
Meeting Date: October 21, 2020
Staff Contact: Diane Agnew, Environmental Manager

TITLE: OB-20-12 - Status Update for the Kirtland Air Force Base Bulk Fuels Facility Fuel Leak Cleanup

ACTION: Information Only

SUMMARY:

The Water Authority continues to monitor the progress of corrective action activities being conducted by the U.S. Air Force and the Air Force Civil Engineering Center (AFCEC) to address the Bulk Fuels Facility (BFF) jet fuel leak that has contaminated the aquifer near the Ridgcrest Well Field. Recent activities have included the continued operation of the pump and treat interim measure, operation of the bioventing interim measure, and continued quarterly sampling of groundwater and soil vapor.

Water Authority staff continue to review available data, work plans, and reports submitted by the Air Force to the New Mexico Environment Department (NMED) as well as NMED responses to submitted documents. The *Source Area Characterization Report* submitted in November 2019 presented the results of coring and soil sampling field activities to determine where fuel remains in the soil both on- and off-base. The Water Authority submitted technical comments to the NMED, finding several critical flaws in the field methods, data quality, and data analysis presented in the report. The NMED disapproved the report on August 17, 2020. The issues identified by the Water Authority and NMED are relevant to planned work in 2020 and would best be addressed through direct regulatory oversight of field activities.

On September 25, 2020 the NMED issued an approval with modifications of the Phase I RCRA Facility Investigation (RFI) Report. This is a milestone approval from the NMED and it directs the Air Force to submit a Phase II RFI Report where the majority of the comments in the September 25, 2020 letter are required to be addressed; the letter also references draft comments and responses that have not been provided to the stakeholders. There remain substantial data gaps at the site in both groundwater, soil vapor, and understanding the nature and extent of fuel that remains in the ground. The remaining fuel poses a continued risk to groundwater as water tables rise. Additionally, it is possible that the fuel is continuing to migrate downwards to the groundwater, posing a continued source of contamination to the drinking water aquifer. Groundwater data at the site continues to highlight the need for a groundwater monitoring well to the north; this

well has been requested by the Water Authority in formal and informal comments to the NMED and Air Force.

STAFF COMMENTS:

The issues identified with the source area characterization data are critical. The location and amount of fuel remaining in the soil remains an unknown and it is unknown how much, if any, fuel is continuing to migrate to groundwater. The fuel in the soil is a persistent source of groundwater contamination as the groundwater levels continue to rise. Additionally, inadequate characterization of the remaining source has the potential to result in an under-designed remediation system.

The Water Authority identified the need for a groundwater monitoring well to the north of the northernmost extraction well to completely understand the location of the ethylene dibromide (EDB) plume in groundwater and to provide certainty that EDB is not continuing to migrate towards the Water Authority's Ridgecrest well field. This deeper groundwater monitoring well has continued to be moved to alternate locations by either the NMED or the Air Force in work plan approvals and the data gap remains.

It is currently very difficult for stakeholders to participate in the project. Correspondence, work plans, and reports on the site are not provided to stakeholders. In December 2019, the NMED outlined a process for stakeholders to request technical working group (TWG) meetings and in June 2020 the process was followed to request a technical working group meeting to discuss source area characterization and shallow soil vapor data. Unfortunately, a TWG was not granted, but stakeholders met with the NMED for a technical meeting that did not include the Air Force. Additionally, the Air Force is out of compliance with maintenance of their online administration records and the secondary administration record maintained by the NMED Hazardous Waste Bureau is not current or complete. Stakeholders are no longer copied on correspondence, including the NMED letter approving the Phase I RFI Report, and rely on the online administration records to stay current on the project.

FISCAL IMPACT:

None

Project Update: Kirtland Air Force Base, Bulk Fuels Facility

Diane Agnew
Environmental Manager

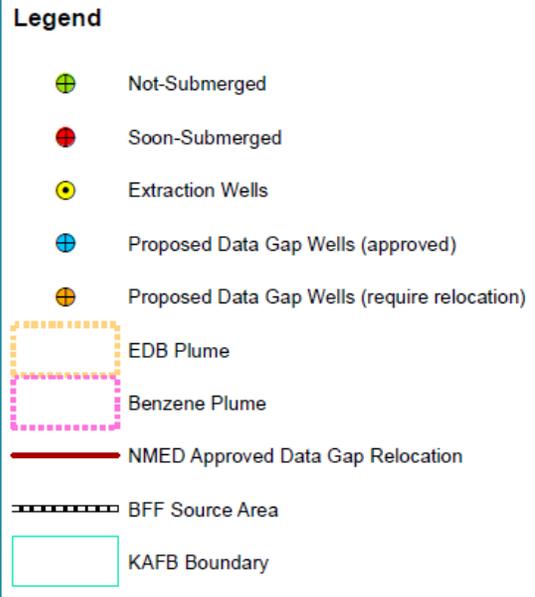
October 21, 2020



Status of Site

- Site characterization
 - NMED Approval with Modifications of Phase I RFI Report
- Ongoing remediation
 - Pump and Treat Interim Measure
 - Bioventing Pilot Test of shallow soil on base
- Site monitoring
- Risk Assessments for groundwater and soil vapor





- A total of 83 wells are used to represent the water table
- As of Q4 2019, 28 of those wells are not submerged
- Within 2 years, 21 wells will be not submerged
- Limits ability to define contamination at the water table



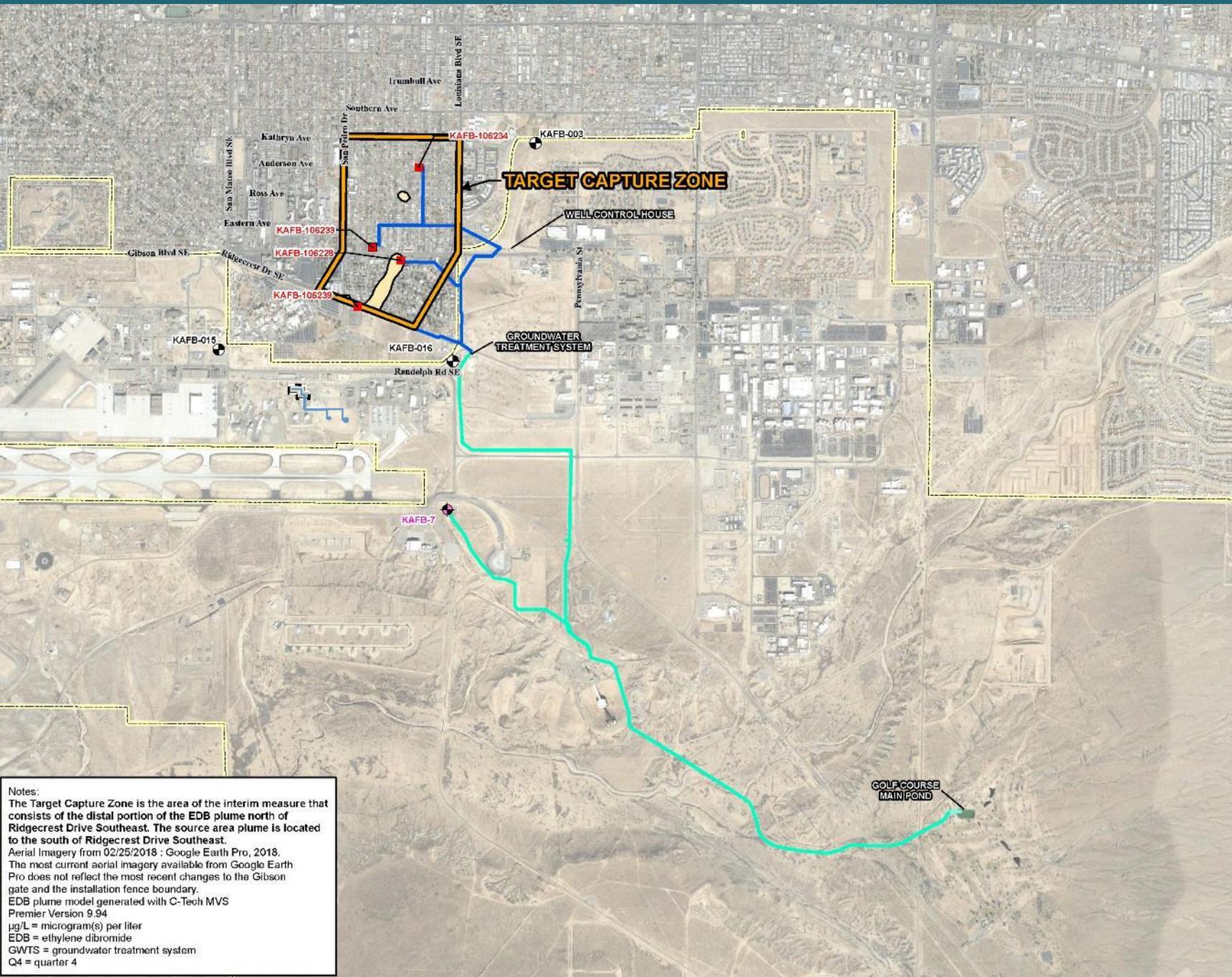
EDB Pump and Treat System

Four extraction wells installed and operational.

Treated effluent discharge locations:

- KAFB 7 injection well
- Golf Course Main Pond
- Tijeras Arroyo

New injection well will be online by end of year.



Notes:
The Target Capture Zone is the area of the interim measure that consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast. The source area plume is located to the south of Ridgecrest Drive Southeast.
Aerial Imagery from 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
EDB plume model generated with C-Tech MVS Premier Version 9.94
µg/L = microgram(s) per liter
EDB = ethylene dibromide
GWTS = groundwater treatment system
Q4 = quarter 4

Q2 2020

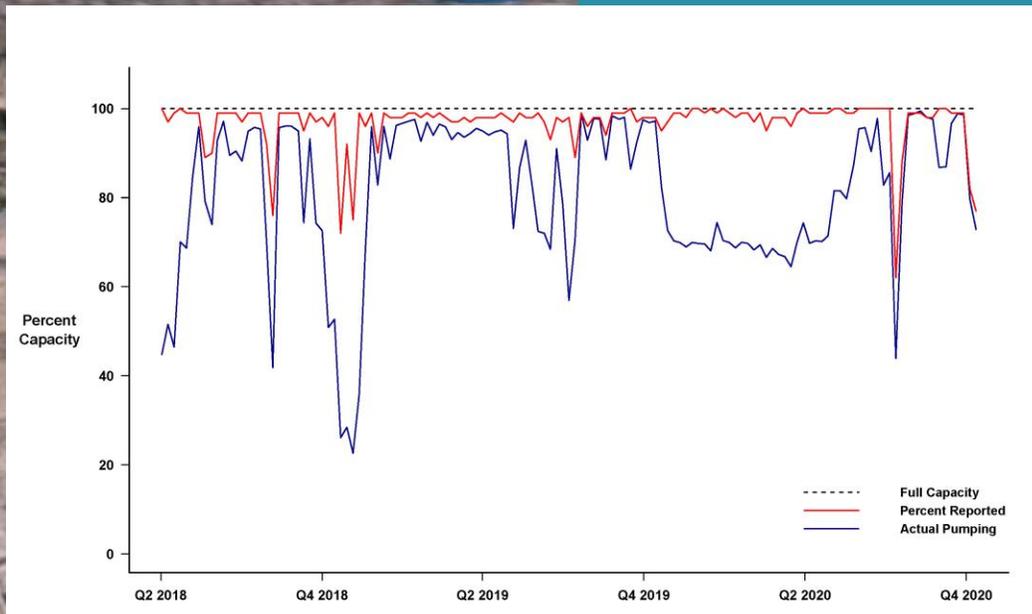
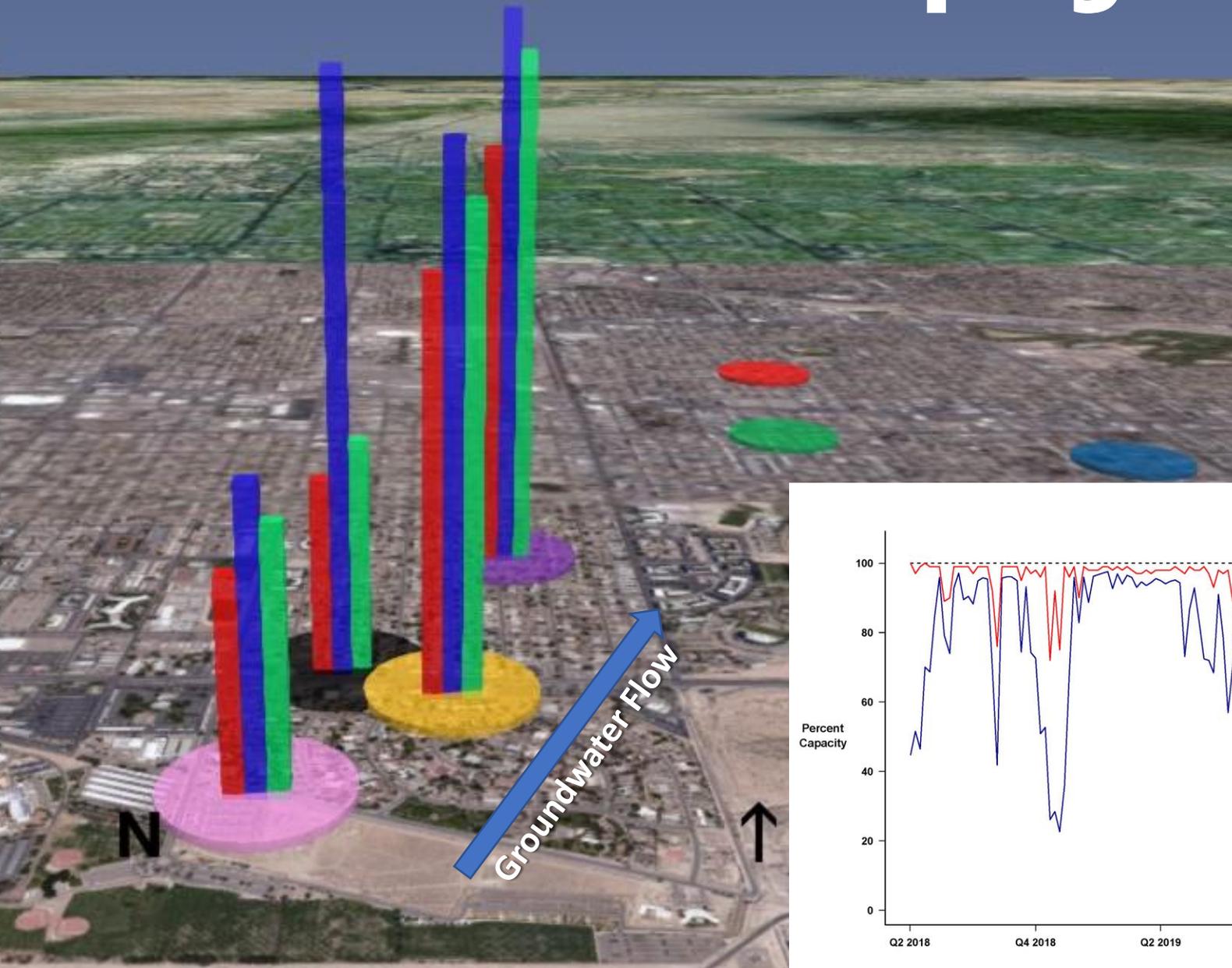
Pumping Capacity

Pumping

- Actual (Sum)
- Full Capacity (Sum)
- Reported (Sum)

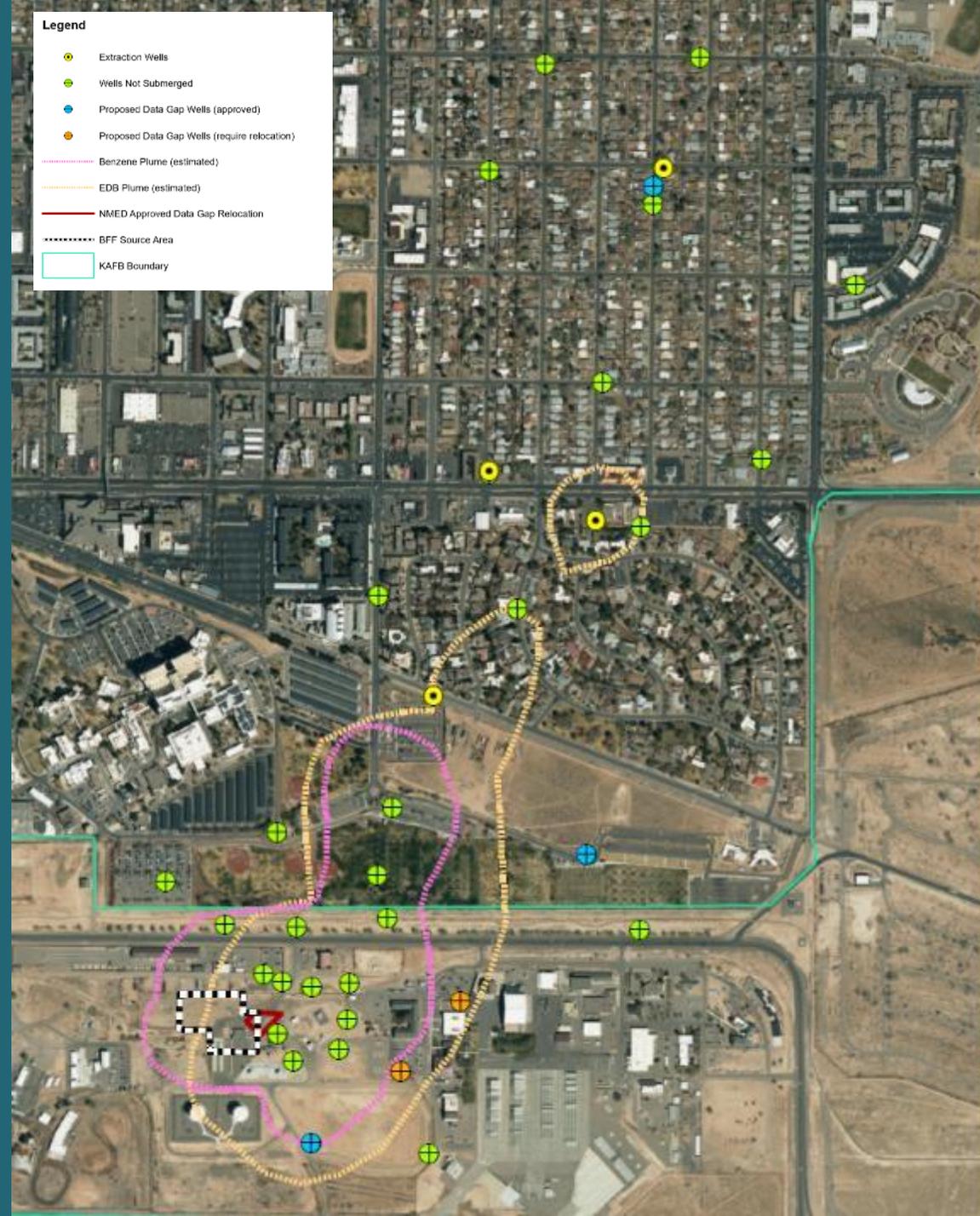
Wells

- KAFB-106228
- KAFB-106233
- KAFB-106234
- KAFB-106239
- Ridgecrest 3
- Ridgecrest 4
- Ridgecrest 5



Data Gaps

- Depth of EDB unknown at northern edge
- Extent of remaining fuel in soil off-base
 - Data quality issues and variance from work plan
 - Results inconclusive
- Shallow soil vapor nature and extent off-base
- Gap in sampling of field parameters and fuel contaminants



Data Gap Wrap-up

- Multiple lines of evidence show persistent source off-base
- Incomplete definition of remaining source
 - Continuing source of groundwater contamination
 - Potential for an under-designed remedy
- Two opportunities to address gaps
 - Site characterization (RFI)
 - Corrective Measures Evaluation



NMED Engagement

- Monthly Stakeholder Meetings
 - Agenda set by Air Force
- Technical Working Group process
- Water Authority Technical memos
- NMED no longer including stakeholders in correspondence
 - Requires daily checking of online admin record
 - Sporadically updated

Outstanding Questions

- Budget breakdown
 - Prior years ranged from \$22.5-35M
 - FY17 budget of \$4.3M, FY18 budget of \$2.5M
 - Reduction to \$1.3M in Fiscal Year (FY) 2019
 - FY20 and FY21 budgets unknown
- Depth of EDB to the north is unknown
- NMED oversight of field activities and groundwater modeling
- Timelines and deliverables
 - Goal of beginning CME in 2021 unlikely to be met





Questions?