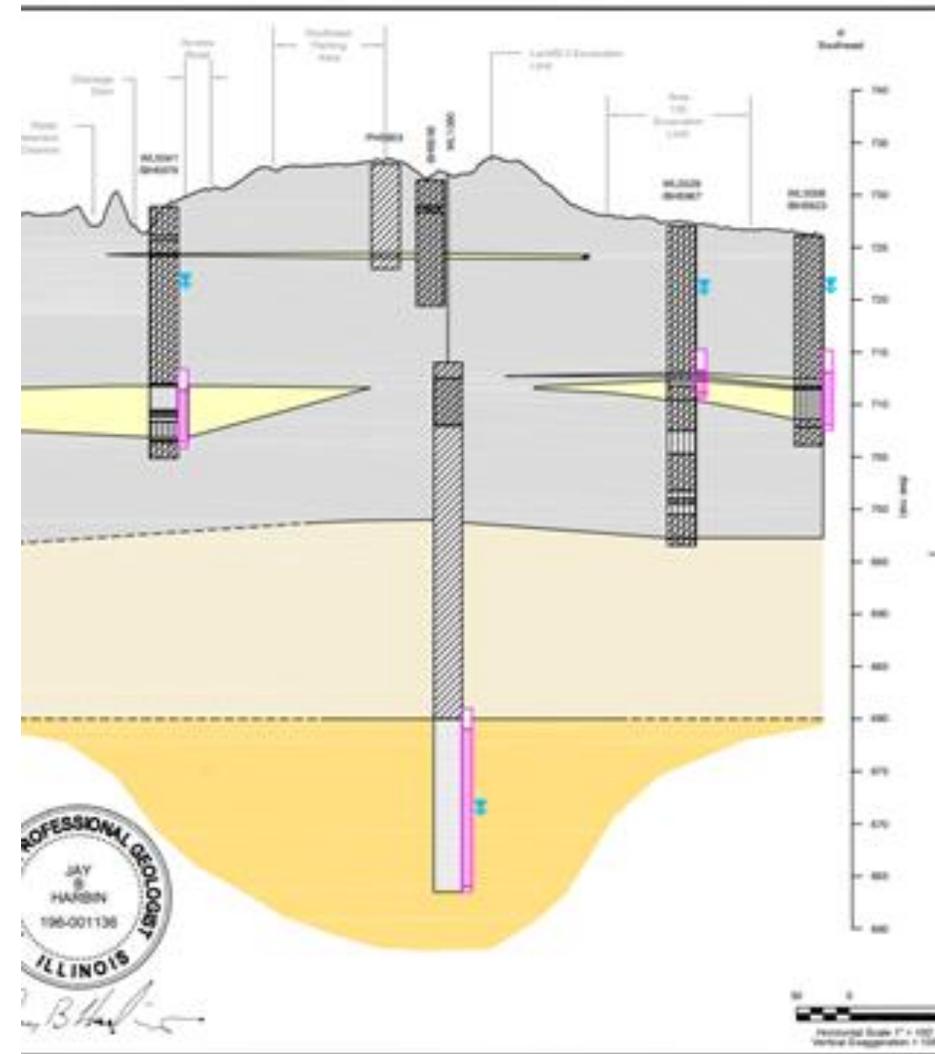
- **Focus of RI is AFFF release areas**
 - 12 identified during the PA/SI
 - 2 additional potential AFFF release areas added during RI planning
- **Migration pathways include Salt Fork Creek, stormwater system, and sanitary sewer system**
- **Updates since the Site Inspection**
 - Site inspection data reviewed against the current screening levels
 - EPA finalized method 1633 for analysis of PFAS



Environmental Setting

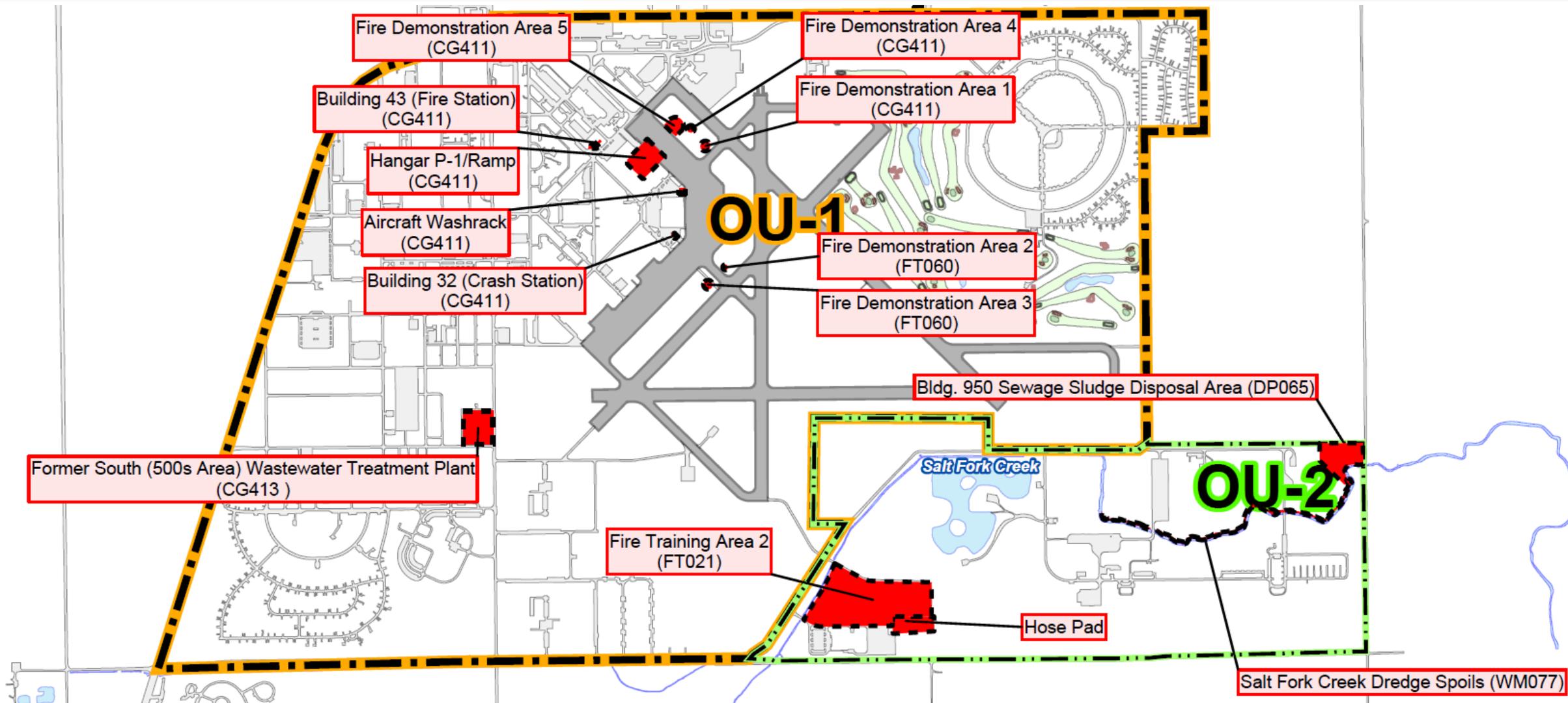


- **Shallow Wisconsinan Groundwater**
 - Groundwater is about 5 feet below ground surface
 - Geology is clay and silt with interbedded sand stringers
 - No current use due to limited yield
- **Hard clay of Tiskilwa separates Wisconsinan and Deeper Illinoian Groundwater**
 - Sand and gravel aquifer starting from 60 to 90 feet below ground surface





AFFF Release Areas





Groundwater Sampling

- Sample 71 existing monitoring wells



- Install and sample 84 new monitoring wells



- **Collect 321 soil samples:**
 - Surface and subsurface soil samples
 - Soil samples from 51 selected monitoring well locations
 - 55 soil boring locations using direct push technology (DPT)
 - 24 surface soil locations to fill data gaps from Site Inspection sampling





Surface Water and Sediment Sampling



- 23 surface water and sediment locations in Salt Fork Creek
- Approximately 33 outfalls (drainage pipes and ditches) to Salt Fork Creek



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Stormwater and Sanitary Sewer Sampling

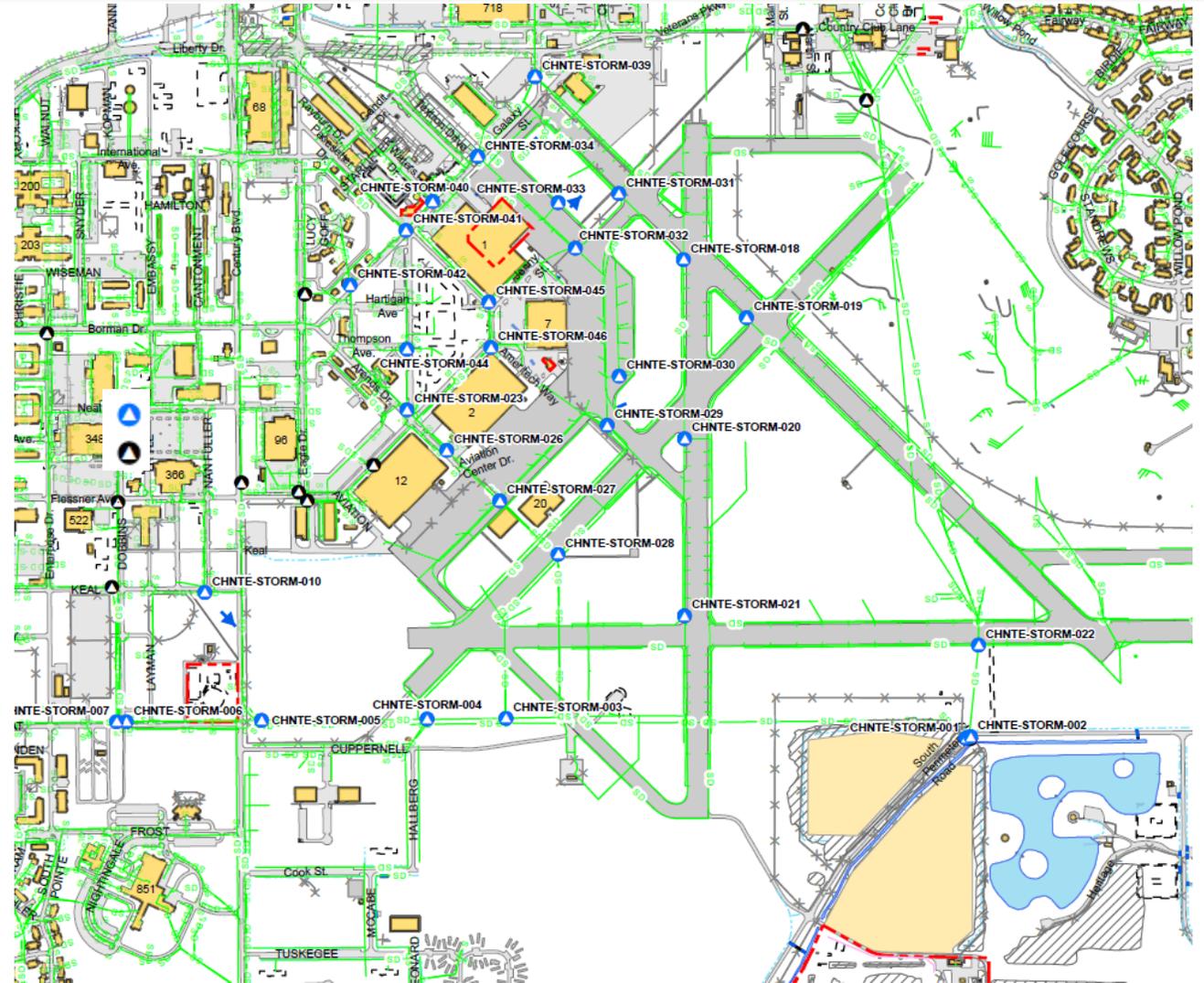


■ Collect samples in and around AFFF release areas to understand migration pathways

■ 36 sanitary sewer manholes and lift stations

■ 30 stormwater drainage system manholes

-  Stormwater sampling locations
-  Other stormwater drainage manholes





PFAS RI Schedule



- **RI fieldwork begins – April 29, 2024**
- **Phase 1 sampling – April to June 2024**
- **Phase 1 data evaluation and planning for Phase 2 - Summer 2024**
- **Phase 2 sampling – Late Summer to Fall 2024**
 - **Includes second round of sampling of Phase 1 monitoring wells**
- **Phase 3 sampling – Spring to Summer 2025**
 - **Includes second round of sampling of Phase 2 monitoring wells**
- **RI report and risk assessment – Winter 2025 to Summer 2026**

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1,4-Dioxane Remedial Investigation

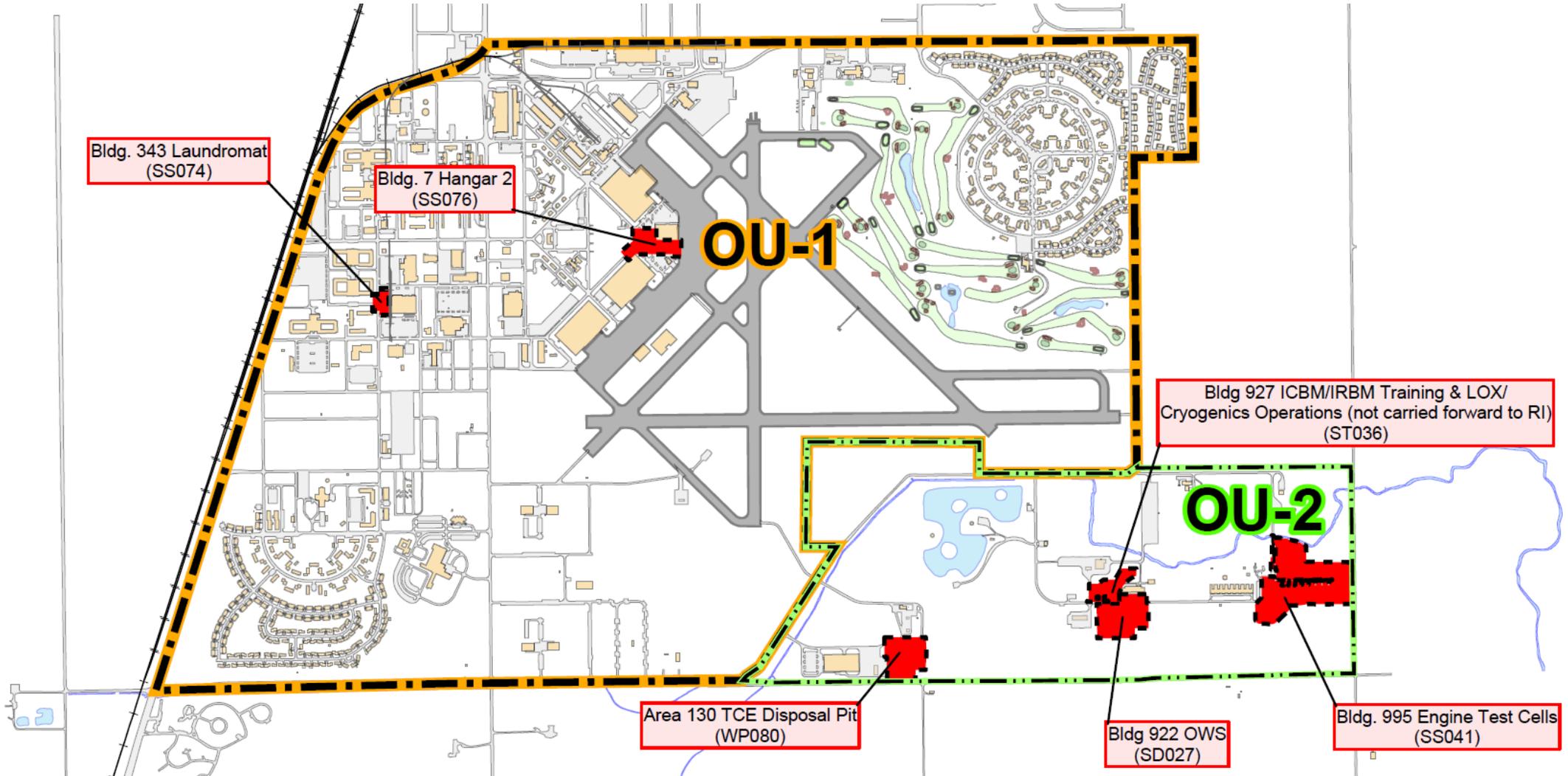
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- **1,4-Dioxane was used as a stabilizer for chlorinated solvents and identified as a potential contaminant of concern**
- **1,4-Dioxane is highly soluble in water**
- **1,4-Dioxane was not included in the previous investigations of chlorinated solvent releases at former Chanute AFB**
- **Remedial actions were implemented for chlorinated solvents including soil excavation and groundwater remediation via enhanced reductive dechlorination (anaerobic conditions)**
- **1,4-Dioxane may degrade naturally after remedial actions are completed for chlorinated solvents and sites return to aerobic conditions**



1,4-Dioxane Sites



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1,4-Dioxane Remedial Investigation



- **Site Inspection sampling was completed in 2017**
 - **Due to previous soil remediation, only groundwater was sampled**
- **2023 groundwater sampling conducted to obtain current data and evaluate natural attenuation of 1,4-dioxane**
- **2023 results showed only one site exceeded regional screening levels, which is the only site still undergoing treatment for chlorinated solvents**
- **2024 groundwater sampling planned during Phase 1 sampling at 22 existing monitoring wells to confirm 2023 findings**



PFAS and 1,4-Dioxane RIs



Questions?



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