

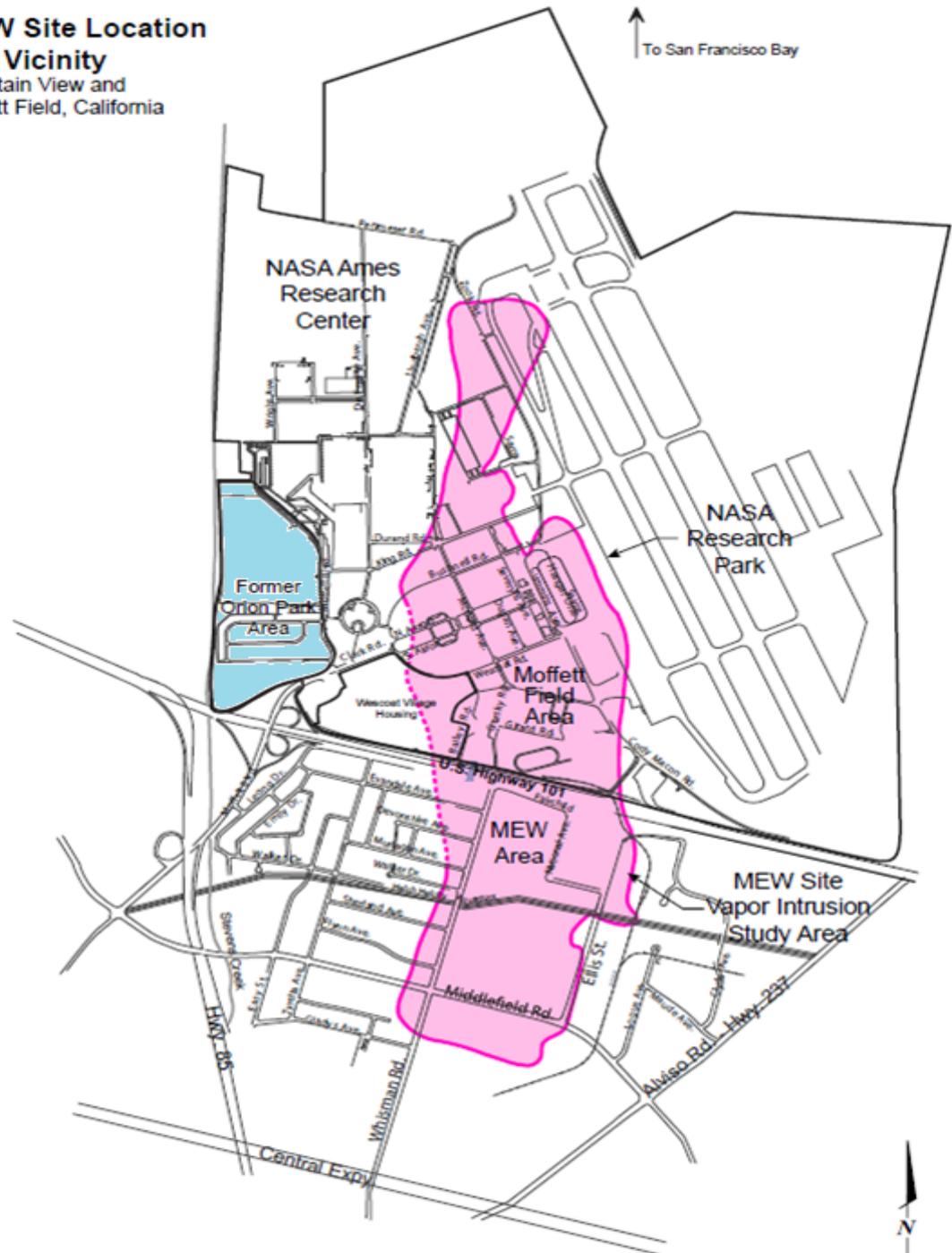
# **EPA Status Update**

**Middlefield-Ellis-Whisman (MEW)  
Superfund Study Area  
Mountain View and Moffett Field, CA**

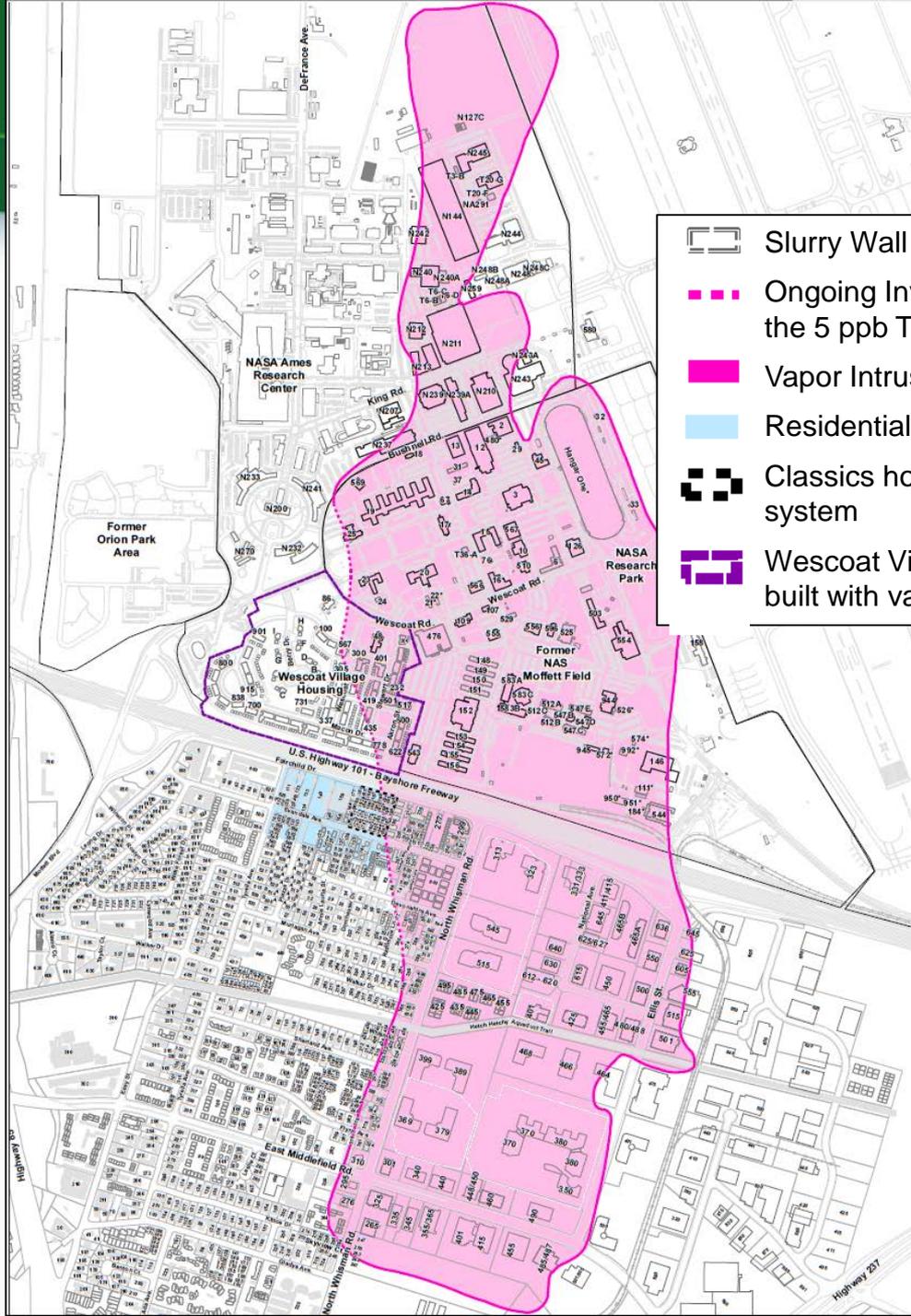
**Former NAS Moffett Field  
Restoration Advisory Board Meeting  
August 13, 2015**

# MEW Site Location and Vicinity

**MEW Site Location and Vicinity**  
Mountain View and Moffett Field, California

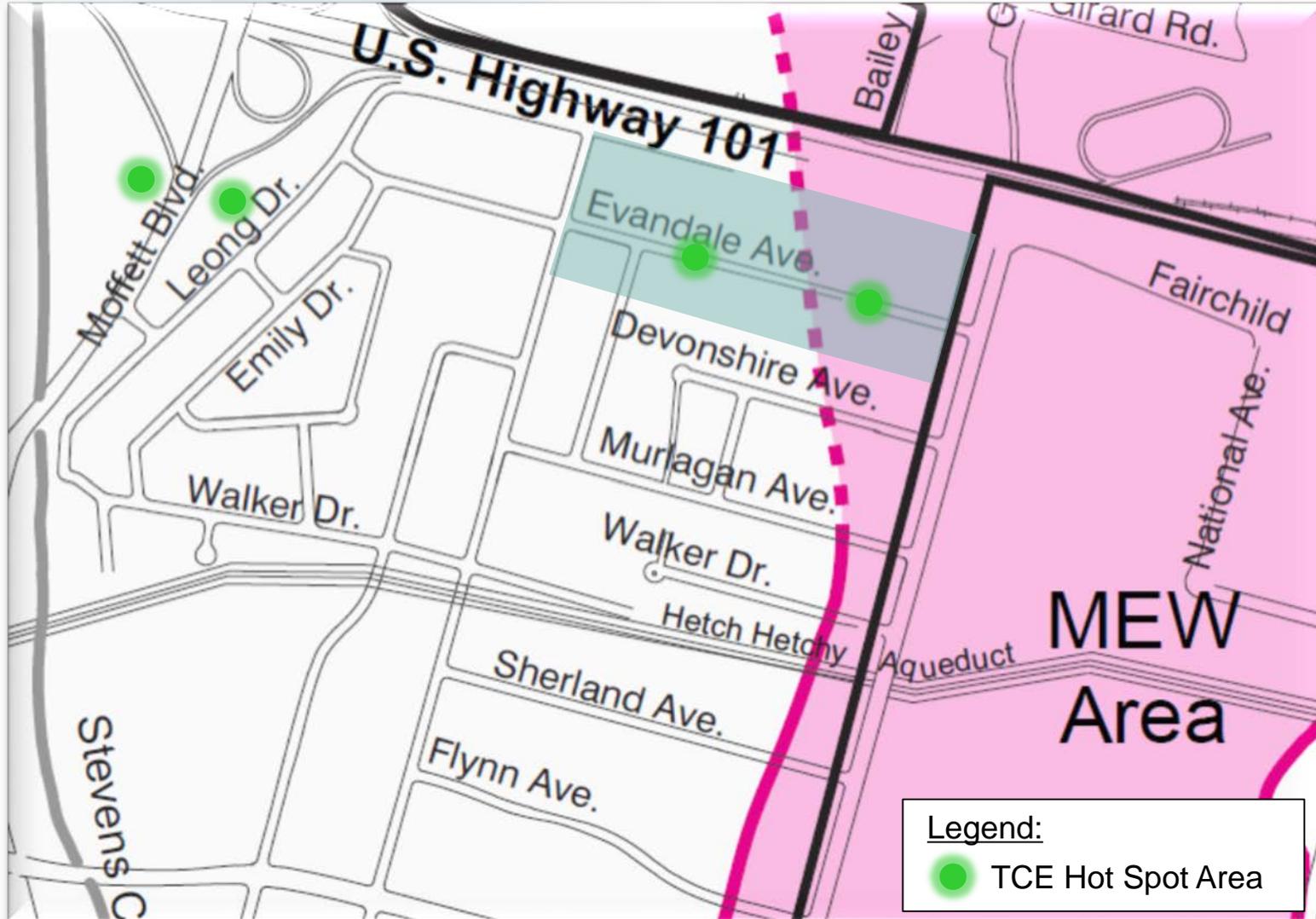


# Expanded Investigation Area

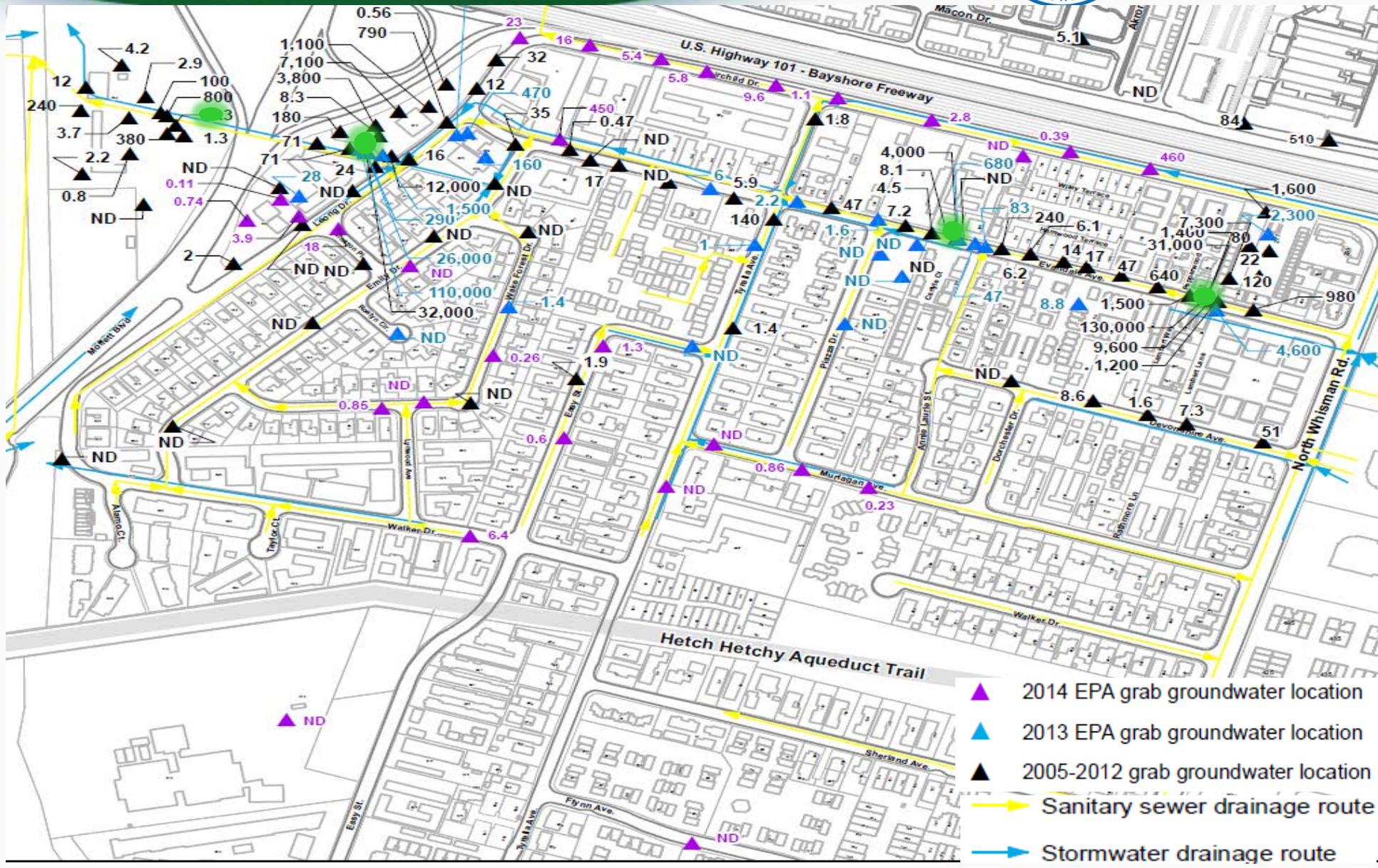


-  Slurry Wall
-  Ongoing Investigation (2013-2014) to delineate the 5 ppb TCE plume boundary
-  Vapor Intrusion Study Area (>5 ppb TCE plume)
-  Residential Indoor Air Sampling Area
-  Classics homes built with vapor intrusion control system
-  Wescoat Village Residential Area (2006 homes built with vapor intrusion control system)

# 2013 - TCE Hot Spot Areas and Residential Air Sampling Area



# TCE Shallow Groundwater Results (2005-2014)

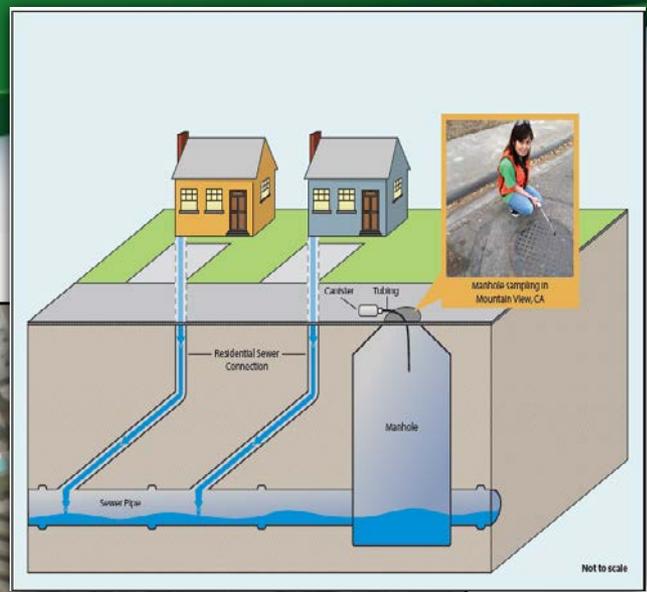


# Ongoing Work and Next Steps

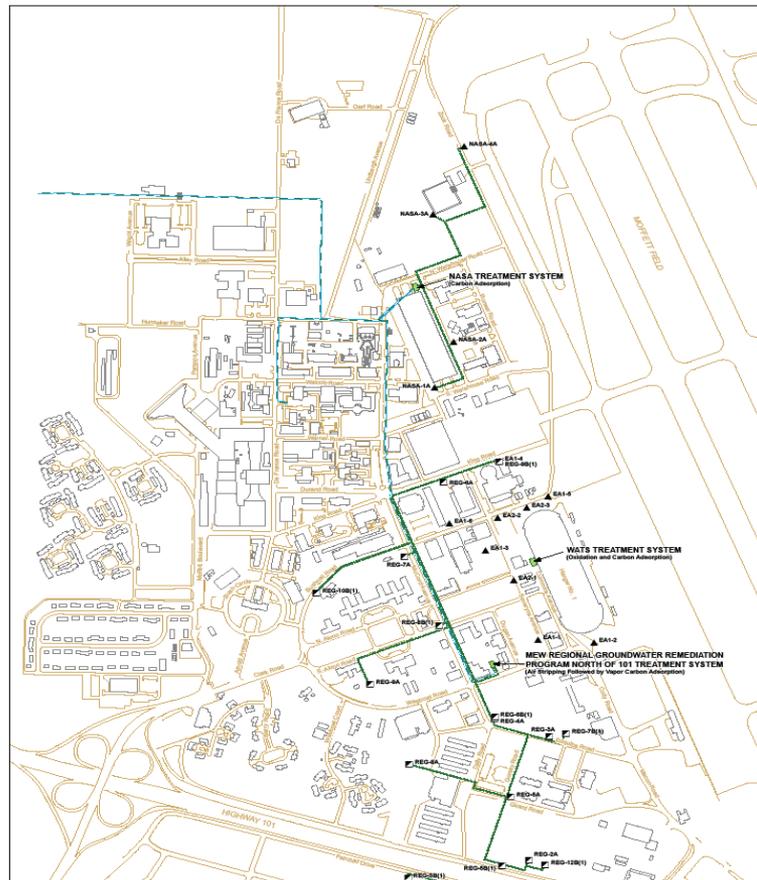


- Potential Vapor Intrusion Concerns – Air sampling area
- Source Area / Hot Spot Area – Characterization and Cleanup
- *Ongoing Potentially Responsible Party Search and Investigation*
- Determine Extent of Contamination from TCE Source Areas, Sewer Pathway Investigation
- *Data Gaps Evaluation*

# Sewer Pathway Investigation

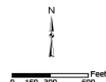


# Work Progress - Past Five Years – Groundwater Pump and Treat



**Legend**

- Regional Recovery Well
- Source Control Recovery Well
- Treatment Pipeline
- Discharge Pipeline
- Treatment Plant
- Building
- Road



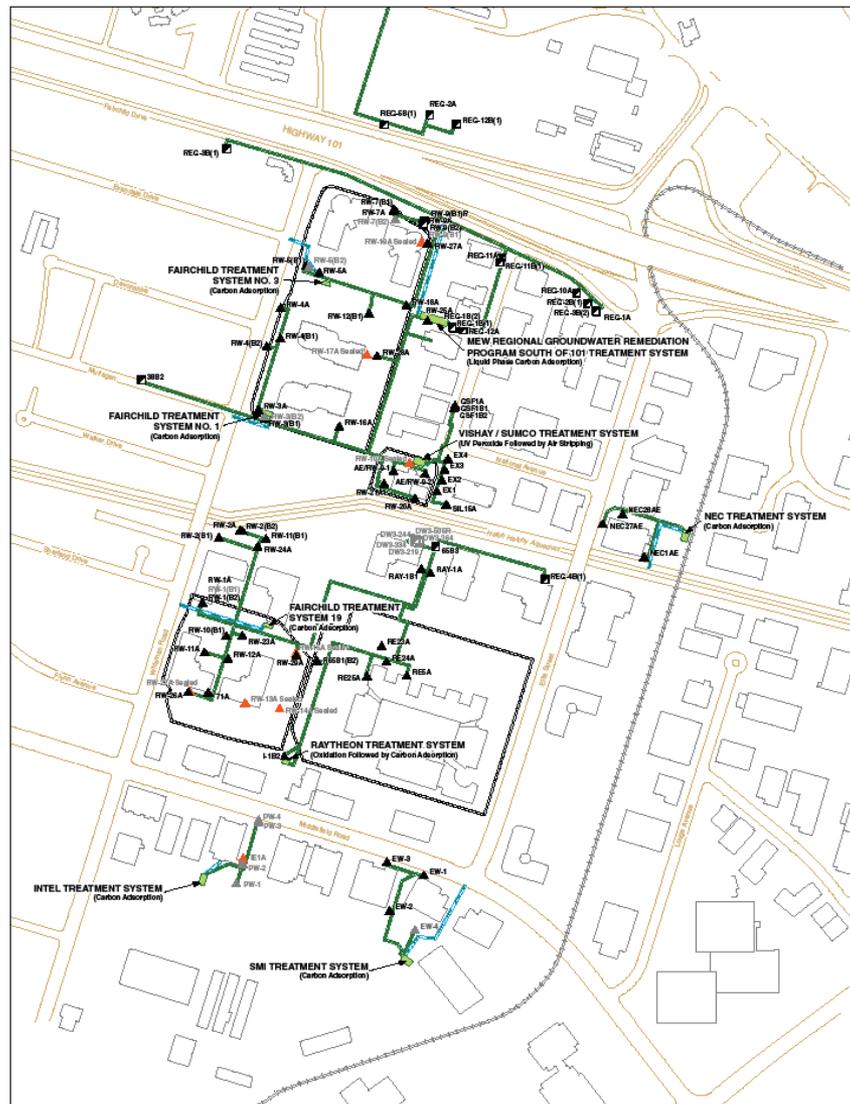
**DRAFT**



**Figure 4**  
Locations Regional and Source Control Extraction Wells and Groundwater Treatment Systems – North of U.S. Highway 101

Middlesex-Erie-Whitman (MEW) Superfund Site  
Mountain View and Moffett Field, CA

Source: Geosyntec, Response to EPA Information Request for Five-Year Review, prepared for Regional Program, May/June 2003.  
E06001113128A2\_Fig\_14\_200306040101\_01\_020411\_01



**DRAFT**

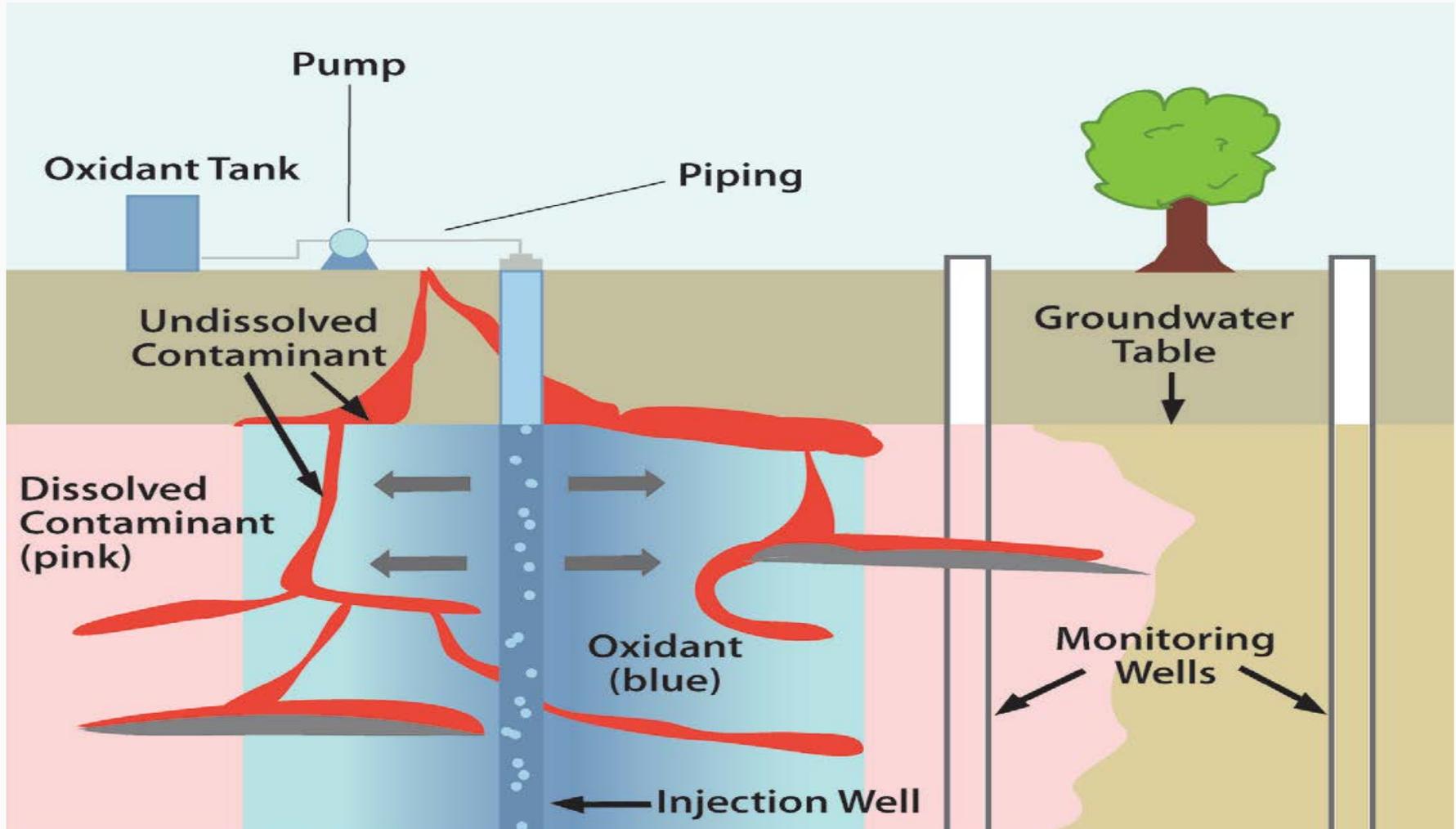


**Figure 3**  
Locations Regional and Source Control Extraction Wells and Groundwater Treatment Systems - South of U.S. Highway 101

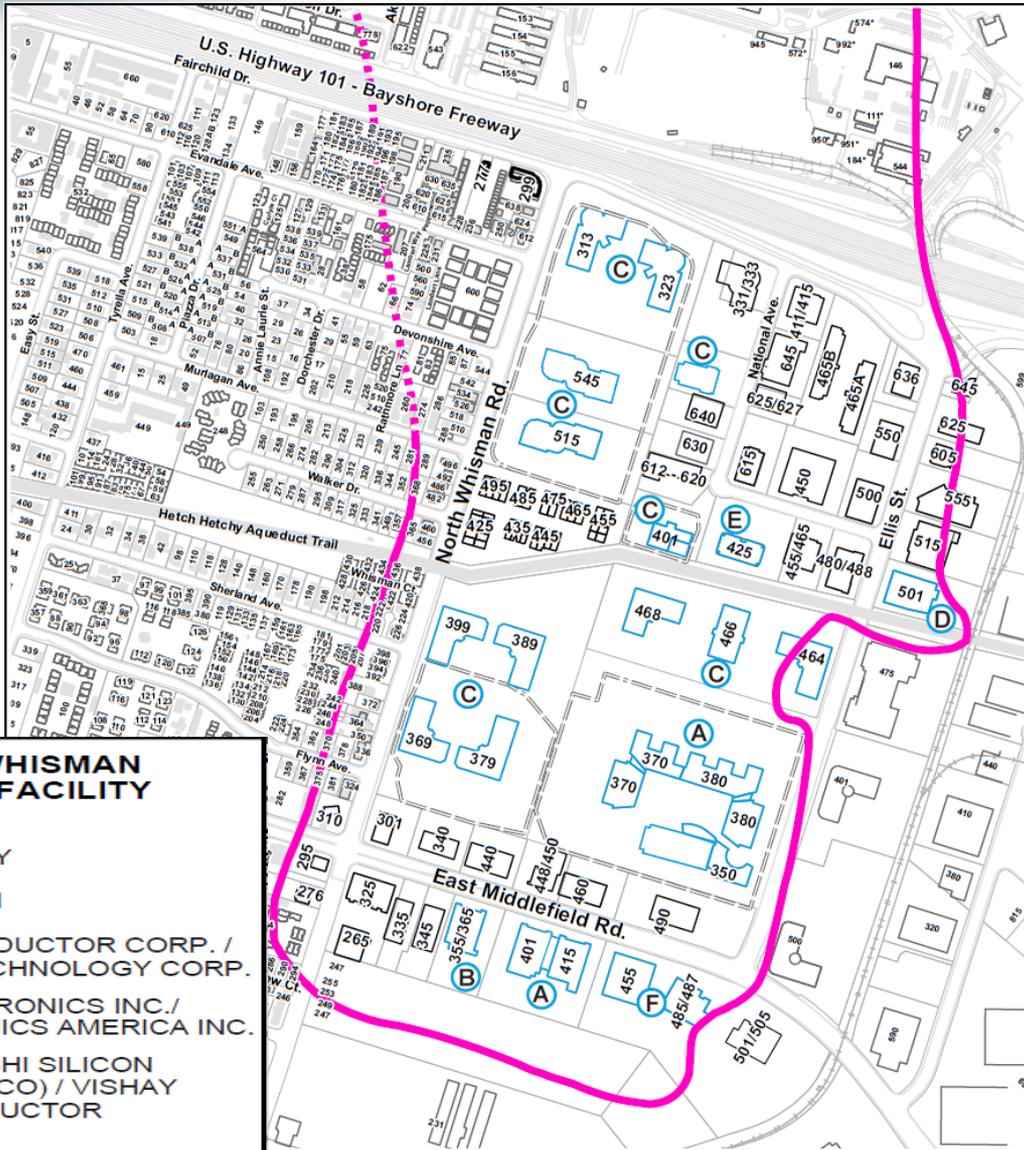
Middlefield-Elli-Watson (MEW) Superfund Site  
Mountain View and Moffett Field, CA

Source: Geosyntec, Response to EPA Information Request for Five-Year Review, prepared for Regional Program, May-June 2009.  
6506261113102640\_Pg\_1-4\_Rev09m0626111\_062311\_06

# Work Progress - Past Five Years: Optimization



# Pilot Test Communication Plan



- MIDDLEFIELD ELLIS WHISMAN (MEW) FORMER MEW FACILITY LOCATIONS**
- (A)** RAYTHEON COMPANY
  - (B)** INTEL CORPORATION
  - (C)** FAIRCHILD SEMICONDUCTOR CORP. / SCHLUMBERGER TECHNOLOGY CORP.
  - (D)** FORMER NEC ELECTRONICS INC./ RENESAS ELECTRONICS AMERICA INC.
  - (E)** SUMITOMO MITSUBISHI SILICON CORPORATION (SUMCO) / VISHAY GENERAL SEMICONDUCTOR
  - (F)** SMI HOLDING LLC



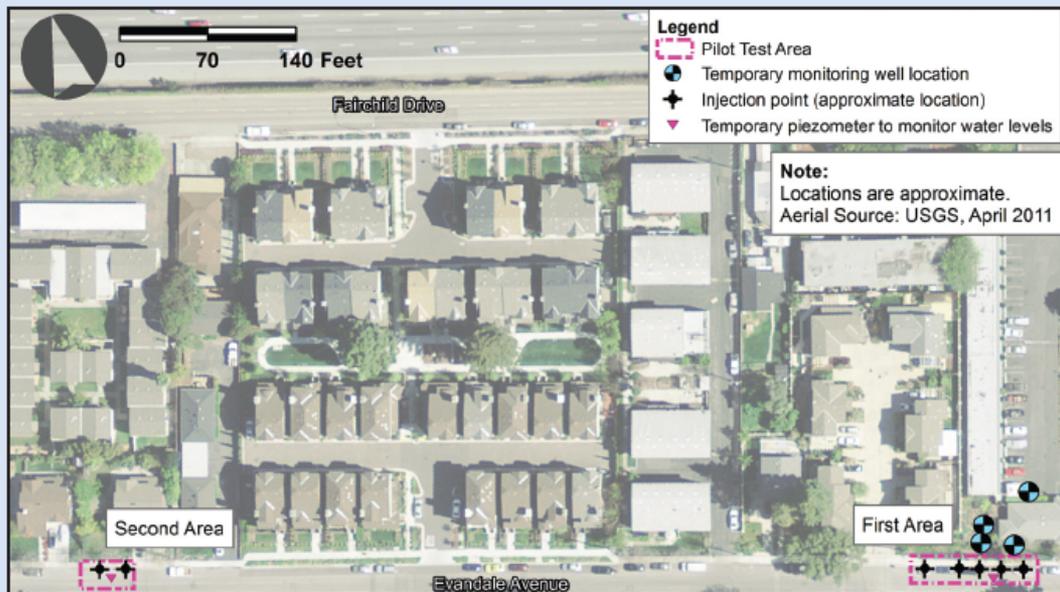
# Middlefield-Ellis-Whisman (MEW) Study Area

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • August 2014

*Mountain View, California*

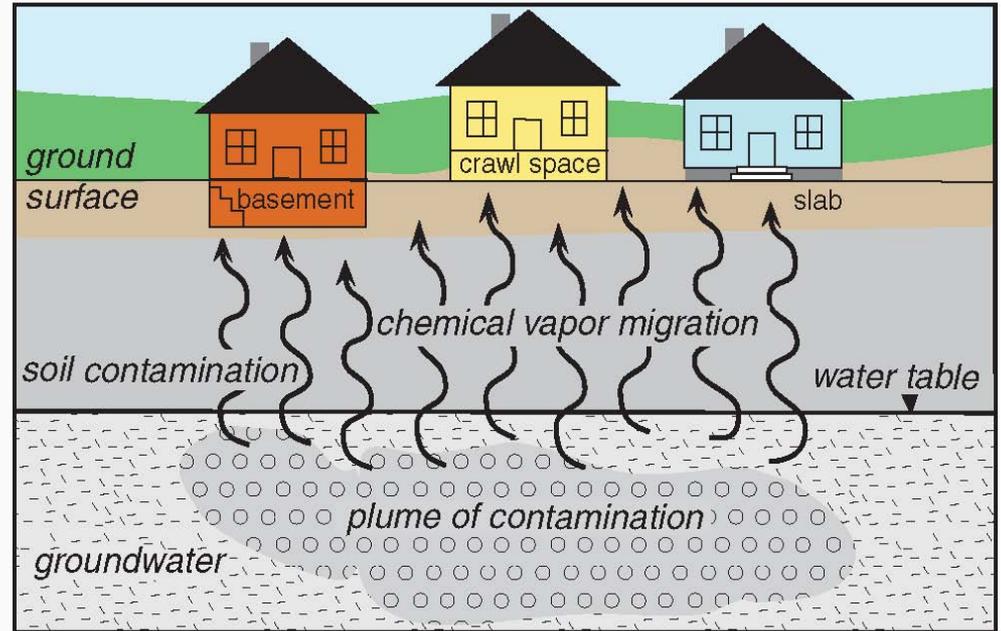
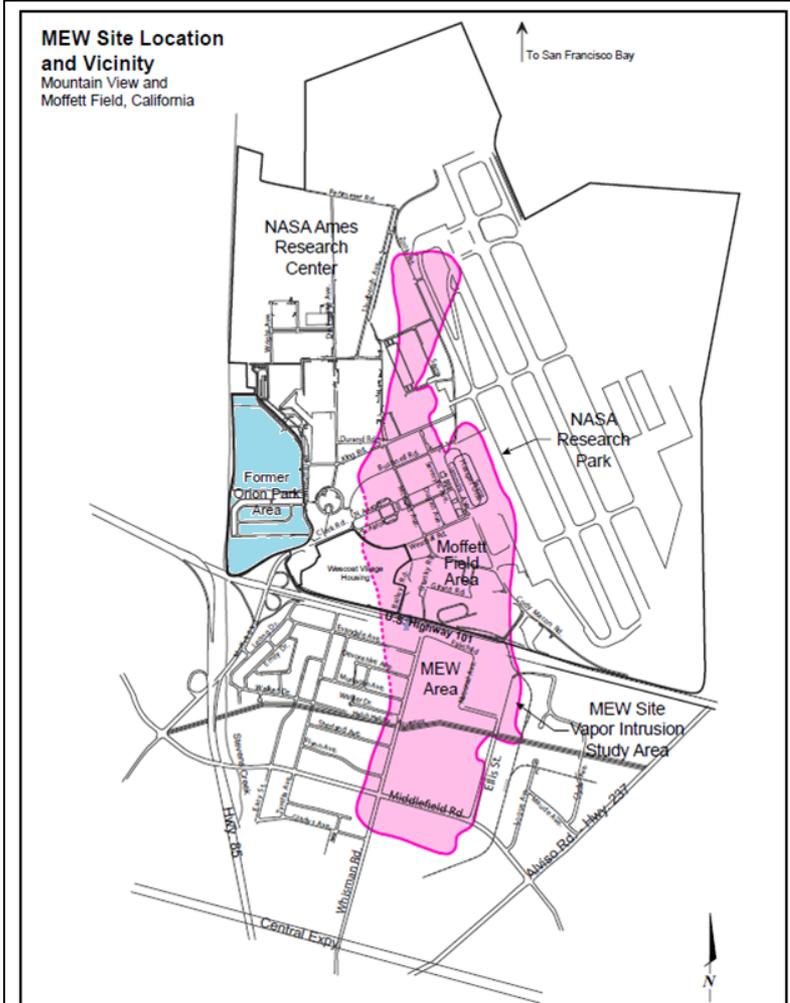
## Field Work Notice for Pilot Test

In February and April 2014, pilot tests using the chemical oxidant sodium permanganate were shown to be effective at significantly reducing a trichloroethene (TCE) groundwater hot spot area (see: "First Area" in Figure 1) located along Evandale Avenue. As a result, additional permanganate injections are scheduled for the weeks of August 11 and August 18. This work will include a final permanganate injection at the "First Area" location, and begin permanganate injection at a



**Figure 1:** Pilot test location

# Work Progress - Vapor Intrusion Pathway



# MEW/Moffett Field Vapor Intrusion Study Area



- Generally defined by the area where TCE concentrations in shallow groundwater are greater than 5 micrograms per liter ( $\mu\text{g/L}$ ), or parts per billion (ppb).
- In 2010, EPA selected a vapor intrusion remedy for the MEW Site, which applies to all existing and future residential and commercial buildings, within the MEW Vapor Intrusion Study Area.
- EPA has set TCE indoor air cleanup levels that are protective of both short-term and long-term health concerns.

# 2010 ROD Amendment Vapor Intrusion RAO



Focused Feasibility Study Conceptual Framework to address the Vapor Intrusion Remedial Action Objective in 2010 ROD Amendment:

*“To accelerate the reduction of the source of vapor intrusion (i.e., Site contaminants in shallow groundwater and soil gas) to levels that are protective of current and future building occupants, such that the need for a vapor intrusion remedy would be minimized or no longer be necessary.”*



## Selected Issues & Recommendations

### **Issue:**

Declining efficiency and effectiveness of existing groundwater remedy will not achieve groundwater cleanup levels and will not meet the vapor intrusion remedial action objective to accelerate the reduction of the source of vapor intrusion (i.e., Site contaminants in shallow groundwater and soil gas) to levels that are protective of current and future building occupants, such that the need for a vapor intrusion remedy would be minimized or no longer be necessary for many decades.

### **Recommendation:**

Enhance groundwater contaminant plume capture and groundwater cleanup efforts by implementing facility-specific and regional program optimization plans. Evaluate and implement pilot tests and treatability studies of alternative groundwater cleanup technologies to expedite contaminant mass removal and cleanup timeframe and reduce VOC concentrations in different representative source and Regional Plume areas. [Complete Feasibility Study to evaluate remedial alternatives that can effectively meet the RAO for the vapor intrusion remedy.](#)

# Focused and Targeted Areas to be Addressed in the FFS



- Focused remediation in Target Zones (e.g., facility-specific source areas, high TCE shallow groundwater, and high TCE soil gas concentration areas).
- Targeted remediation - TCE in “Shallow Zone” (shallow soil/soil gas - vadose zone and shallow groundwater where there is high potential vapor intrusion risk).
- Address access and infrastructure concerns – characterize properties and target high concentrations in “Shallow Zone” during redevelopment, extended vacancies.

# Ongoing and Upcoming Work



- EPA Investigation is Ongoing
- EPA Meetings with Work Parties, Stakeholders, Community
- EPA will continue to update the community on the planned work and our findings.

# EPA Contact Information



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**EPA Websites –**

**For More Information**

[www.epa.gov/region9/mew](http://www.epa.gov/region9/mew)

[www.epa.gov/region9/moffettfield](http://www.epa.gov/region9/moffettfield)

[www.epa.gov/oswer/vaporintrusion](http://www.epa.gov/oswer/vaporintrusion)