# Kirtland Air Force Base (KAFB) Bulk Fuels Facility Leak Cleanup

*RHMC Meeting*
*October 15, 2024*

**Ryan Wortman, Air Force Civil Engineer Center**

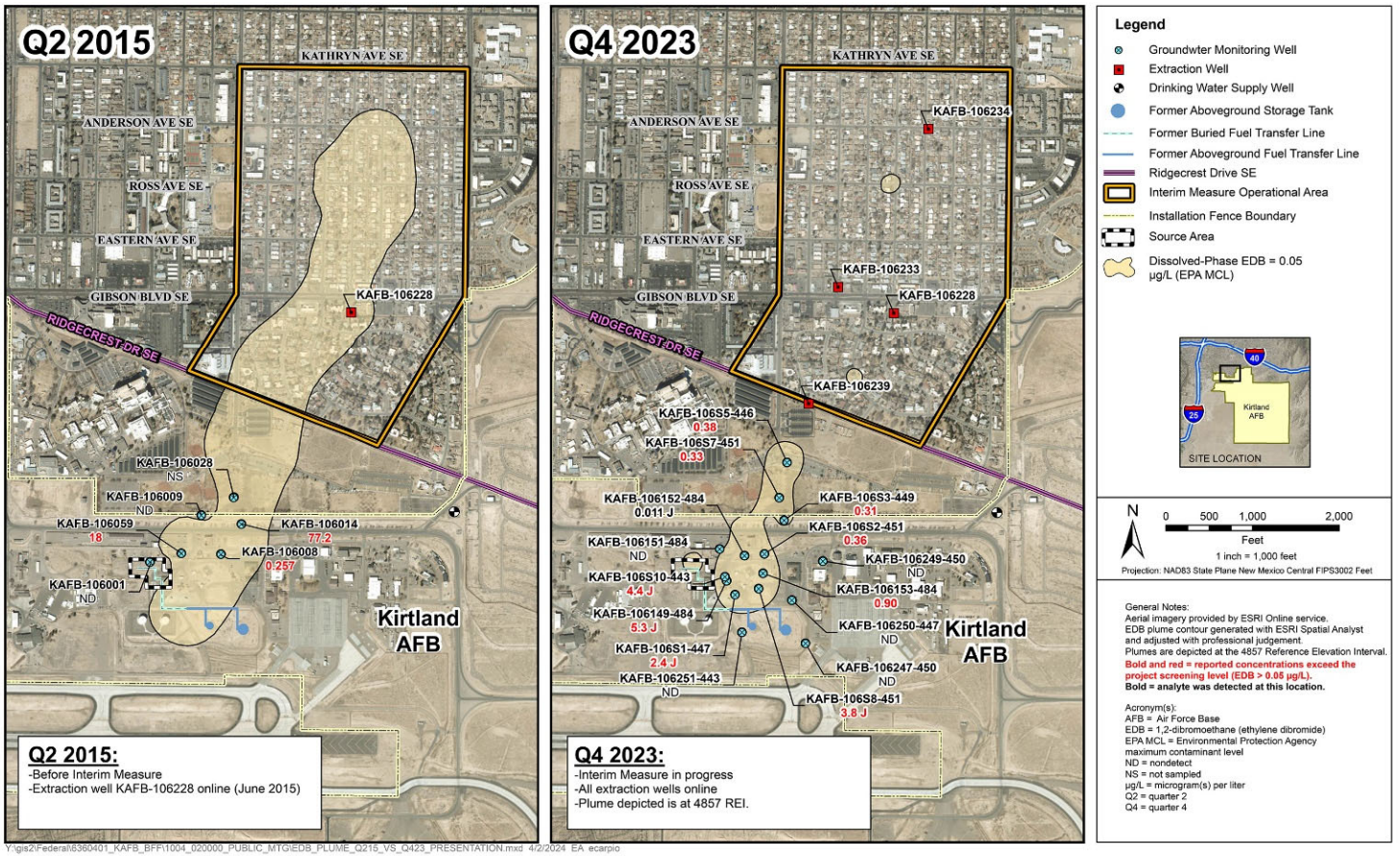
# Discussion Topics

- Ethylene Dibromide (EDB) Plume
  - 2015 vs 2023
  - Interim Measure (IM) Status
- Benzene Plume Stability
- Resource Conservation and Recovery Act (RCRA) Corrective Action Process
- Conceptual Site Model
- Path forward to Corrective Measures Evaluation (CME)

# EDB Plume – 2015 vs 2023

## EDB Plume Footprint (over time)

Comparison of Dissolved-Phase EDB in the Interim Measure Operational Area Between Q2 2015 and Q4 2023

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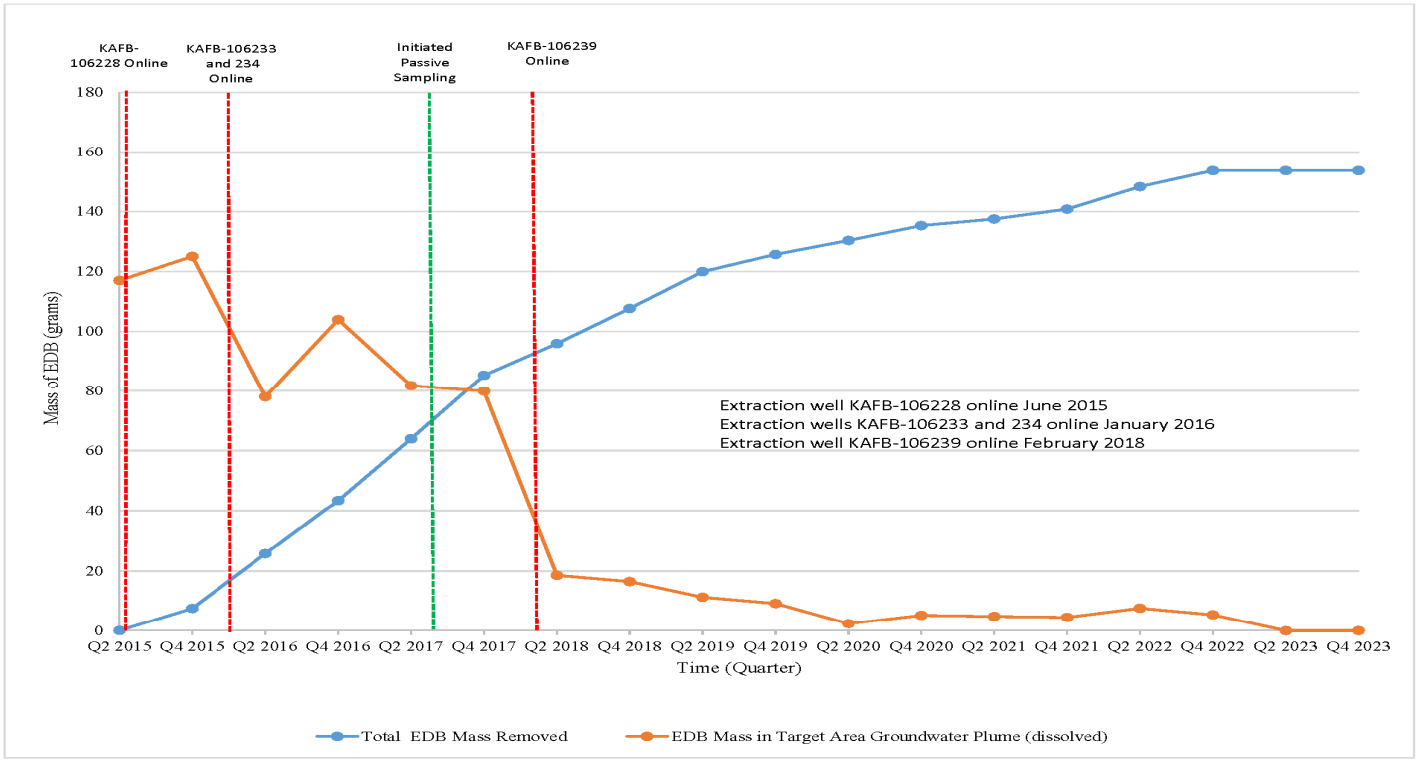
# Status Update: EDB Interim Measure

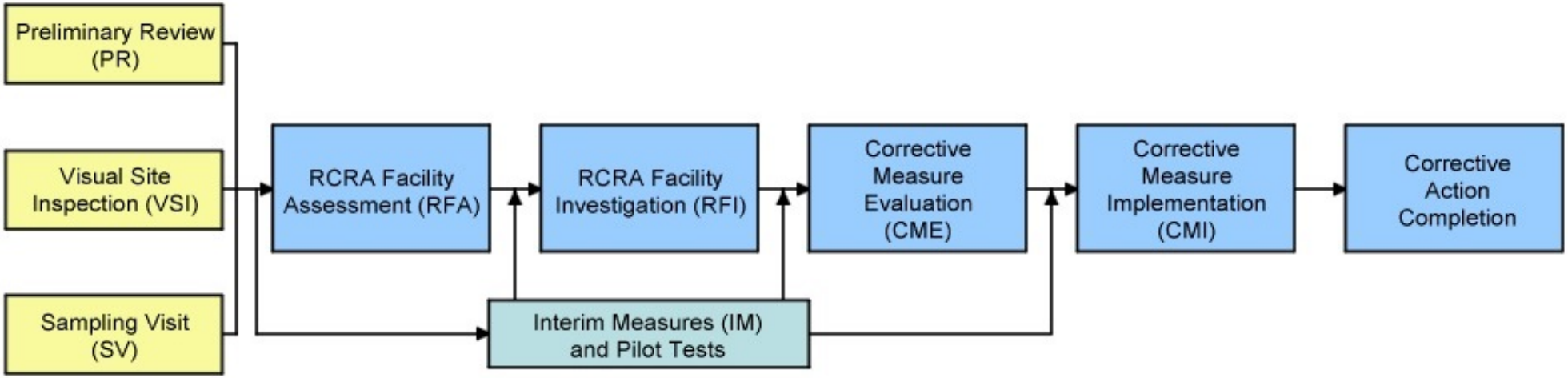
## EDB Mass in Groundwater vs. Time




Pump and treat interim measure has achieved an estimated 99.3% reduction in the interim measure operational area of the dissolved EDB mass since 2015. While EDB was detected in Q4 2023, the amount of mass was above zero but below the estimation criteria (less than 0.01 grams).

# RCRA Corrective Action Process

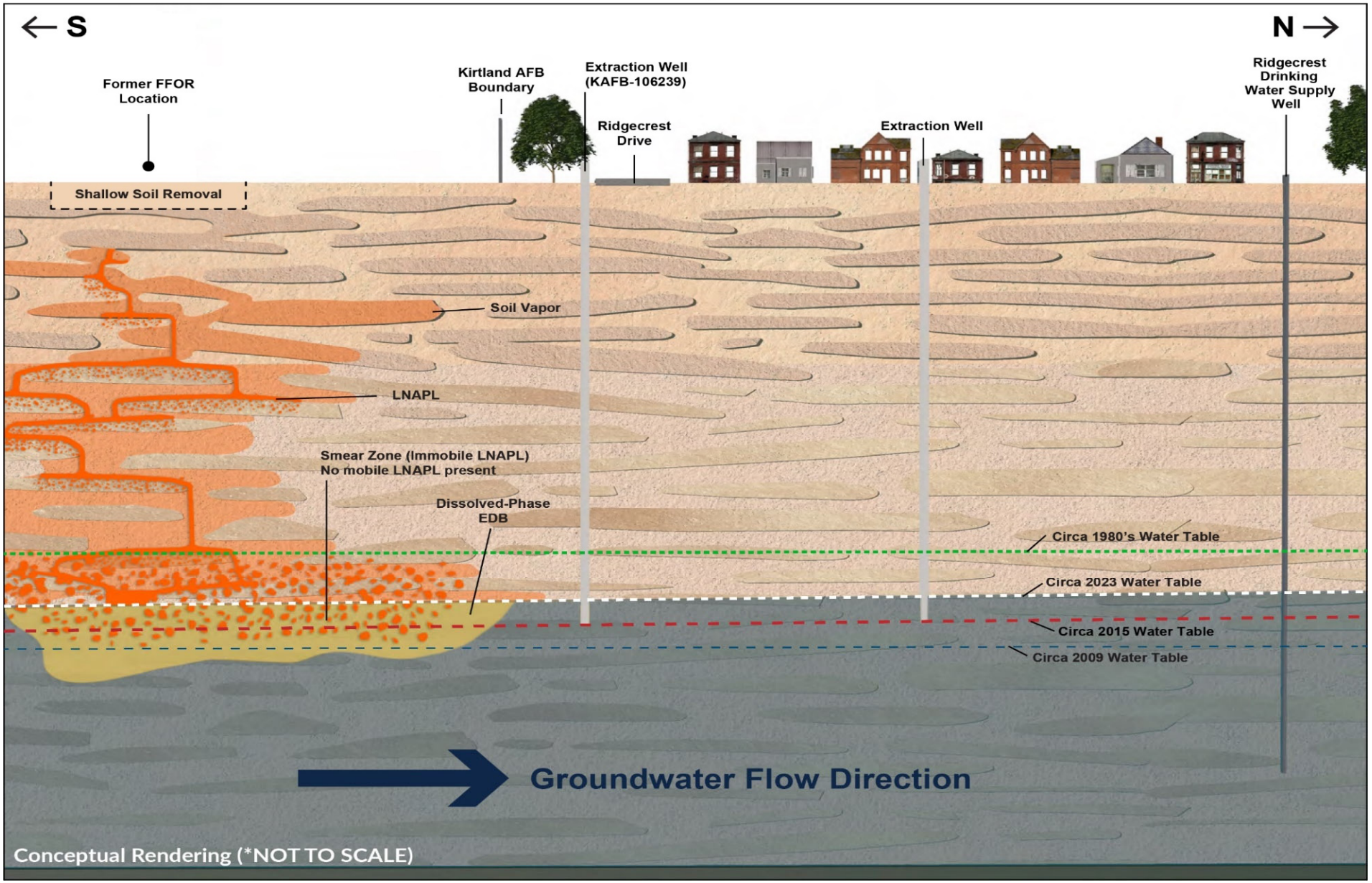
*Image adapted from California Department of Toxic Substances Control (https://dtsc-topock.com/resource-conservation-and-recovery-act)




- Pace of cleanup is driven by the iterative corrective action (CA) process in KAFB's RCRA permit
- IMs are allowed under the permit when actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants before the CME and corrective measures implementation plan.
- All activities in the RCRA CA process inform the CME: IMs, pilot studies, RCRA Facility Investigation (RFI) I and II, and ongoing monitoring results

# 2023 Conceptual Site Model

## Groundwater Conceptual Model 2023



# The Kirtland Bulk Fuels Facility Leak: A Conceptual Model

N 0 250 500 1,000 Feet

Legend

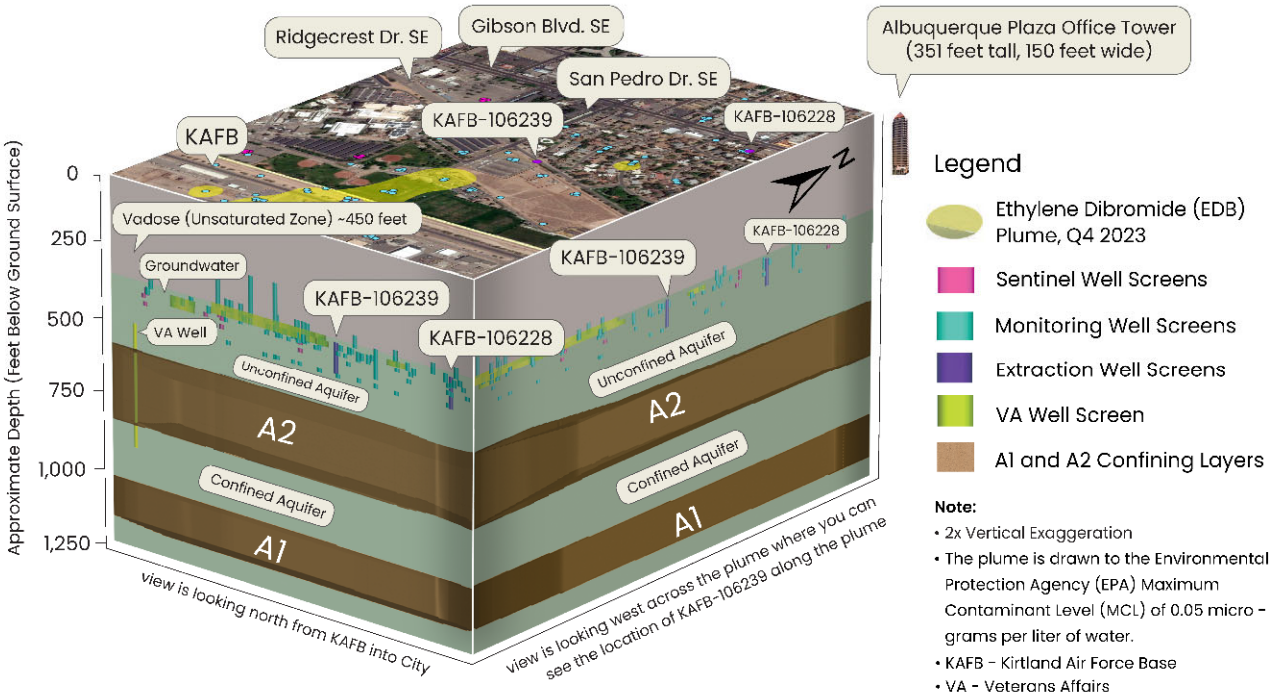
- Sentinel Wells
- Monitoring Wells
- Extraction Wells (KAFB-106239 & KAFB-106228)
- Ethylene Dibromide (EDB) Q4 2023 Plume (at reference elevation interval 4857)
- Kirtland AFB

**Note:**
- VA Well location not shown.
- The plume is drawn to the Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) of 0.05 micrograms per liter of water. Plume data from Q4 2023

## Key Elements to Monitor and Protect Our Water Supply

- VA drinking water is sampled on a monthly basis since March 2006 to present. No EDB contamination has been detected in any monthly drinking water sample. All sample results have met drinking water standards.
- Sentinel wells, installed between 2014 – 2016, are located between the plume and the VA drinking water well to provide an "early warning system." No EDB contamination has been detected in any quarterly water sample. All sample results have met drinking water standards.
- Monitoring wells between the plume and the VA drinking water well are sampled multiple times each year and are used to identify horizontal and vertical plume boundaries.
- Groundwater flow is generally to the east, away from the VA drinking water well.
- A2 and A1 are "confining layers" of soil in deep groundwater. These layers provide a natural barrier for drinking water wells that are screened below these non-permeable layers.

Note: Block diagram (below) is represented in 2x exaggeration to help show plume thickness.

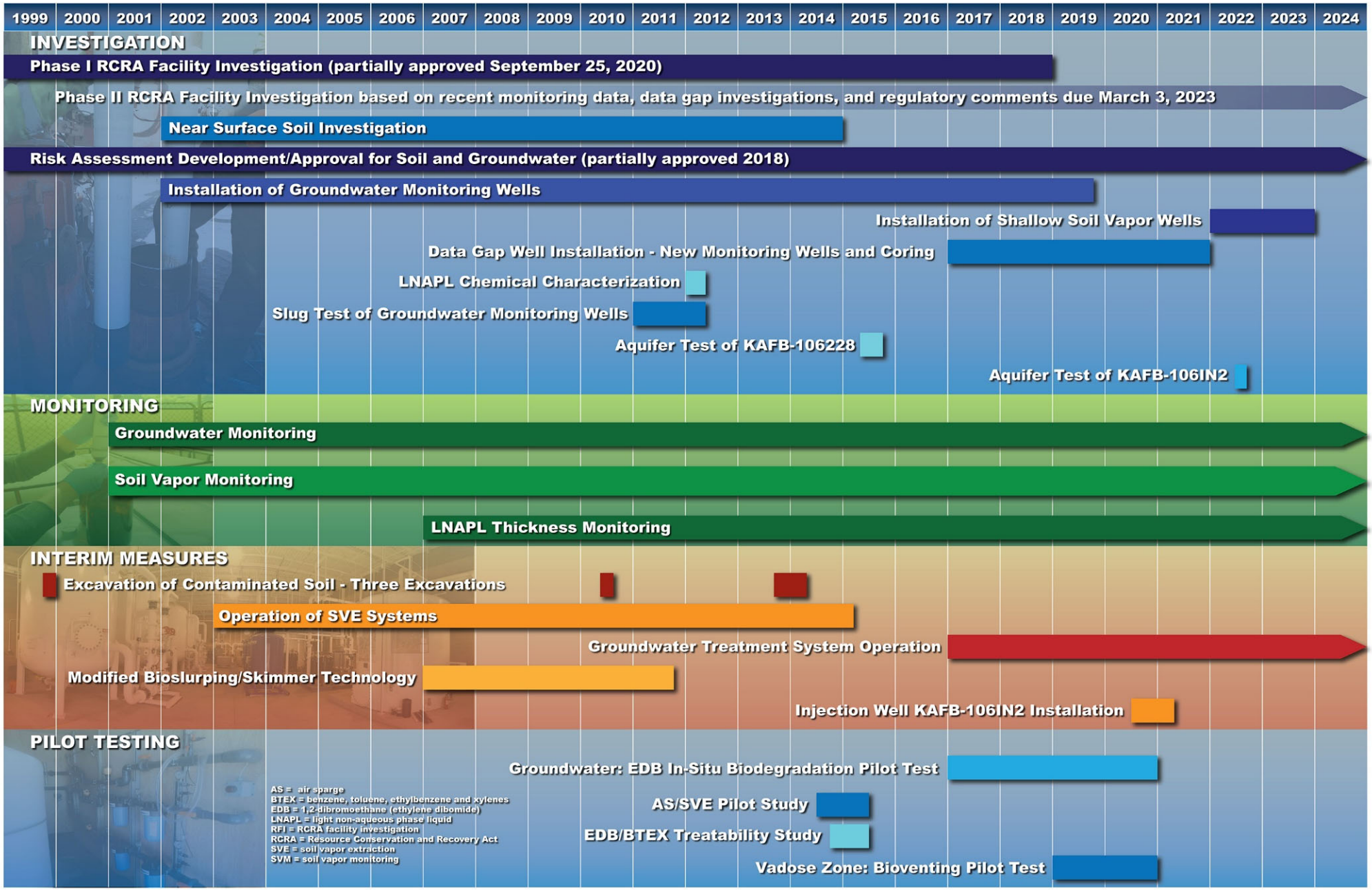



**Note:**
- 2x Vertical Exaggeration
- The plume is drawn to the Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) of 0.05 micro - grams per liter of water.
- KAFB - Kirtland Air Force Base
- VA - Veterans Affairs
- Q4 - Fourth quarter

# Path Forward to Corrective Measures Evaluation

- In project planning meeting, NMED has directed Air Force to re-focus on getting the CME by concluding the investigation phase
- Air Force will draft a Phase II RCRA Facility Investigation (RFI) and an Update to the Risk Assessment (RA)
  - Phase II RFI will focus on data collected since 2016 and data gap investigations. Report will be geared toward summarizing and concluding the investigation phase.
  - Updated RA will include the same methods as the approved 2017 RA while utilizing the additional shallow soil vapor data to strengthen the soil gas human health RA
- NMED provided input on key documents/reports to inform both Phase II RFI and Updated RA
- Moving to CME does not mean additional data will not be collected as data needs arise the Air Force will plan, program, and execute the necessary steps to address those needs

# Site Activity Timeline



# Questions?

**Point of Contact:**

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**Additional information:**

Online at https://www.kirtland.af.mil/Home/BFF/ and https://ar.afcec-cloud.af.mil/ or visit our New Information Station at the New Mexico Veterans Memorial at 1100 Louisiana Blvd SE, Albuquerque, NM

**Upcoming 2024 Public Events:**

- November 21, 2024, Public Meeting