Kirtland Air Force Base

Albuquerque Bernalillo County Water Utility Authority Board Meeting

August 21, 2013
Project Update

KAFB Bulk Fuels Spill project involves 2 Solid Waste Management Units
SWMU ST-106: Vadose Zone
SWMU SS-111: Ground Water

Interim measures to address these two SWMUs consist of the following remediation approaches:

- **Vadose Zone**: SVE applied to unsaturated zone above water table. SVE treatment expected to remediate contamination in unsaturated zone, and fuel product floating on the water table to include EDB.

- **LNAPL Remediation**: Treatment expected to remediate source area fuel product on and below water table.

- **Dissolved Phase Remediation**: Treatment specifically targeted at remaining dissolved-phase contaminants.
SVE Update

- System startup and ROI testing complete
- Full operation on March 15, 2013
- System is operational and treating hydrocarbons
- Troubleshooting, repairs, and optimization
  - April  System not performing at designed destruction rate
  - May 31  SVE system stopped operating due to a faulty LEL meter
  - June 1  LEL meter repair completed
  - August 9 Destruction rate restored

- System optimization will continue during interim operation
EDB and NAPL Plume Update

• In 1st Quarter 2013: LNAPL detected in single monitoring well (KAFB-106076)

• LNAPL and Dissolved-phase plume extent remains characterized
  • Site data indicates LNAPL plume is not migrating
  • Most likely due to biodegradation

• Remaining groundwater RFI data gaps:
  • EDB degradation rates
  • Pump Test Evaluation
  • Groundwater Model

• Groundwater RFI delivered by end of CY 2013
Shallow EDB Plume

January – March 2013

LNAPL measured in well KAFB-106076

Legend

First Quarter 2013 EDB Result (ug/L)
- 0.028 - 0.050
- 0.051 - 0.10
- 0.11 - 1.0
- 1.1 - 10
- 11 - 100
- 110 - 160
- Nondetect
- Water Supply Well
- NAPL Area
- Groundwater Level Contour (ft msl)
- First Quarter 2013 EDB Concentration Contour (ug/L)

First Quarter 2013 EDB Concentration (ug/L)
- 0.014 - 0.1
- 0.11 - 1
- 1.1 - 10
- 11 - 100
- 110 - 160
Specific Concerns

1. LNAPL Containment
2. Rising Water Table
3. LNAPL and Dissolved Phase Plume
4. Plume Stability
Rising Water Table

• Full characterization as part of the groundwater RFI will result in a comprehensive understanding of water table conditions

• The 3-pronged remediation effort (Vadose Zone, LNAPL and Dissolved-phase) will take into account water table conditions

• Groundwater levels will be accounted for when determining the interim and final remedies
The current SVE interim measure is actively remediating LNAPL at and just above the water table.

- Sufficient data has been collected to move forward with SVE expansion.
- KAFB is working with NMED to identify candidate wells for expansion of the SVE system.
- Addressing data gaps as part of the RFI will identify the appropriate interim measure to address dissolved phase EDB in groundwater.
Plume Stability

• A formal evaluation of plume stability will be performed as part of the groundwater RFI

• Until this evaluation is complete, a discussion of plume stability is premature
NMED Timeline

- Develop and Pump Test Extraction Well
  - October 2013

- Expanded SVE System
  - 1st Quarter 2014

- Design and Implement Interim Treatment of LNAPL and Dissolved Phase (EDB)
  - 2nd Quarter 2014

- Design and Implement Interim Treatment of Dissolved Phase (EDB) Treatment
  - 4th Quarter 2014