Welcome

Restoration Advisory Board (RAB) Meeting

Robins Air Force Base (AFB)

March 12, 2026

Welcome and Program Introduction

Mr. Heyward Singleton
RAB Installation Co-chair

Acronyms and Abbreviations

- COC – Contaminant of Concern
- DPT – Direct Push Technology
- FFA – Federal Facilities Agreement
- FYR – Five-Year Review
- GA EPD – Georgia Environmental Protection Division
- LF004 – Landfill No. 4
- LUC – Land Use Control
- MNA – Monitored Natural Attenuation
- NPL – National Priorities List
- O&M – Operations and Maintenance
- OU – Operable Unit
- PFAS – Per- and Polyfluoroalkyl Substances

Acronyms and Abbreviations

- RA-O – Remedial Action - Operation
- RAO – Remedial Action Objective
- TCE – Trichloroethene
- USACE – United States Army Corps of Engineers
- USEPA – United States Environmental Protection Agency
- VOC – Volatile Organic Compound

Restoration Advisory Board

Five-Year Review (FYR) for National Priorities List (NPL) Site

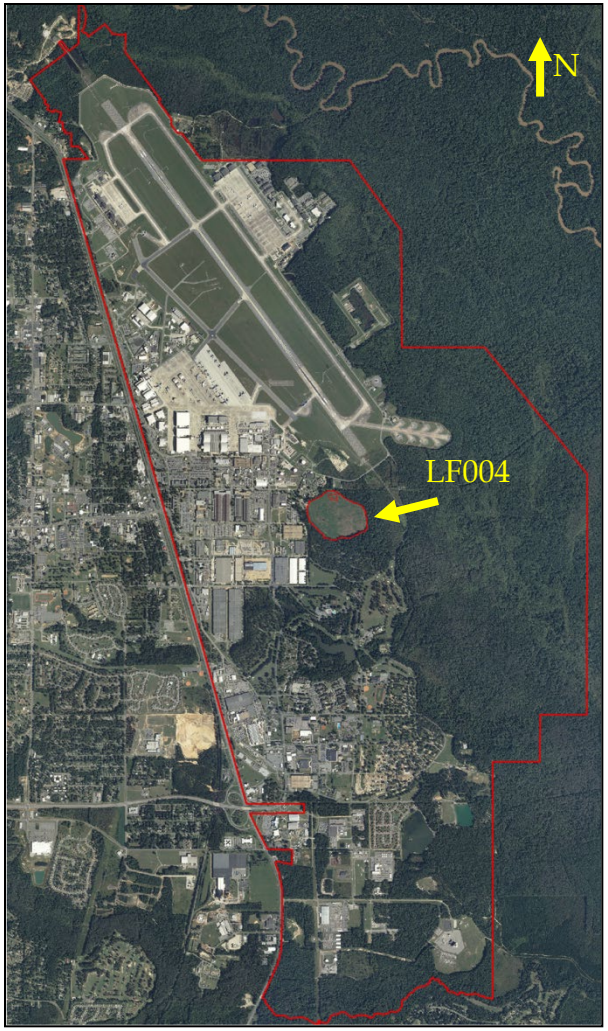
Fred Otto
Restoration Program Manager
AFCEC/CZRE

March 12, 2026

Sixth FYR for NPL Site

- **Purpose of FYR**
  - **Comprehensive evaluation of remedial progress**
  - **Determine if the remedy selected for the site remains protective of human health and the environment**

Sixth FYR for NPL Site



- **Operable Unit 1 (OU1)**
  - **Landfill No. 4 (LF004)**
    - 45-acre landfill
    - Operated 1965 to 1978
    - General refuse and industrial waste
  - **Waste Pit 14 (WP014)**
    - 1.5-acre Sludge Lagoon
    - Operated 1962 to 1978
    - Industrial waste treatment plant sludge
- **Operable Unit 3 (OU3)**
  - **Groundwater impacted by releases from OU1**
    - Volatile organic compounds (VOCs) and metals

Sixth FYR for NPL Site

- **OU1 (LF004 and WP014) Remedies**
  - **WP014 treatment**
    - In-situ volatilization, excavation, and solidification (1996)
  - **LF004 engineering and institutional controls**
    - Cover system with geocomposite liner (1998)
    - Passive landfill gas venting system (1998)
    - Stormwater management controls (1998)
    - Land Use Controls (LUCs)

LF004 Passive Gas Vent


LF004 LUC (Fence and Locked Gate)

Sixth FYR for NPL Site

- **OU3 (Groundwater) remedies**
  - **Groundwater recovery and treatment system installed (1997)**
  - **Groundwater recovery ceased (2007)**
  - **Monitored Natural Attenuation (MNA) study initiated (2007)**
  - **Final approval to transition to MNA (2010)**

Groundwater Treatment Plant

Sixth FYR for NPL Site

- **Comprehensive evaluation of remedy to determine if it remains protective of human health and the environment**
  - **LUCs**
  - **Groundwater MNA**

Sixth FYR for NPL Site

- Interim Record of Decision (ROD) – September 1995
- First FYR – March 2001
- Final ROD – September 2004
- Second FYR – June 2006
- Third FYR – September 2011
- Fourth FYR – June 2016
- Fifth FYR – August 2021
- Sixth FYR – Due 29 June 2026
  - Behind schedule due to funding delay

Sixth FYR for NPL Site

- FYR process typically 18 months
- FYR funding programmed for beginning of 2025, but not received until late August 2025
- FYR being conducted by United States Army Corps of Engineers (USACE) in-house to expedite schedule

Restoration Advisory Board

LF004
Update on Progress

Ms. Elizabeth Rhine
Bhate Environmental

March 12, 2026

Overview

- Background
- Cover system
- LUCs
- Inspections and Maintenance
- Groundwater
- Path Forward

Background

- 45-acre inactive landfill
- Used between 1965 and 1978 for disposal of general refuse and industrial wastes
- Former Sludge Lagoon (WP014) is located within LF004 boundary

Background

LF004 is divided into three OUs

1) **OU1 – Landfill and WP014**
   - Geocomposite cover system and passive landfill gas ventilation system installed over entire surface of LF004, including WP014, as part of cover renovation activities in September 1998
   - Operations and maintenance (O&M) of LF004 began in October 1998
2) **OU2 – Wetlands and Surface Water**
   - Granted No Further Action status on 29 September 2006
3) **OU3 – Groundwater**
   - Groundwater recovery system operated from 1997 to 2007 when it was replaced with MNA

Background

- Placed on NPL in 1987
- Administered under a Federal Facilities Agreement (FFA) signed 14 June 1989
- Final ROD submitted to United States Environmental Protection Agency (USEPA) in 2000 and approved on 30 September 2004

Background

- **Remedial action objectives (RAOs) of containment and exposure control addressed with:**
  - **Source area treatment (implemented in 1996)**
  - **Landfill cover system (1998)**
  - **Passive venting of landfill gas (1998)**
  - **Surface water (runoff) controls (1998)**
  - **LUCs and quarterly inspections (ongoing)**
  - **Groundwater remediation (1997)**
- **Optimized Remediation Contract Performance Objective: Remedial Action – Operation (RA-O)**

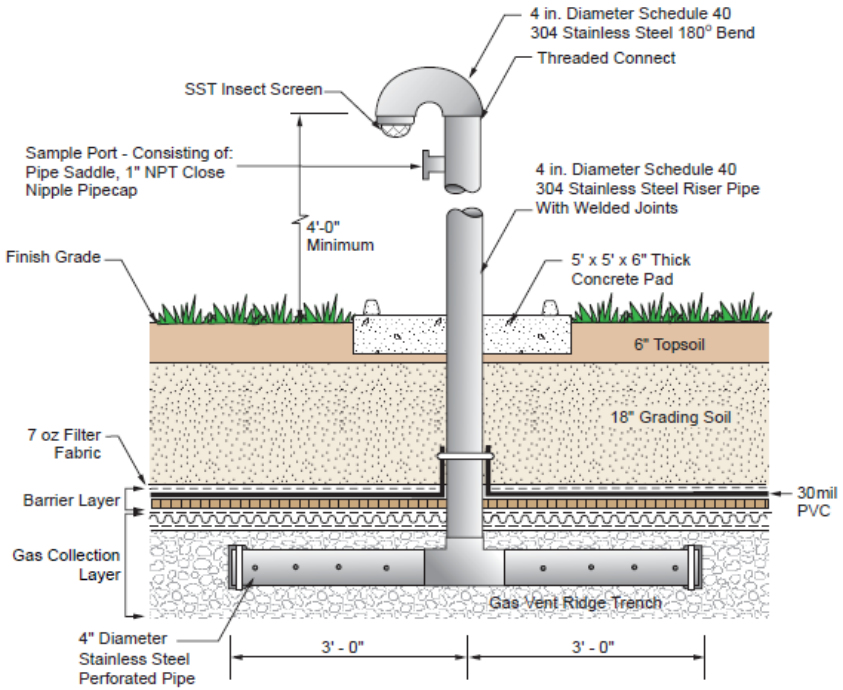
Background

- **OU1 – Landfill and Sludge Lagoon Waste Pit 14 (WP014)**
  - **1.5-acre unlined lagoon used from 1962 to 1978 to dispose sludge from industrial wastewater treatment plant and other miscellaneous industrial wastes**
  - **Phenols, heavy metals, cyanide, solvents, cleaners, paint removers, hydraulic fluids, and oils**
  - **WP014 was closed in 1978 and capped with a clayey sand cover approximately 5 feet thick**
  - **Waste was treated in 1996 by in situ volatilization followed by excavation and solidification; solidified sludge was placed on top of LF004 and covered**

Cover System

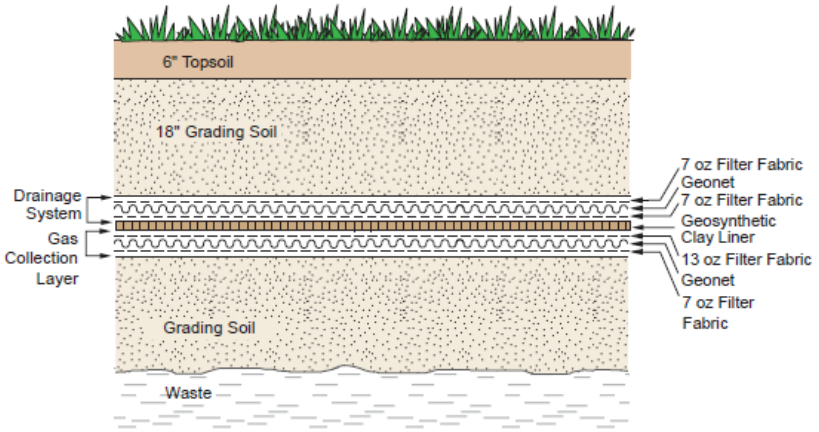
TYPICAL PASSIVE GAS VENT SCHEMATIC

(SOURCE: LANDFILL COVER RENOVATION DESIGN, LOCKHEED MARTIN, 1997)



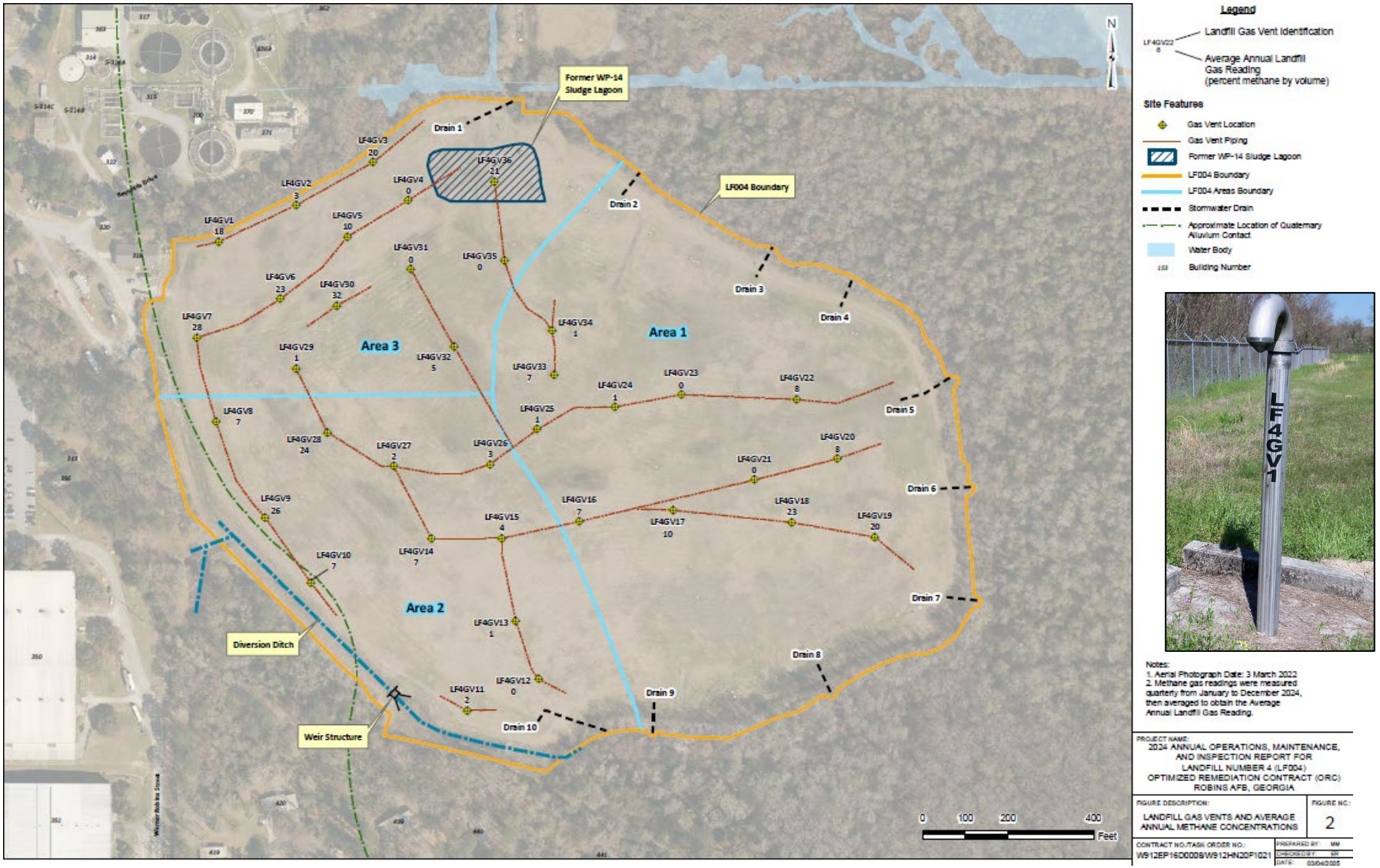
TYPICAL LANDFILL NO. 4 AND SLUDGE LAGOON CAPPING SYSTEM

[SOURCE: FINAL RECORD OF DECISION (ROD), FOR THE NATIONAL PRIORITIES LIST (NPL) SITE, OPERABLE UNITS (OUs) 1 AND 3, EARTH TECH, SEPTEMBER 2004]



NOTES:
1. FIGURES ARE NOT TO SCALE.
2. ° = DEGREE
3. ' = FEET (FOOT)
4. IN = INCH(ES)
5. " = INCH(ES)
6. MIL = 0.001 INCH
7. NO. = NUMBER
8. NPT = NATIONAL PIPE THREAD
9. OZ = OUNCE
10. PVC = POLYVINYL CHLORIDE
11. SST = STAINLESS STEEL TYPE
12. SWMU = SOLID WASTE MANAGEMENT UNIT

Cover System



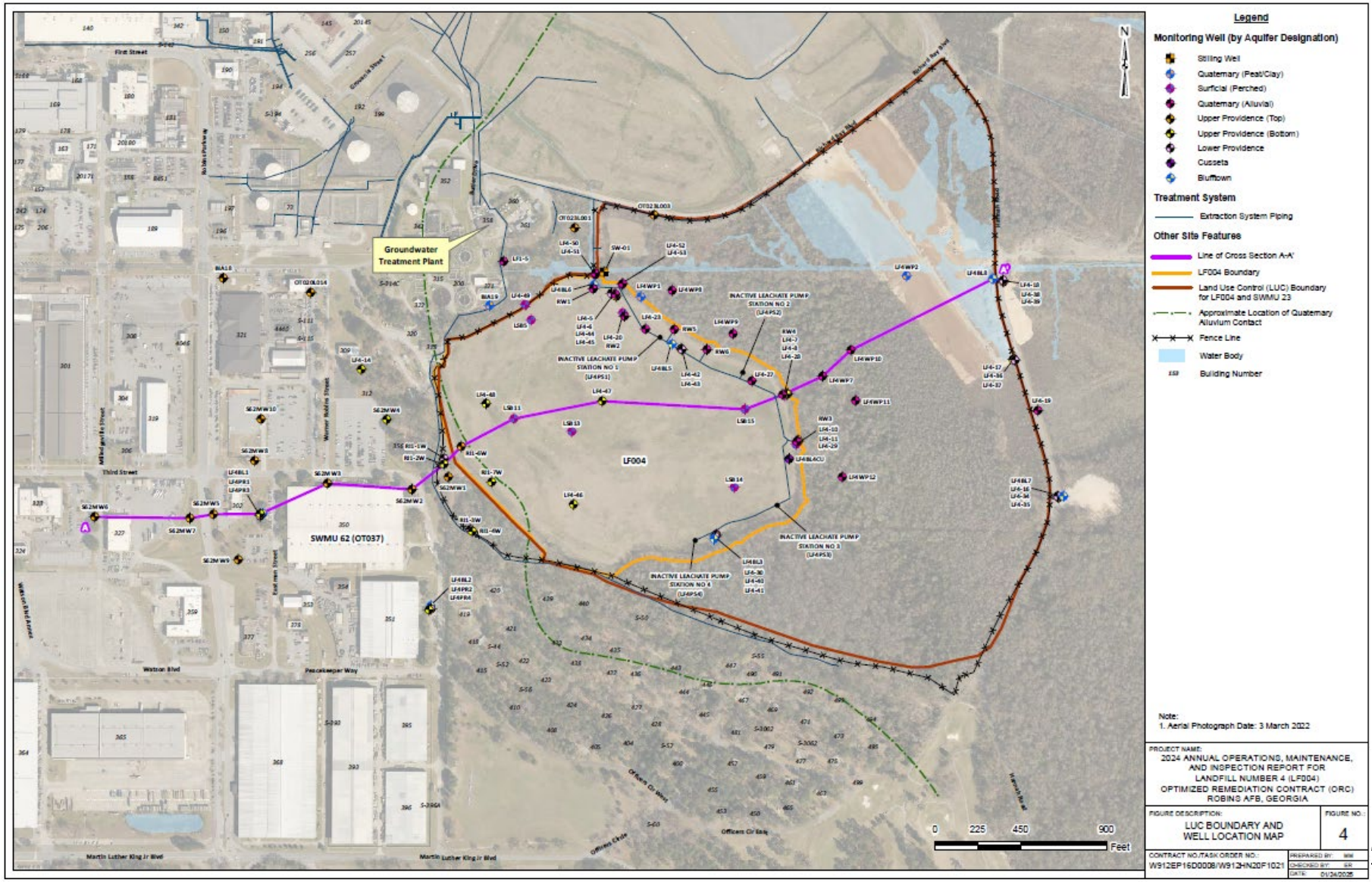
Cover System

Land Use Controls

Land Use Control	Maintenance and Quarterly Inspection Requirements
No ground-disturbing activities	Landfill surface visually inspected and maintenance performed as necessary to meet land use control objectives for OU3
Restrict access by maintaining gates at each entry point	Fencing inspected and maintenance performed when required
Maintain signage at each entrance and at other locations	Signage inspected and maintenance performed when required
Prohibit use of water from supply wells	Restricted access to site, and fencing around site with signage that states restricted access

Perimeter fences and gates

Land Use Control Boundary



Inspections

- Quarterly measurement of landfill gas concentrations at passive ventilation units
- Quarterly inspection of landfill cover system to assess its integrity and completion of as-needed repairs
- Quarterly inspection and maintenance of LUCs
- Routine maintenance of cover system, including mowing, removing shrubs and trees, restoring areas of surface erosion and hog damage, fertilizing, and re-vegetating or grassing
- Preparation and submittal of annual Operations, Maintenance, and Inspection Report documenting related activities
- FYRs

Inspections – Methane Readings

Vent Wells

Screen Maintenance

Landfill Gas Meter

Maintenance – Water Conveyance

- **Stormwater conveyance system repair**

Removal of vegetation, grading, placement of concrete surface, and final restoration.

Completed March 2013.

Maintenance – Water Conveyance

- **Stormwater conveyance system repair**

Removal of vegetation, grading, placement of concrete surface, and final restoration.

Completed March 2013.

Maintenance – Water Conveyance

- **Clearing and grubbing; herbicide application**

2025 Pre- and Post-Clearing

Maintenance – Water Conveyance

Erosion at Inlet

Erosion Repair at Inlet

Clearing and Grubbing at Outlet

Maintenance – Fence Repair

Maintenance – Tree Harvesting

- Performed in 2022 at end of runway
- Harvesting equipment damaged wells

Maintenance – Wildlife Control

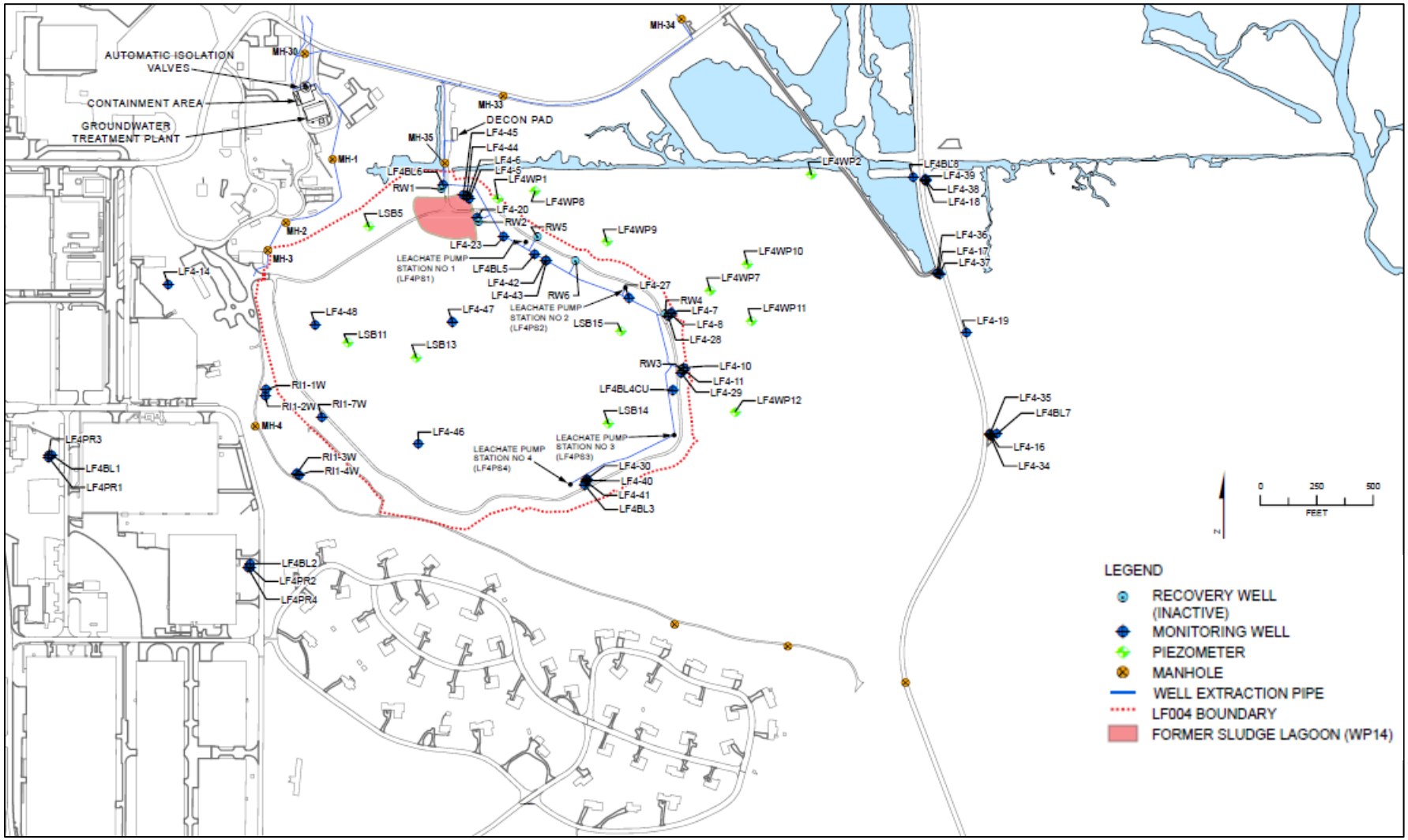
Wild Hog Rooting

Repair of Vegetative Cap

Groundwater

- Groundwater recovery system of six recovery wells and four leachate pump stations were installed at OU3 in 1997
- Groundwater and leachate collected by system was treated at groundwater treatment plant until February 2007 when system was shut down and replaced with MNA per USEPA and Georgia Environmental Protection Division (GA EPD) approval

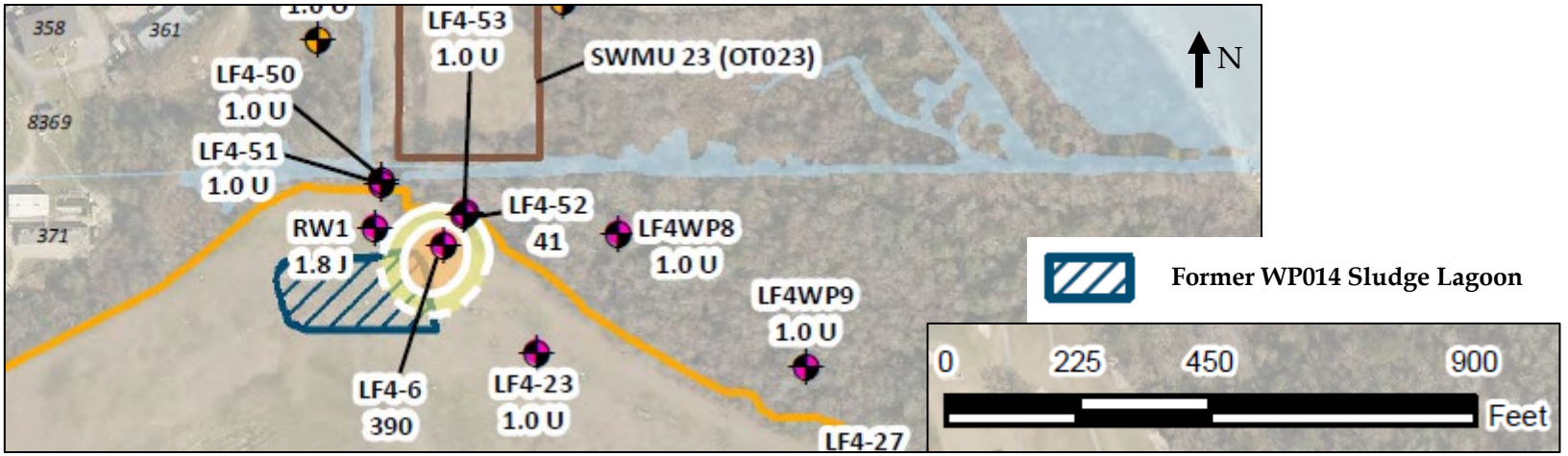
Groundwater



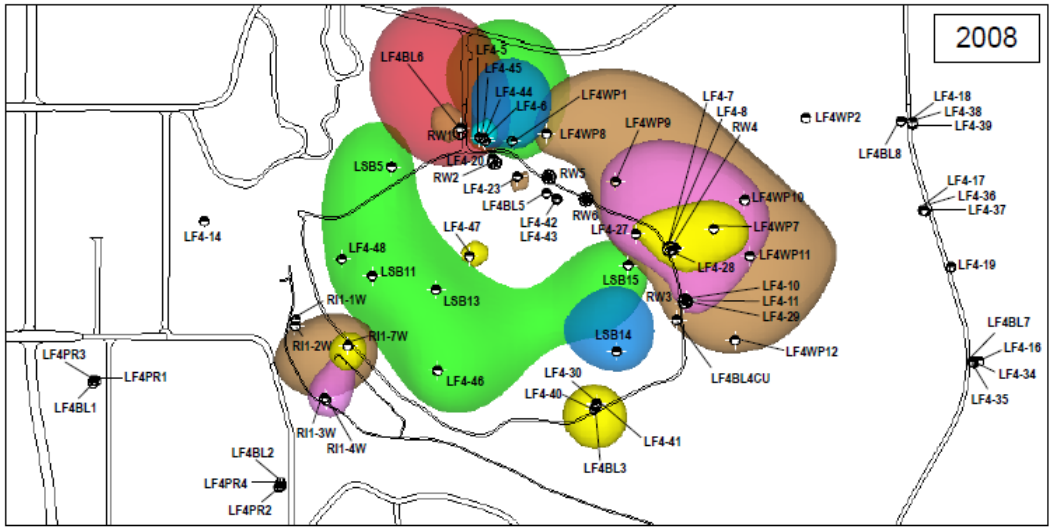
Groundwater

MNA remedy components

- **VOC and geochemical parameter analyses**
- **Generation and evaluation of time-series graphs**
- **Temporal plume comparisons**
- **Statistical analysis of data trends (Mann-Kendall)**
  - With exception of benzene (LF4-6 and LF4-52) and chlorobenzene (LF4-52 only), contaminants of concern (COCs) are stable or decreasing in all other wells



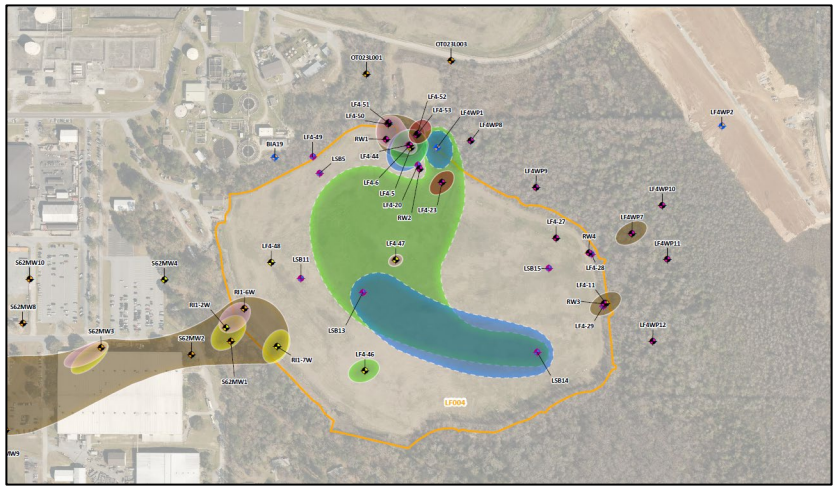
Groundwater



2008 Composite Plume Map

LEGEND

BENZENE	CHLOROBENZENE	TCE	VINYL CHLORIDE
CARBON TETRACHLORIDE	PCE	cis-1, 2-DCE	



2025 Composite Plume Map

Groundwater

- **Overall observations**
  - **VOC concentrations have reduced over time due to groundwater recovery and MNA**
  - **Reducing conditions in portions of aquifer are sustaining biological degradation of chlorinated VOCs**
  - **Plume footprint is stable to decreasing**
  - **Plume footprint is well within LUC boundary**

Path Forward

- Continue quarterly inspections
- Perform maintenance as needed (e.g., remove debris that accumulates around drain inlets, restore hog damage, restore erosion)
- Sample groundwater annually
- Continue to optimize monitoring well network
- FYR completion in 2026 (currently underway)

Restoration Advisory Board

Results of FYR for NPL Site

Jennifer Richards
USACE, Savannah District

March 12, 2026

FYR Overview

- Process
- Results
- Summary

FYR Process

- Develop review team
- Notify regulators and community of initiation of FYR process
- Conduct site inspection
- Complete technical assessment and associated reporting
- Notify regulators and community of results

FYR Process

- **FYR Team**
  - Robins AFB
  - US EPA
  - GA EPD
  - USACE

FYR Process

- Scoping meeting – 8 October 2025
- Site inspection
  - FYR site visit occurred 19 November 2025 – US EPA visit
- Technical assessment and reporting for FYR
  - Draft FYR submitted to Robins AFB – February 2026
  - Draft FYR submitted to regulators – April 2026
  - Regulatory approved FYR – To be determined
  - Signed FYR – To be determined
- Notification of results
  - September 2026 RAB

FYR Results

- **OU1 – LF004 and WP14**
  - **RAOs**
    - Containment
    - Exposure control
  - **RAOs are being met**
    - Cover system
    - Surface water control
    - Passive landfill gas collection
    - Site access control
    - Continued inspection and maintenance

FYR Results

- **OU3 – Groundwater**
  - **RAOs**
    - Containment and exposure controls
    - Prevent potential groundwater contaminant impact to adjacent wetlands
    - Restore groundwater to Maximum Contaminant Levels (MCLs)
  - **First two are being met; continued significant progress toward groundwater restoration**

FYR Results

- Trichloroethene (TCE) concentrations continue to decrease under MNA
- Overall aerial extent of LF004 plumes continues to decrease
- Time to achieve RAOs with MNA continues to be reasonable
- Protectiveness statement
  - Remedy is protective of human health and the environment
  - Potential exposure pathways are controlled through landfill cover system and implementation of LUCs

FYR Summary

- Remedial actions at LF004 are protective of human health and the environment
- Report will be placed in Administrative Record, which is available to public
- Next FYR scheduled for June 2031

Environmental Advisory Board

Progress Update: Remedial Investigation of Per- and Polyfluoroalkyl Substances (PFAS)

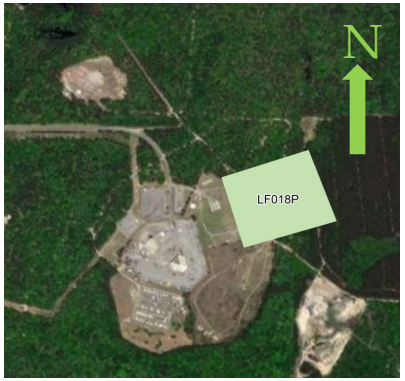
Sam Santoso
Oneida Environmental Services Group

March 12, 2026

Remedial Investigation of PFAS
Completed Work

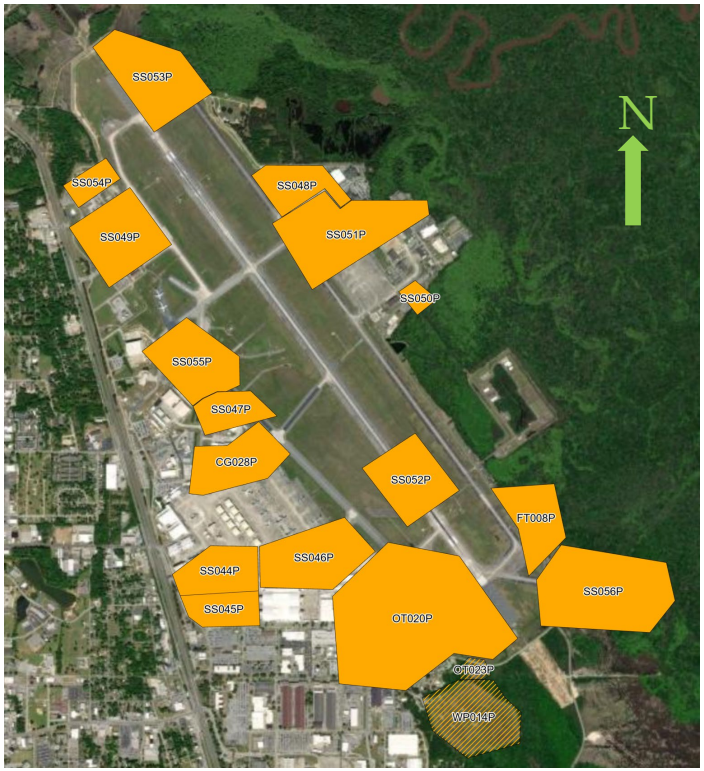
- Borings Completed
  - ≈ 633 (100%)
- Samples Collected
  - > 1,650 (soil and groundwater)
- Baseline Groundwater Sampling
  - ≈ 80 existing monitoring wells
- Surface Water and Sediment Sampling
  - 15 locations

Solid green shaded = Direct Push Technology (DPT) boring complete



Remedial Investigation of PFAS
Ongoing Work

- **Monitoring Wells Completed**
  - ≈ 177 (95%)
- **Samples Collected**
  - ≈ 350 (soil)
- **Lysimeters Installed**
  - 18 (100%)
- **NPL site (WP014) attempted but not completed due to EPA review**



Solid orange shaded = Monitoring well installation complete

Orange hatch = Monitoring well installation not completed

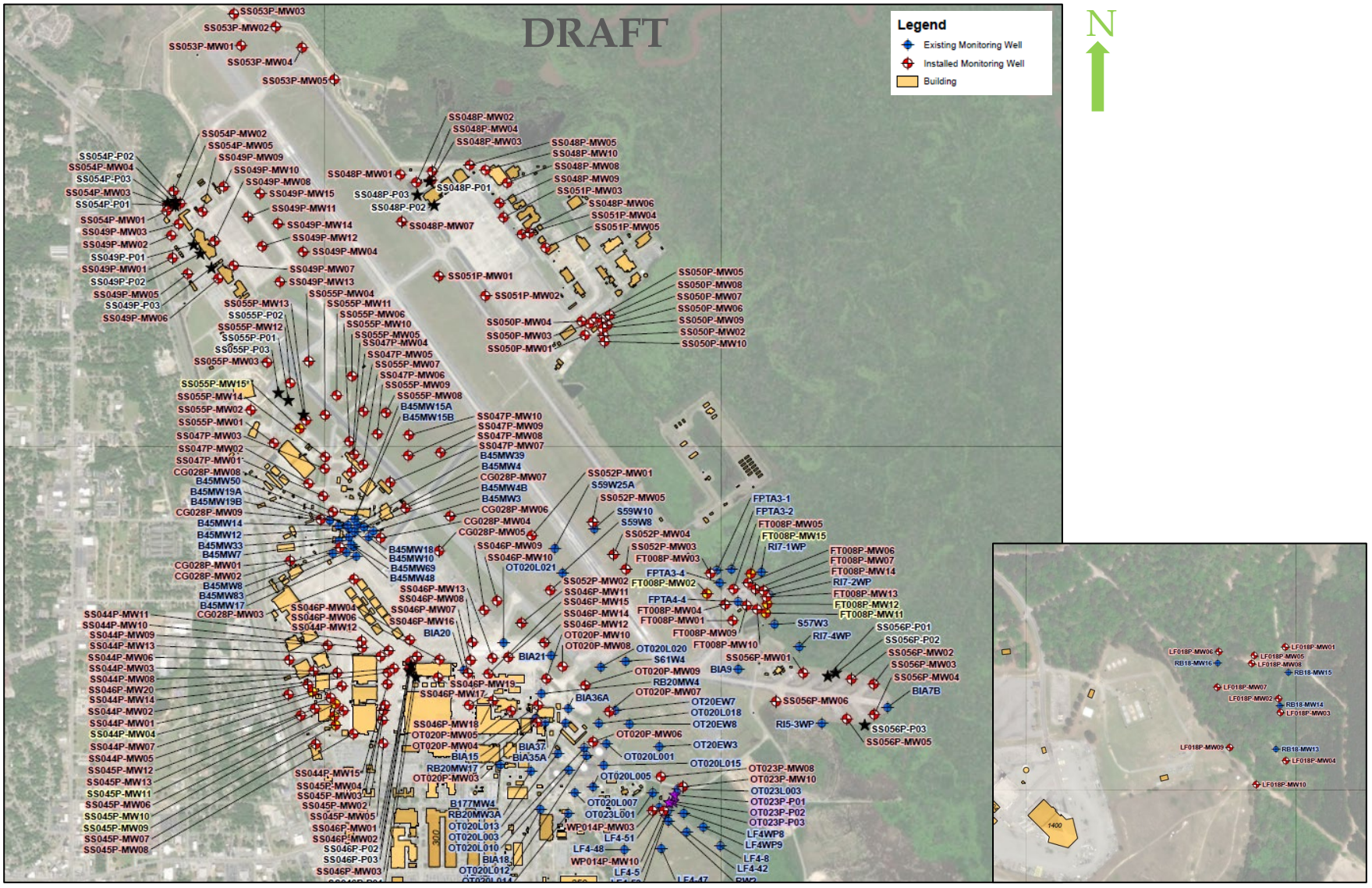
Remedial Investigation of PFAS
Ongoing Work

- Monitoring Wells Sampled
  - ≈ 225/247 (91%)
- Lysimeters Sampled
  - 13 (72%)
  - 5 did not hold vacuum
- Groundwater Samples Collected
  - ≈ 225
- Three more quarterly sampling events for lysimeters and one more bi-annual groundwater sampling of all wells (247)

Solid blue shaded = Monitoring well sampling complete

Blue outline = Monitoring well sampling not planned at this time

Overview


DRAFT
Legend
Existing Monitoring Well
Installed Monitoring Well
Building
N

Remedial Investigation of PFAS
Timeline

- Contract Award – August 2022
- Planning Documents/Review – March 2023
- Field Preparations – May 2023
- Field Work/Data Collection – September 2023 to July 2027
  - Field work started late May 2025 for monitoring well installation and additional soil sampling
  - Field work is estimated to finish by February 2027
- Report Preparation – November 2026 through August 2027

New Business
and
Program Closing

Mr. Singleton
RAB Installation Co-chair

Next RAB Meeting

Thursday, September 10, 2026

Please…

Complete meeting evaluation and feedback form and leave at your seat

Leave your name tag at sign-in table for next meeting

Thank you!