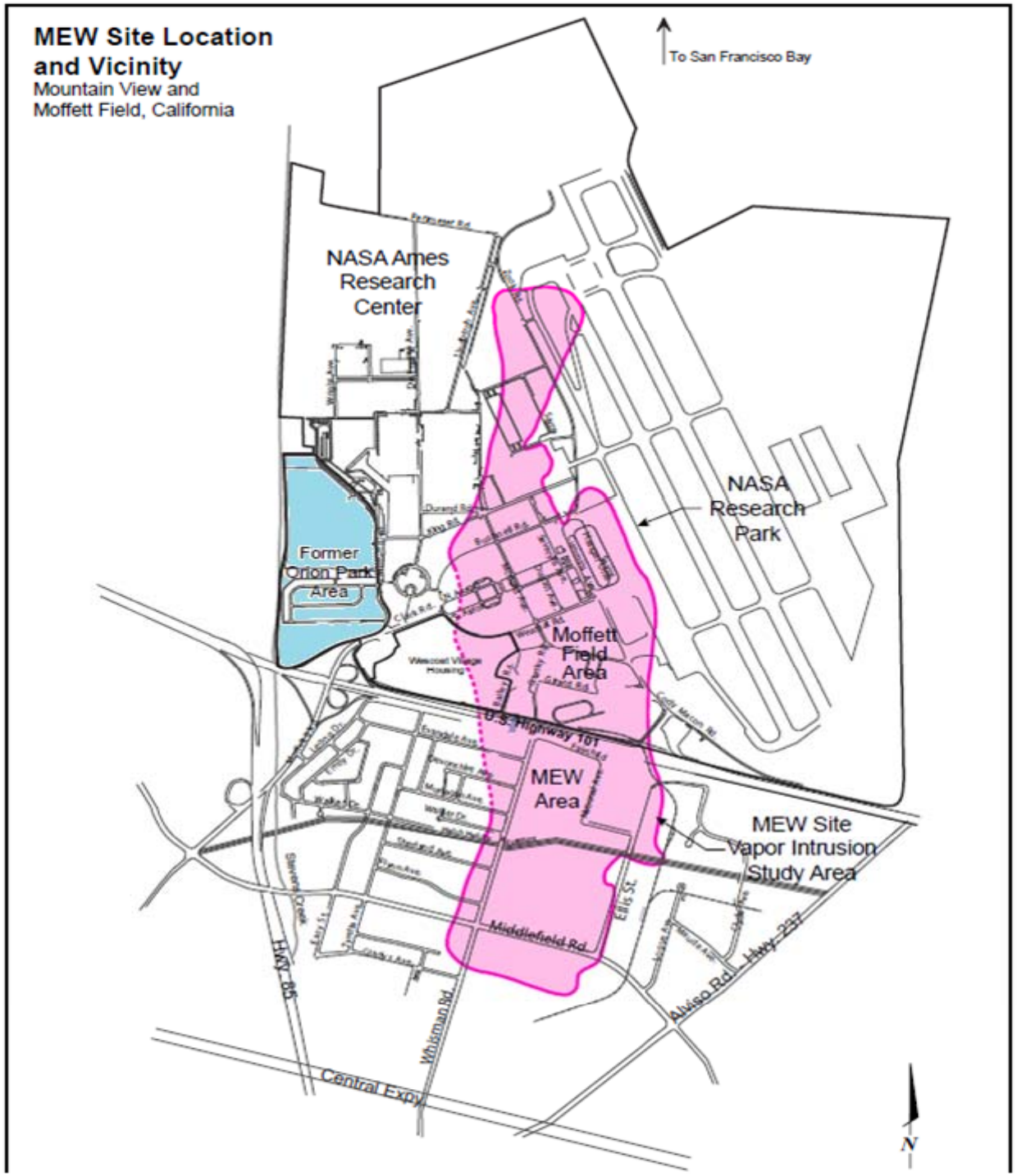
EPA Potential Source Investigation and TCE Update

Area South of Highway 101

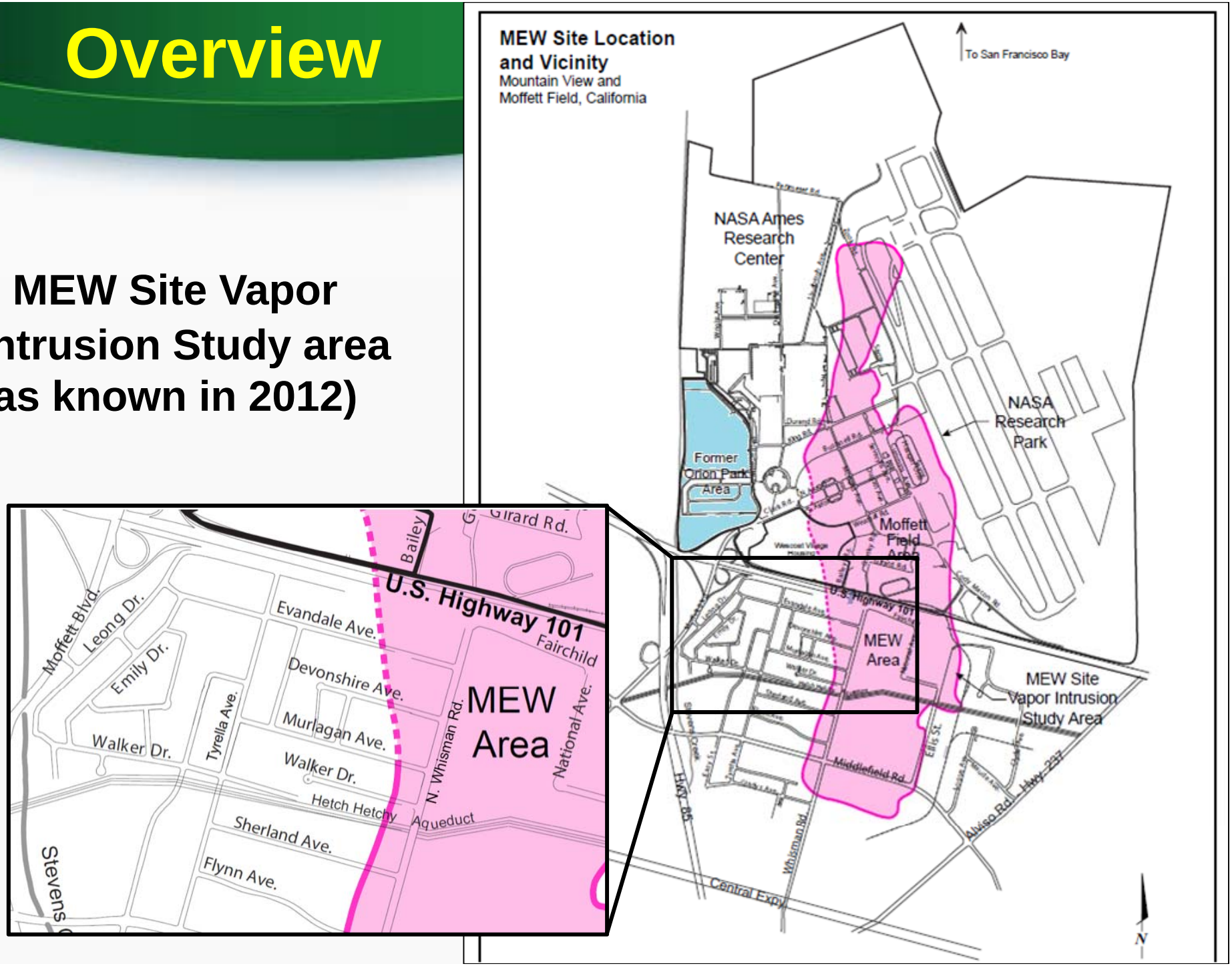
MEW/Moffett
Community Advisory Board Meeting

December 11, 2013

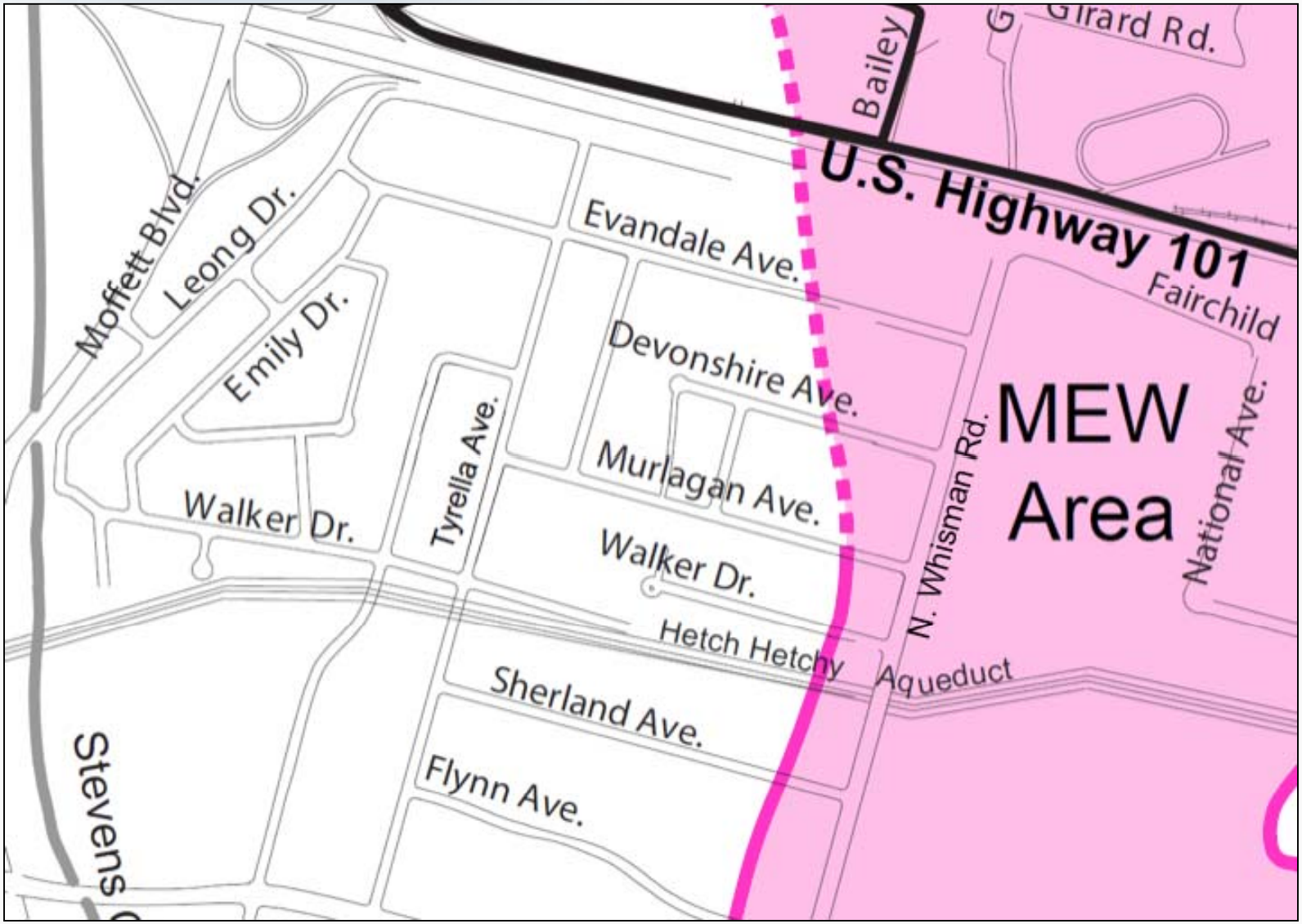

MEW Site Location
and Vicinity
Mountain View and
Moffett Field, California
To San Francisco Bay
NASA Ames
Research
Center
NASA
Research
Park
Former
Orion Park
Area
Moffett
Field
Area
U.S. Highway 101
MEW
Area
MEW Site
Vapor Intrusion
Study Area
Middlefield Rd.
Ellis St.
Alviso Rd.
Hwy 237
Hwy 85
Whisman Rd.
Central Expy.
N

Overview

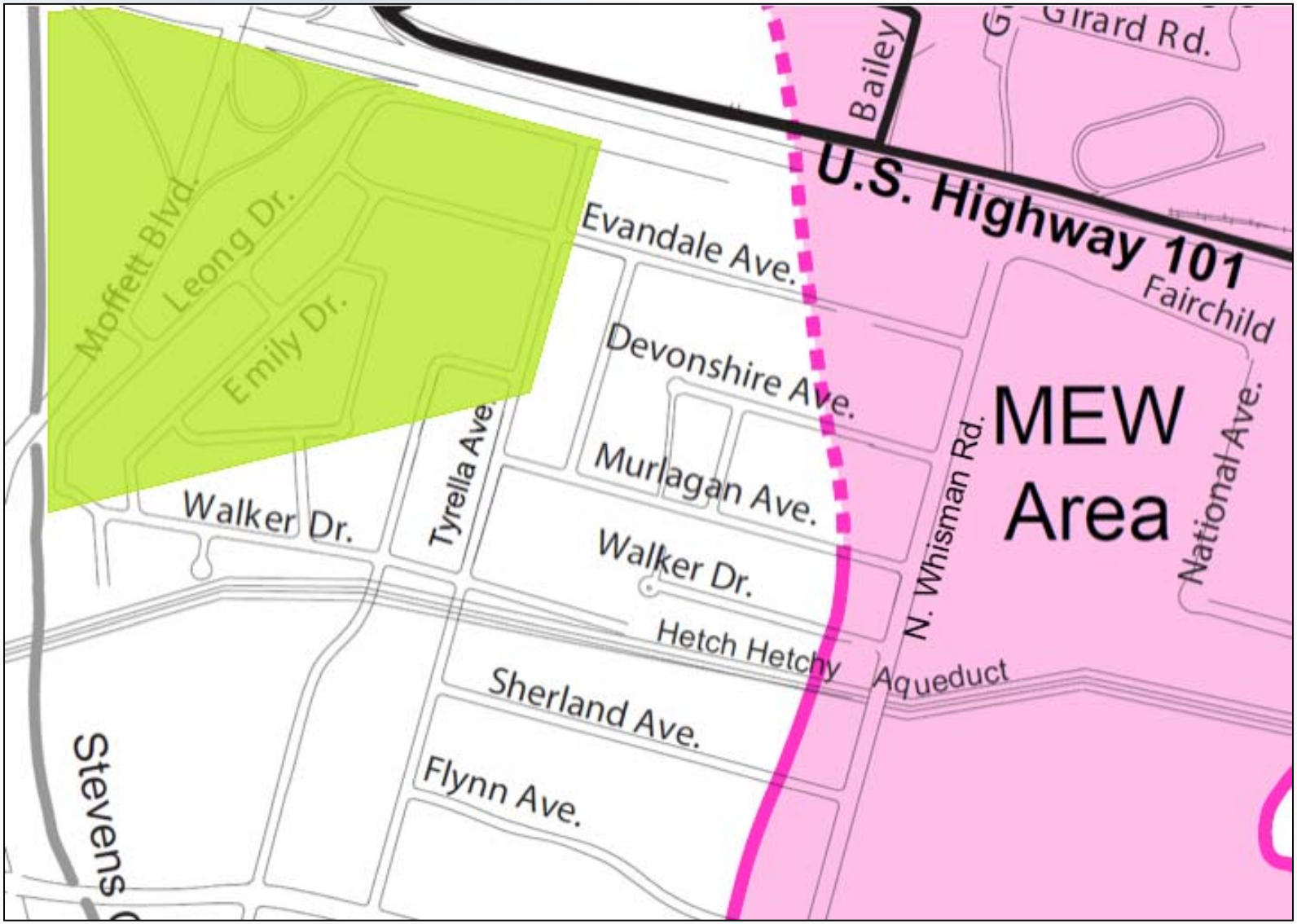
- **MEW Site Vapor Intrusion Study area (as known in 2012)**



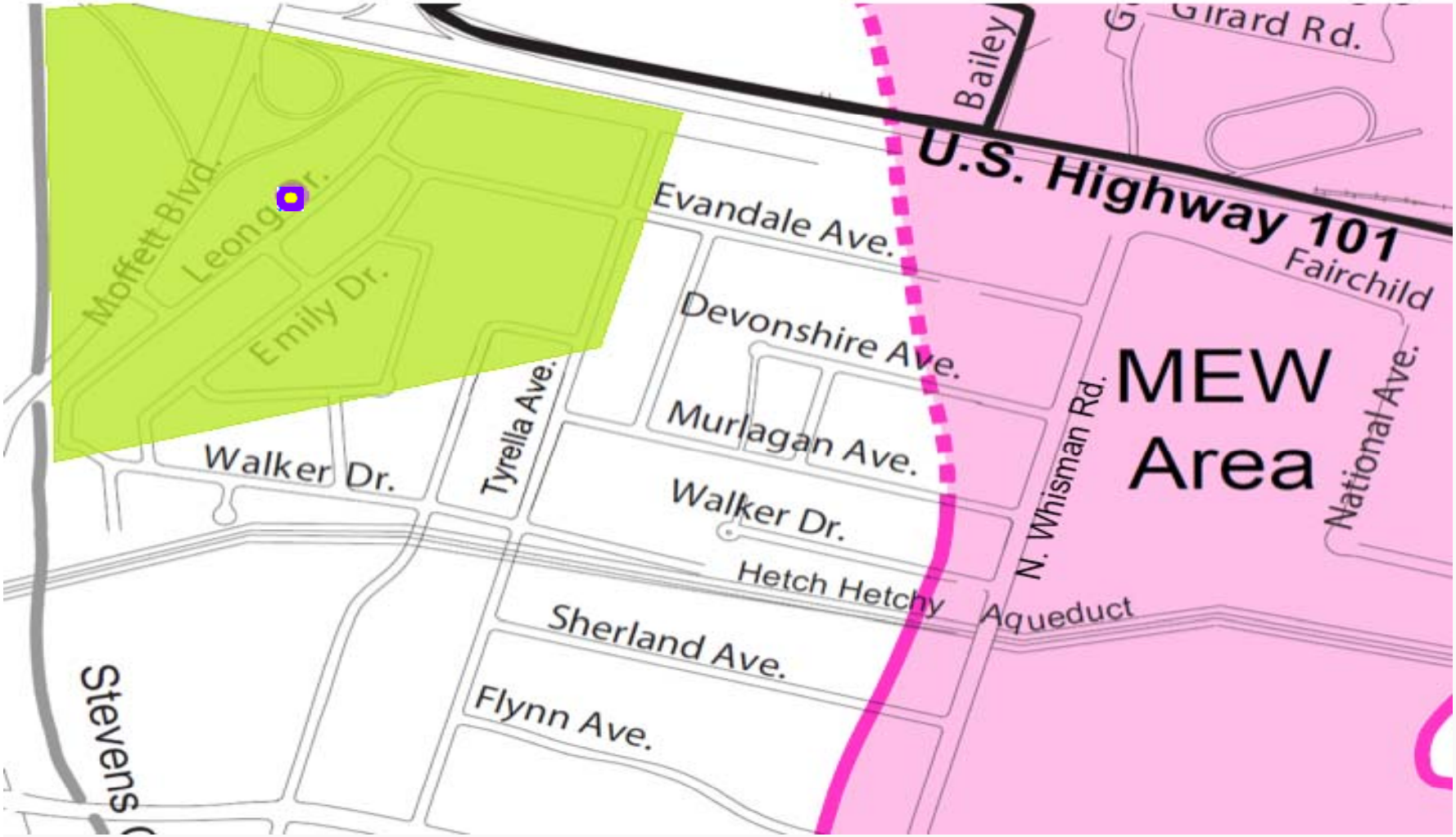
EPA Area of Interest



EPA 2005 Groundwater Investigation Area

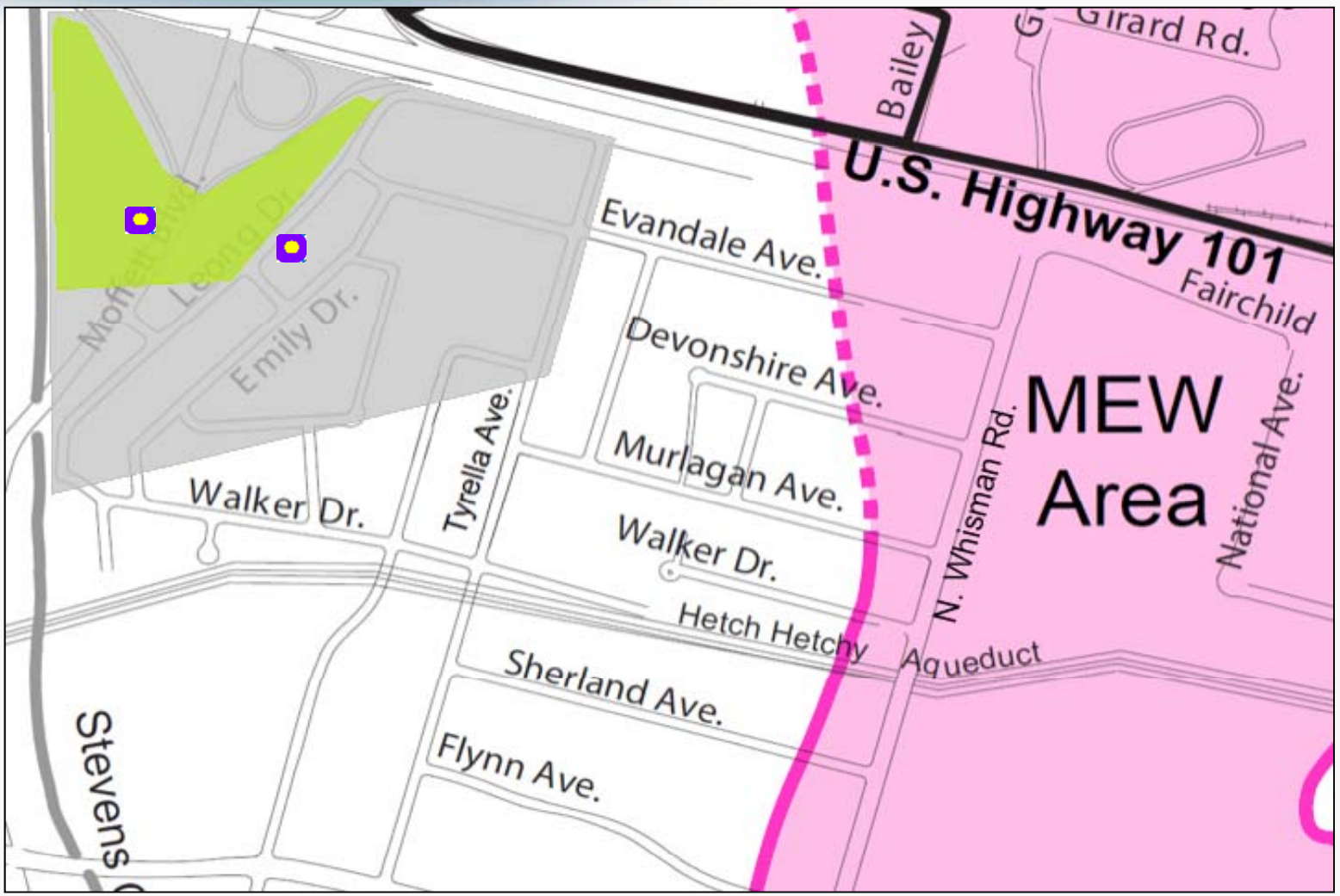


EPA Groundwater Investigation Area 2005 & 2011



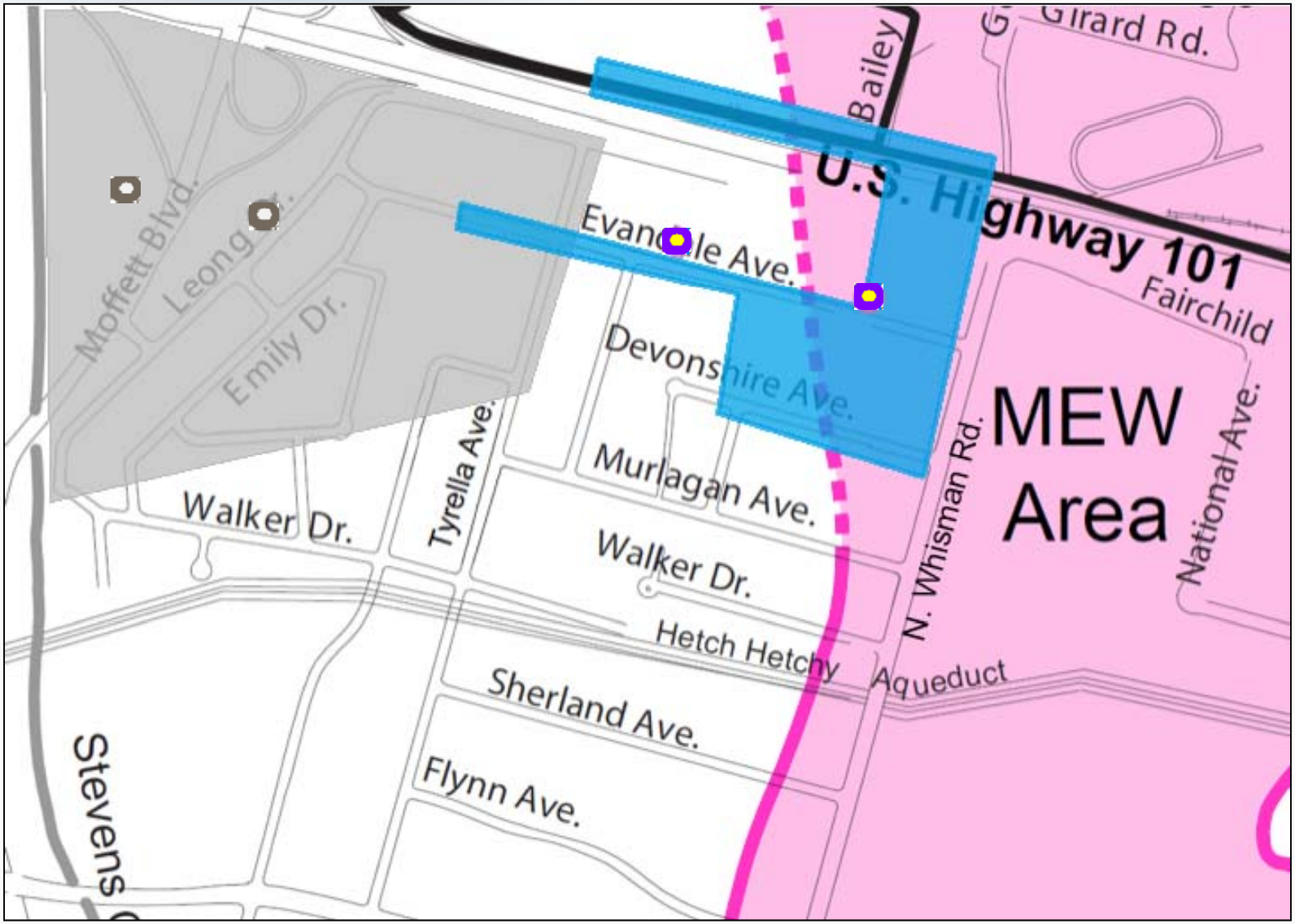
TCE Hot Spot Area

2007-2013 Additional Investigation Areas

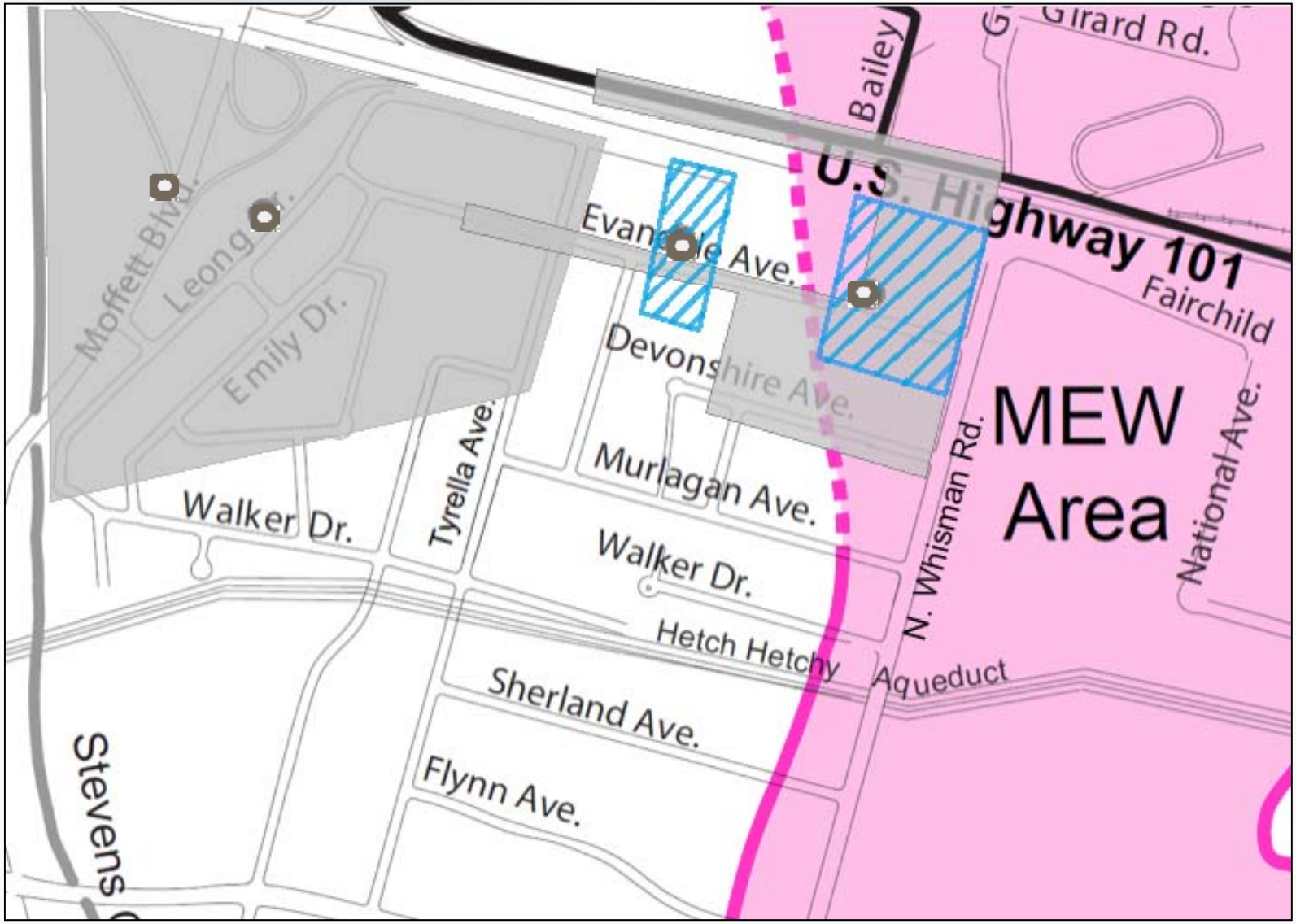


TCE Hot Spot Area

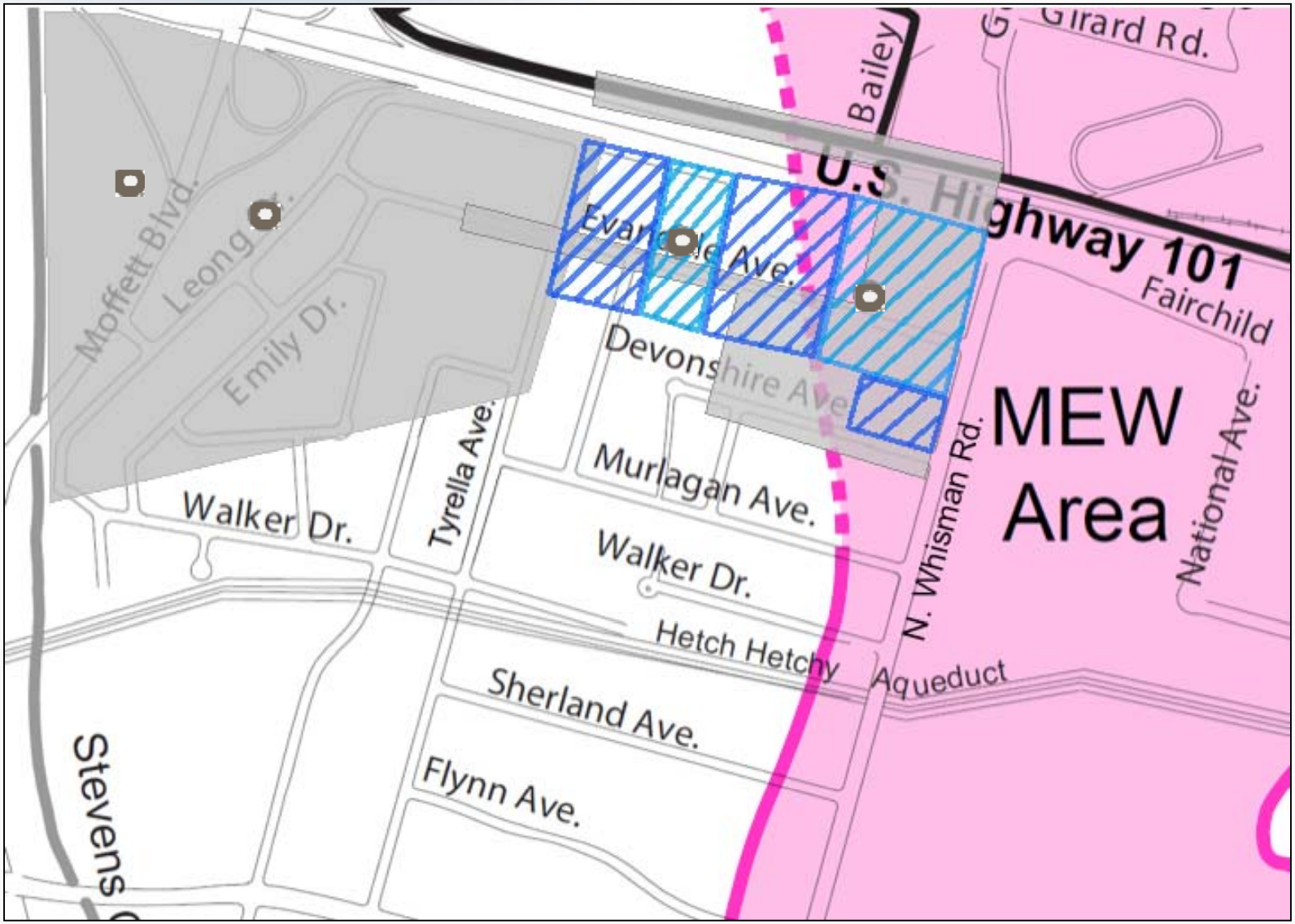
2012-2013 Groundwater Investigation



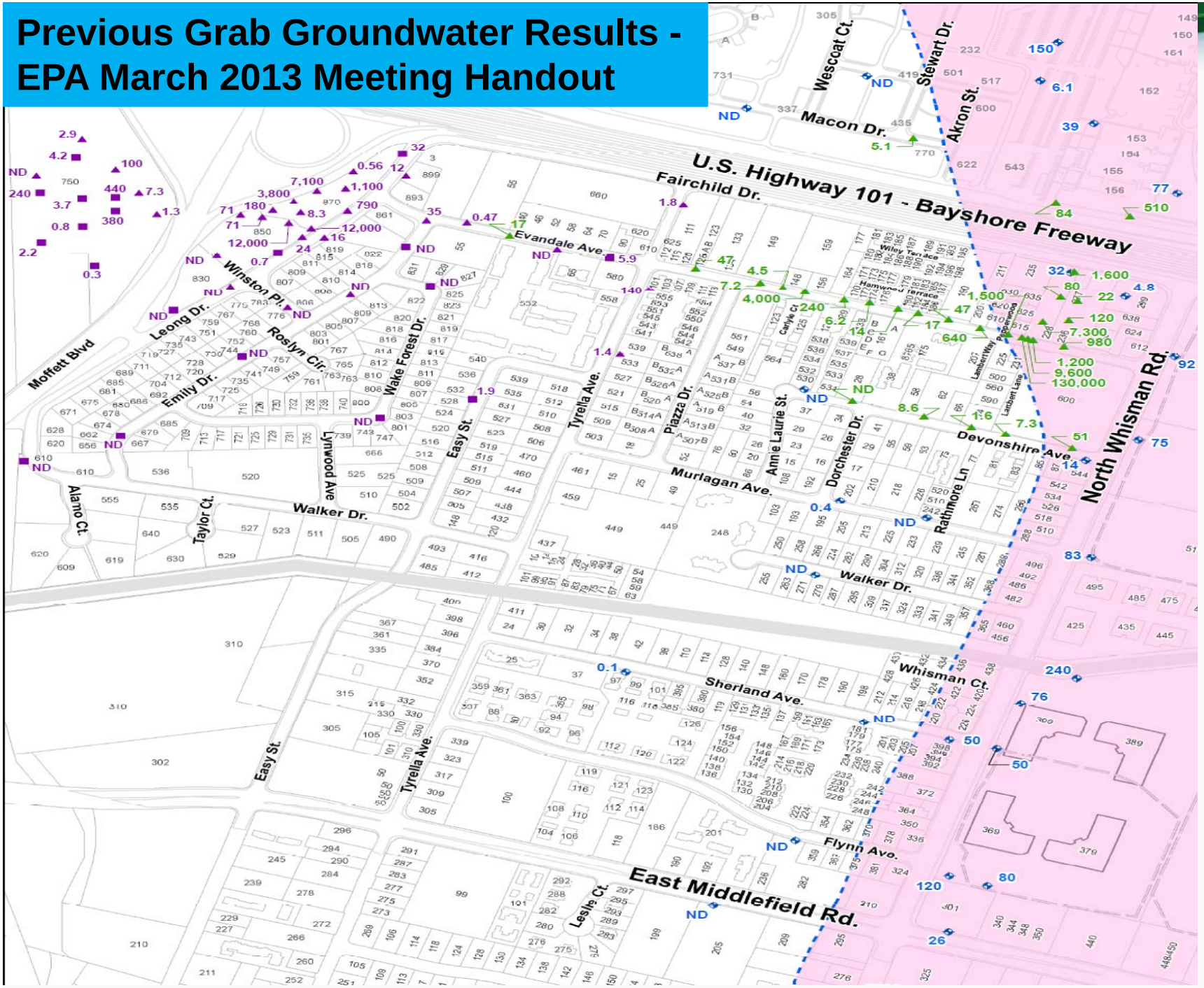
High Priority Indoor Air Sampling Area - Jan 2013



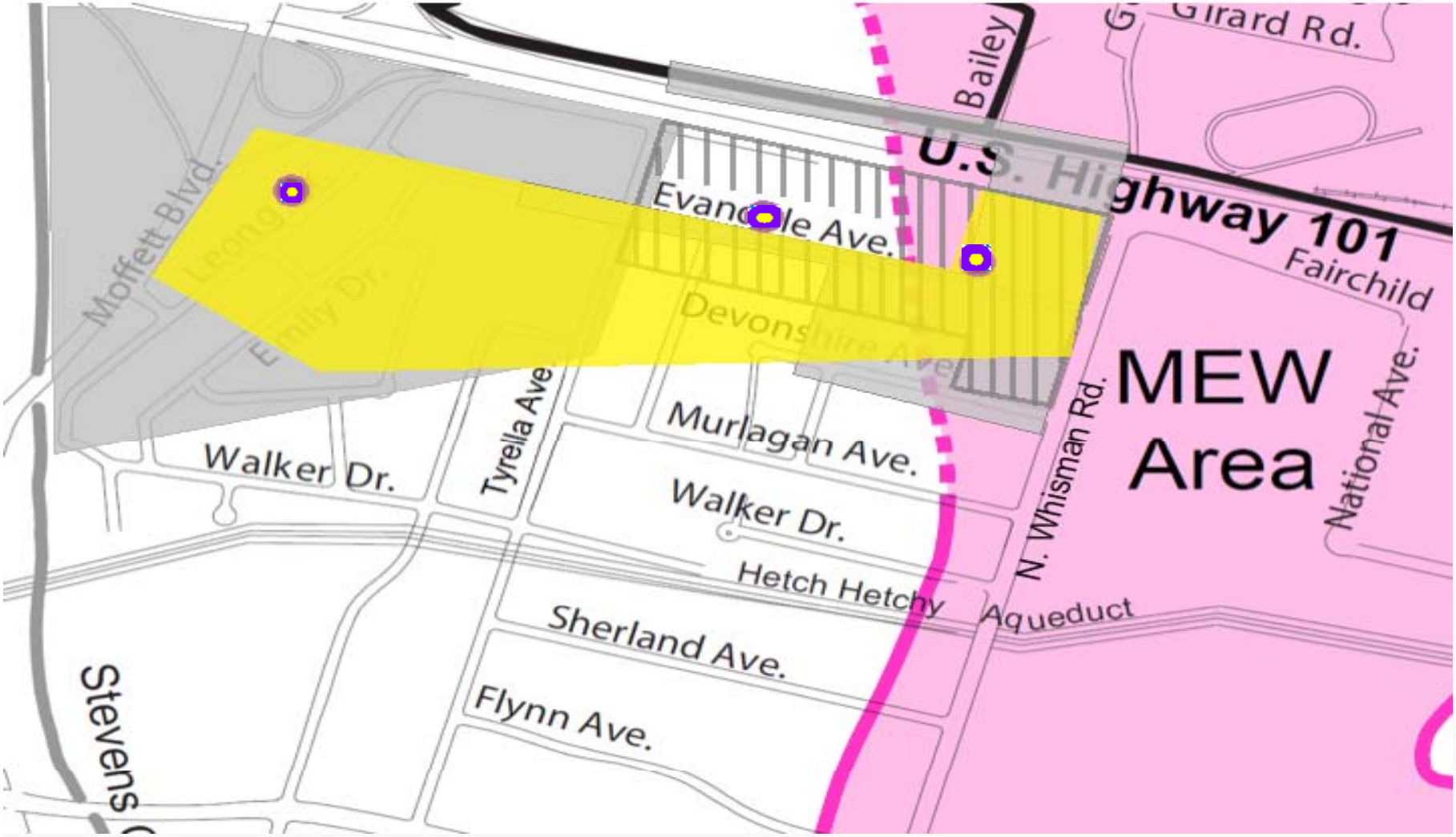
Expanded Residential Indoor Air Sampling Area – March 2013



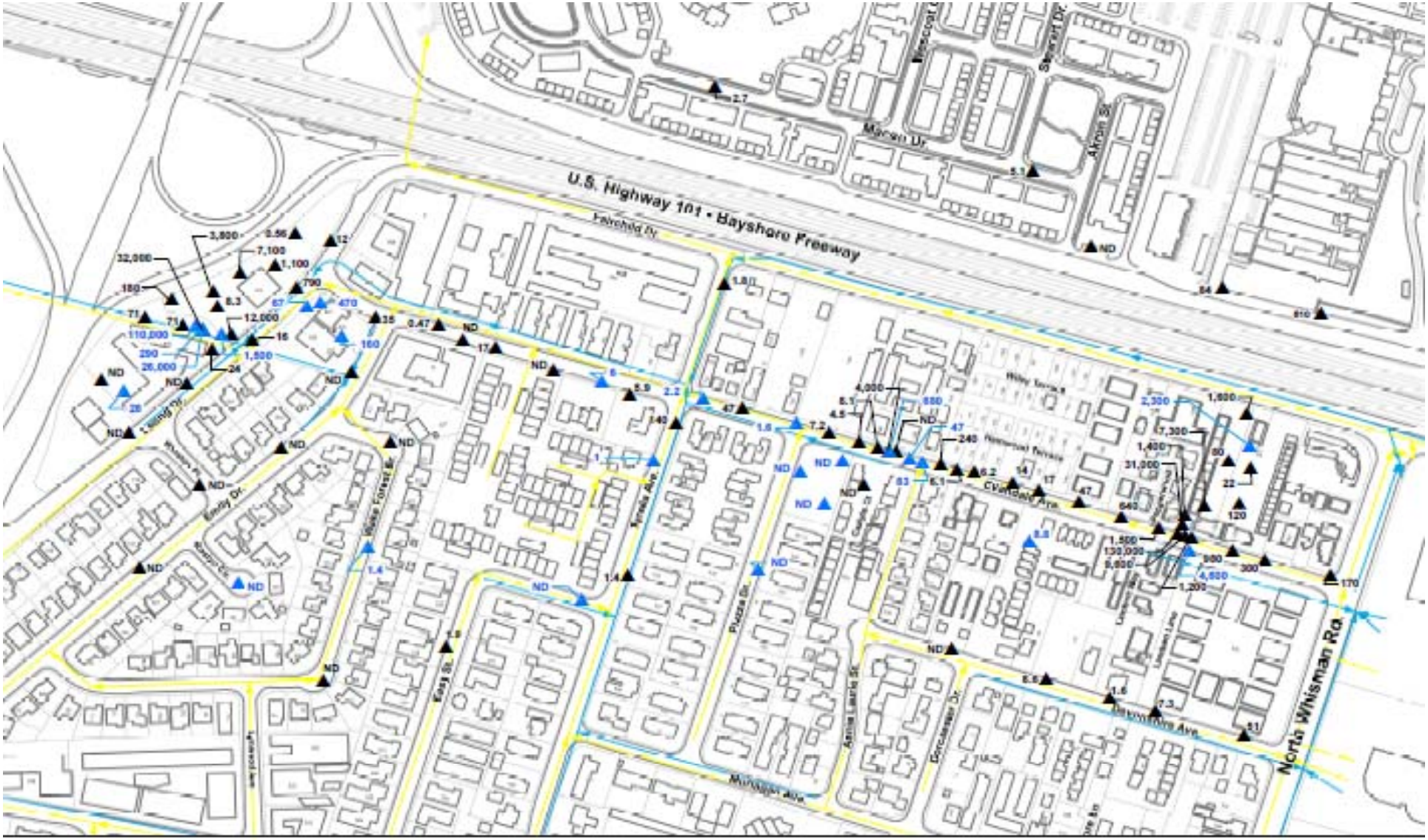
Previous Grab Groundwater Results - EPA March 2013 Meeting Handout



EPA Potential Source & Groundwater Investigation – Sept 2013



TCE Hot Spot Area



▲ 2013 EPA grab groundwater location

▲ 2005-2012 grab groundwater location

The result shown is the maximum groundwater TCE concentration in parts per billion (ppb) to 40 feet below ground surface.

ND = Not Detected (below 0.5 ppb TCE)

Sanitary sewer drainage route

Stormwater drainage route

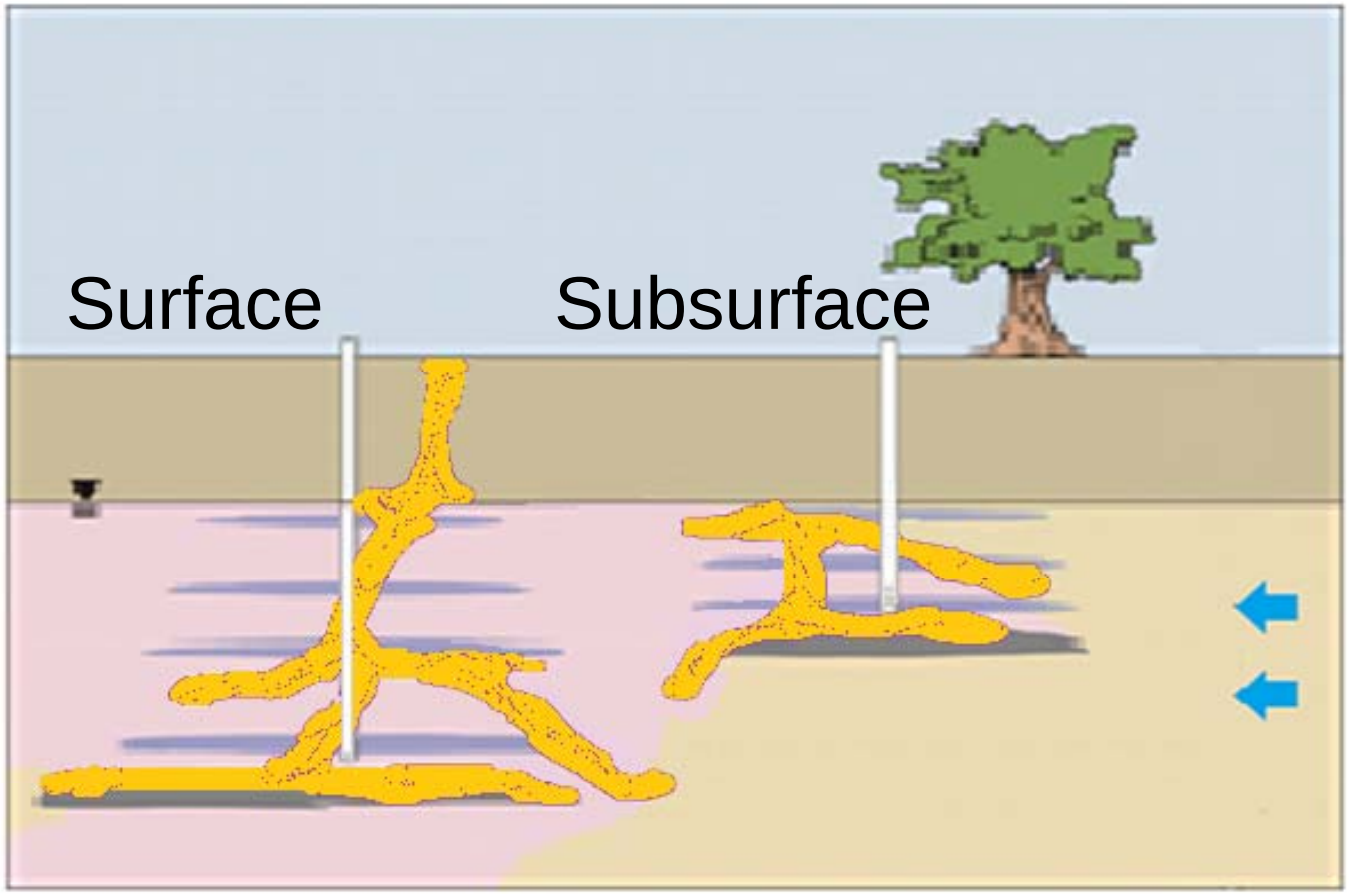
N

0 164 328 Feet

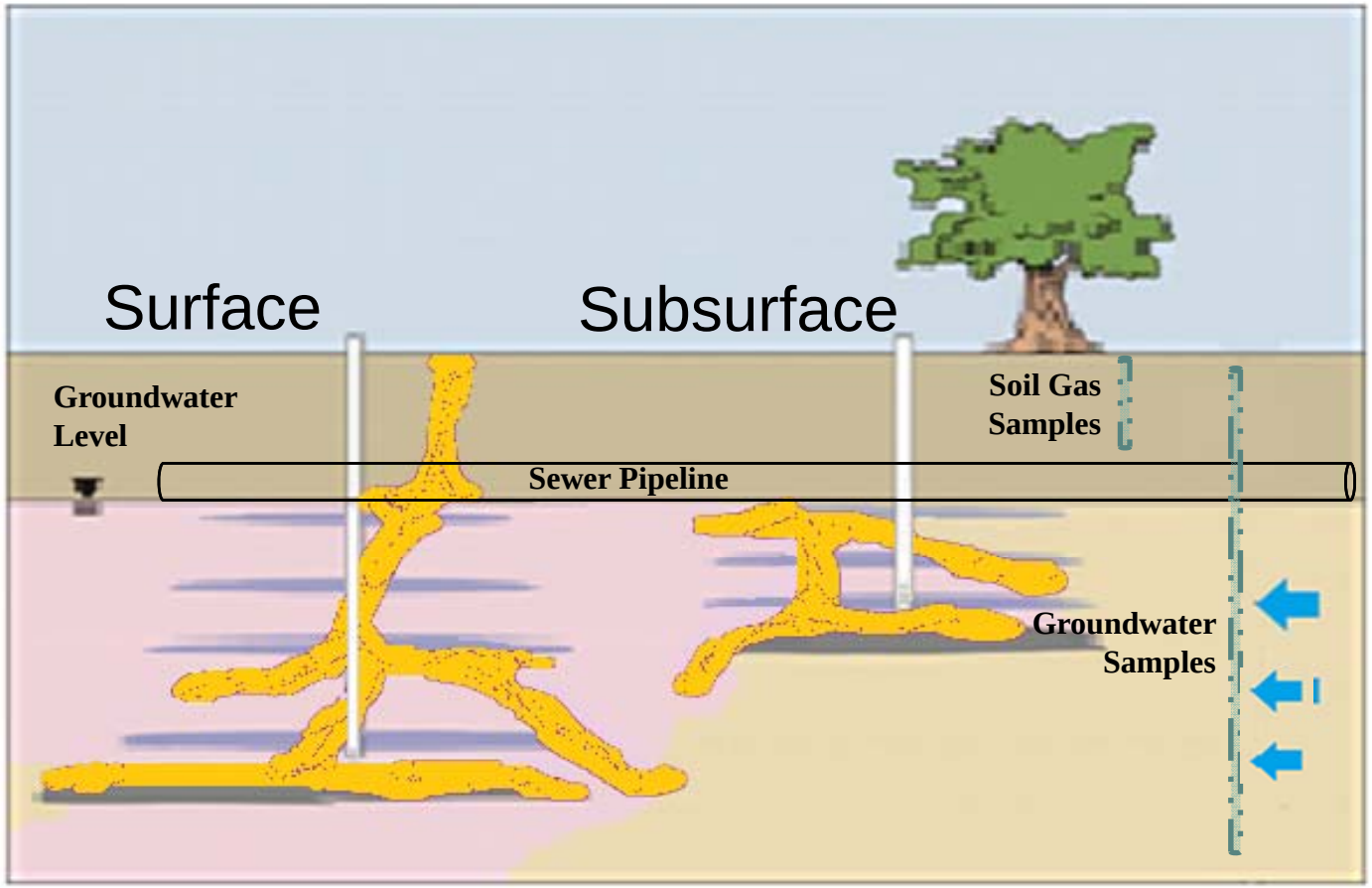
TCE Shallow Groundwater Results
September 2013

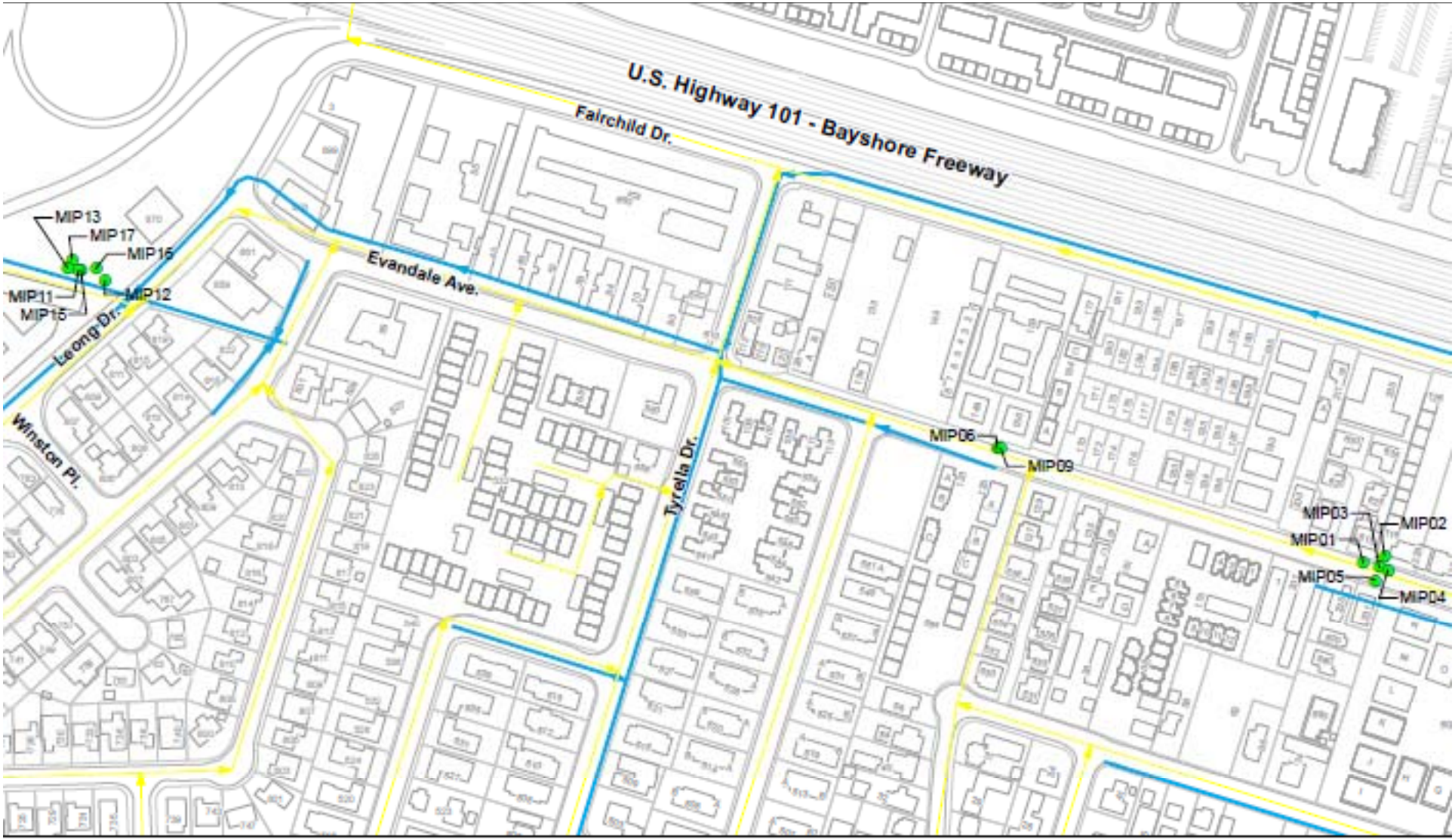
In Vicinity of Highway 101 & Moffett Blvd Study Area & MEW Superfund Site, Mountain View, CA

Source type



Sampling near Source Types





Membrane Interface Probe (MIP) Sampling Location
Sanitary sewer drainage route
Stormwater drainage route

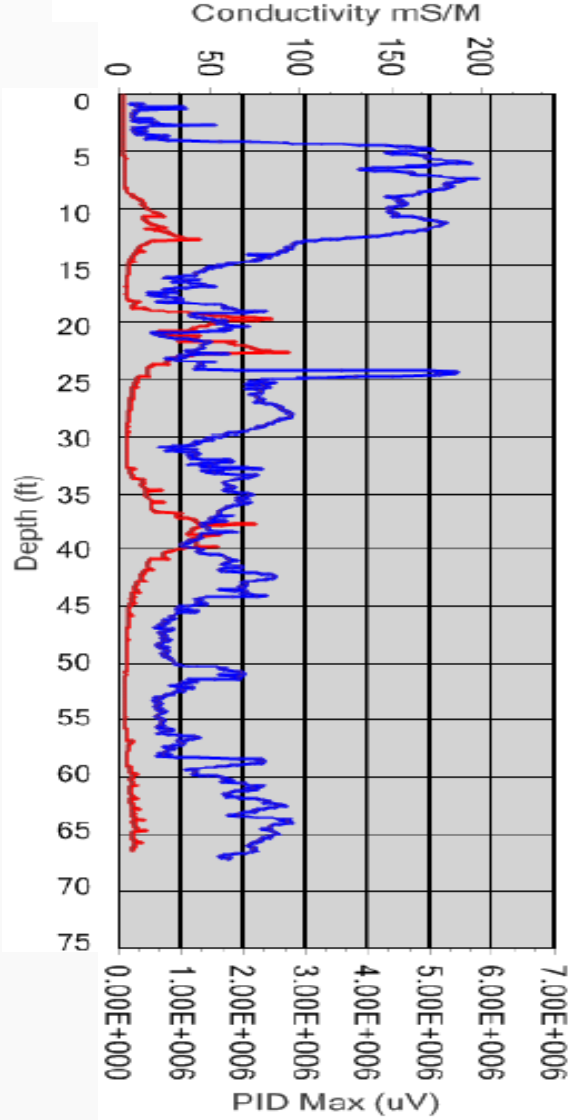
MEMBRANE INTERFACE PROBE (MIP) SAMPLING LOCATIONS
SEPTEMBER 2013
In Vicinity of Highway 101 & Moffett Blvd Study Area and
MEW Superfund Site, Mountain View, CA

0 90 180 Feet

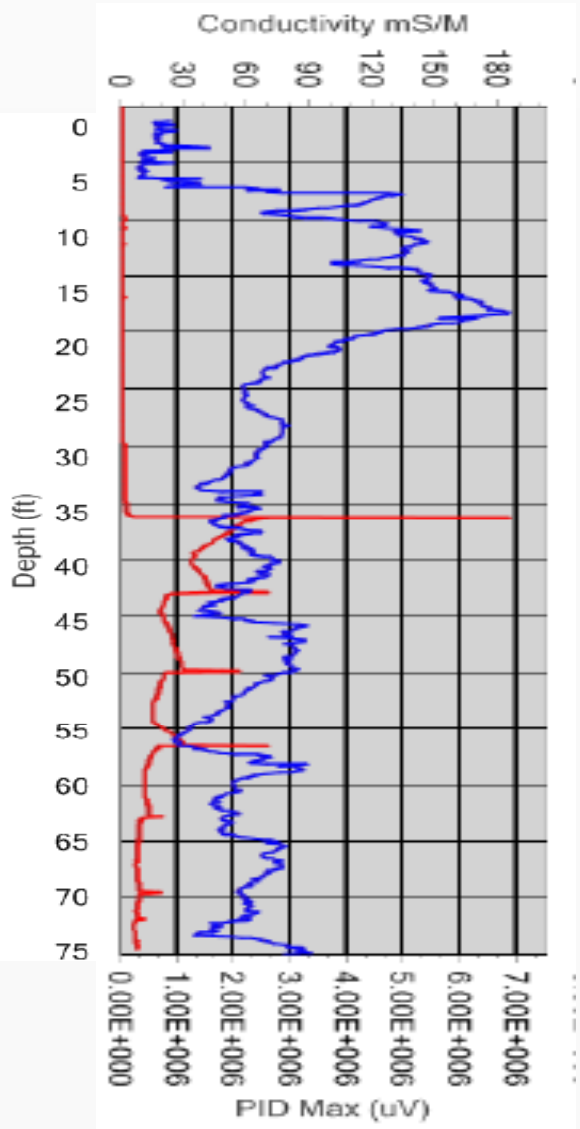
1 inch = 252 feet

Membrane Interface Probe (MIP) Example Results

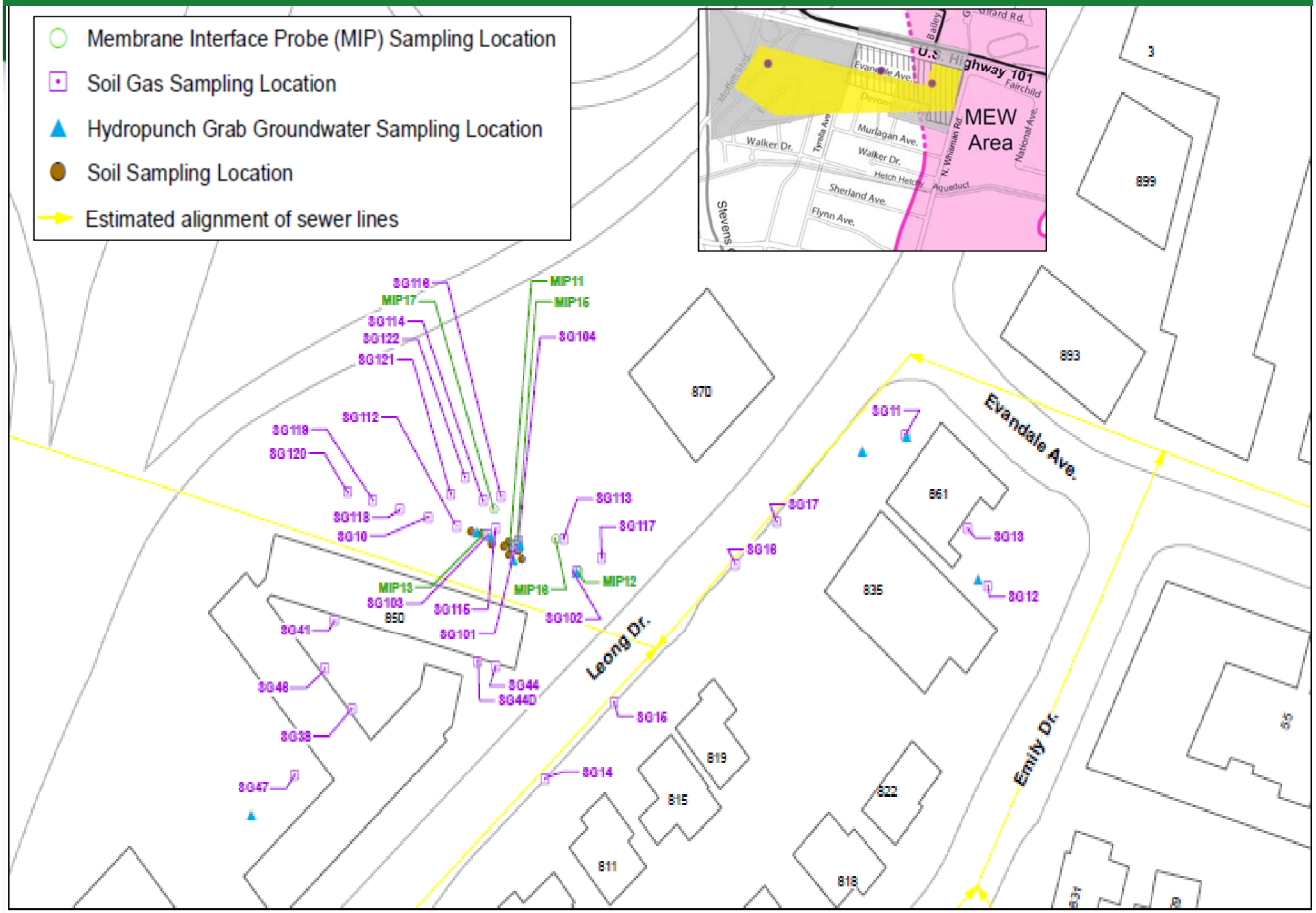
Leona Drive

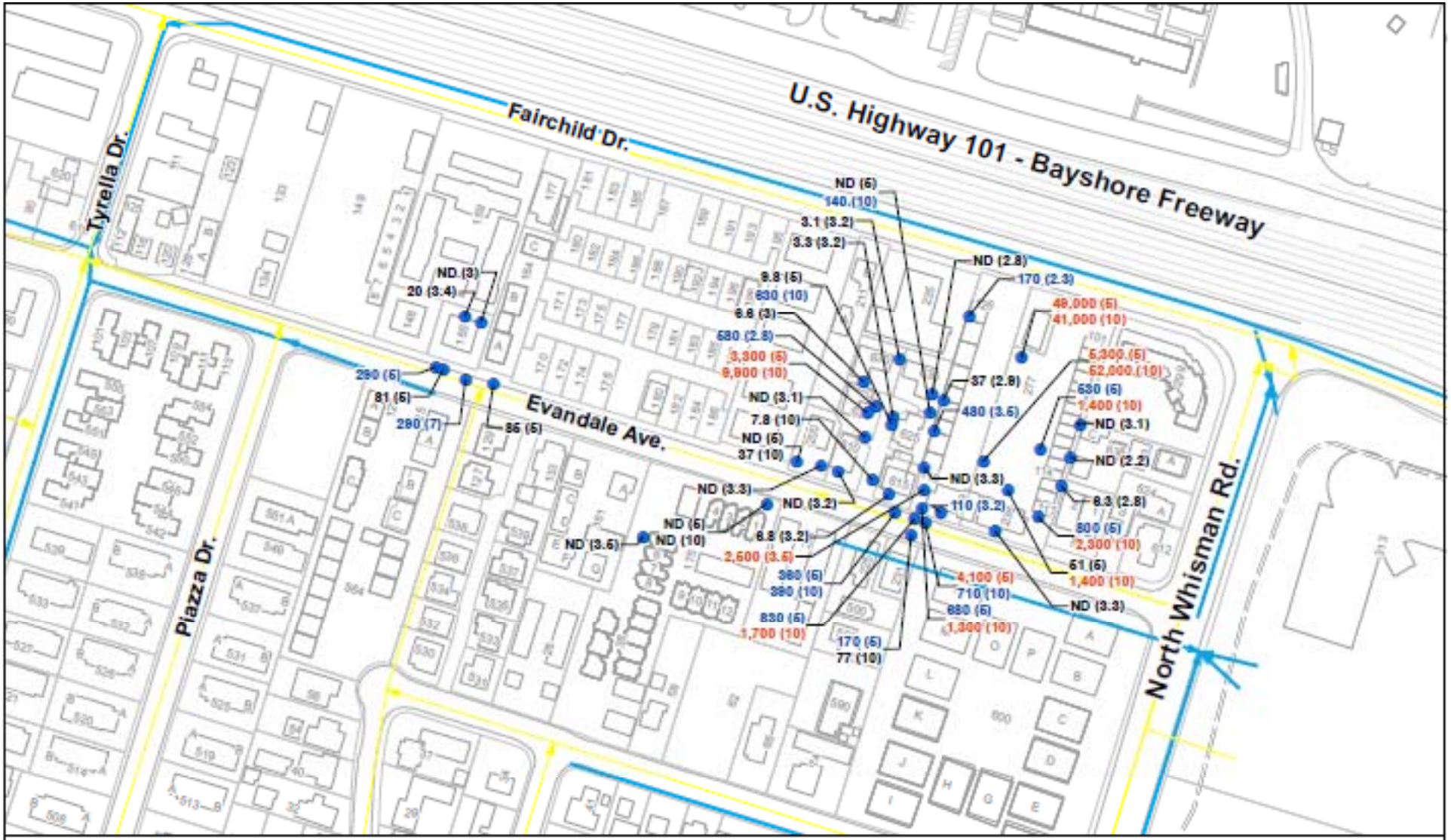


Evandale Ave



EPA Sample Locations – Leong Drive Area





- Soil Gas Sample Location
- Sanitary sewer drainage route
- Stormwater drainage route

170 (5) The result shown is the TCE soil gas concentration in µg/m³. The sample depth in feet below ground surface is shown in parentheses.

ND Not detected. TCE result is below the laboratory detection limit of 2.7 µg/m³.

µg/m³ micrograms per cubic meter

Black TCE soil gas concentration less than (<) 100 µg/m³

Blue TCE soil gas concentration greater than (>) 100 µg/m³

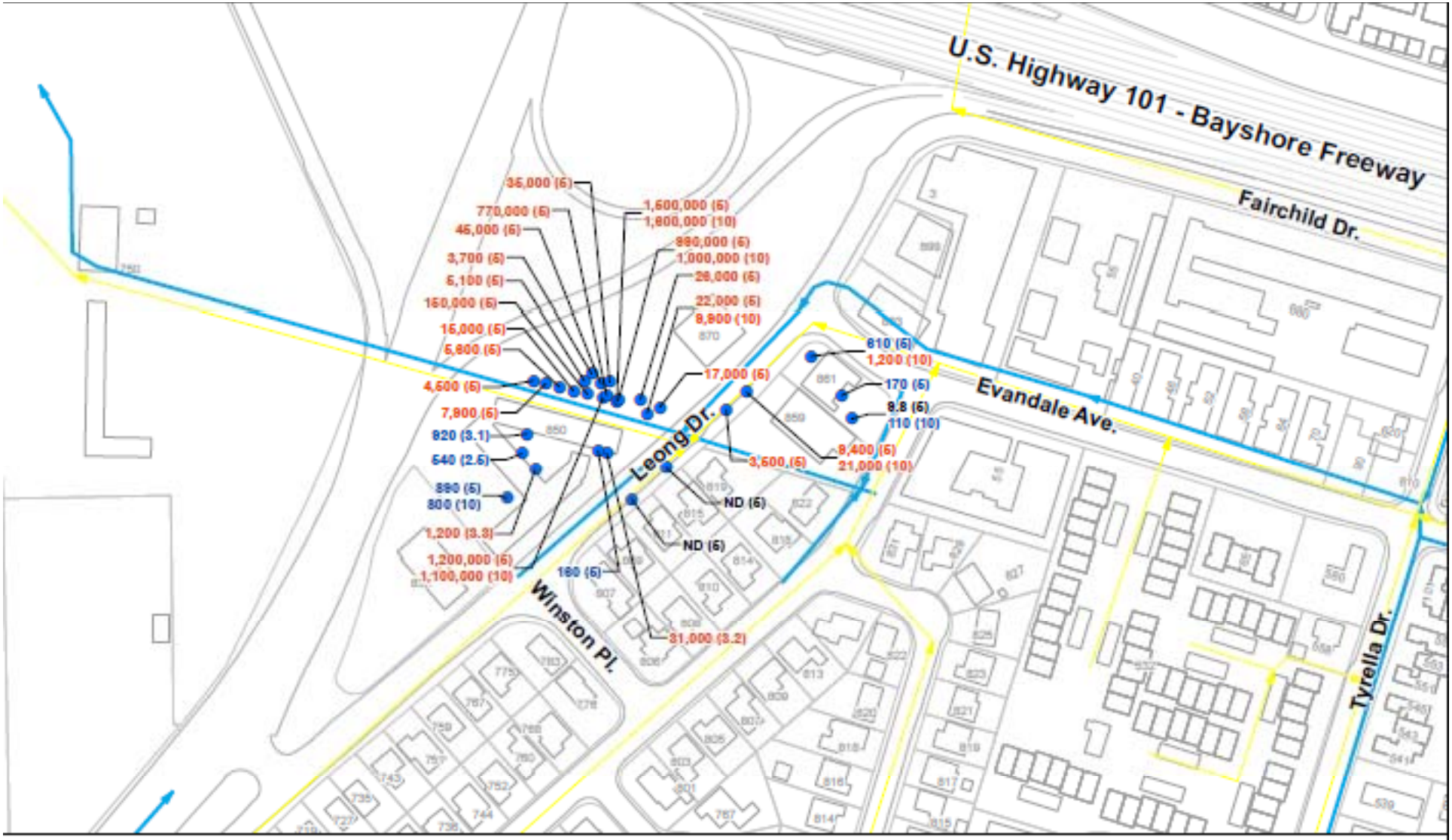
Orange TCE soil gas concentration greater than (>) 1,000 µg/m³

N

0 90 180 Feet

1 inch = 200 feet

TCE IN SOIL GAS SAMPLE RESULTS IN RESIDENTIAL AREA
SEPTEMBER 2013
South of Highway 101
MEW Superfund Site, Mountain View, CA



- Soil Gas Sample Location
- Sanitary sewer drainage route
- Stormwater drainage route

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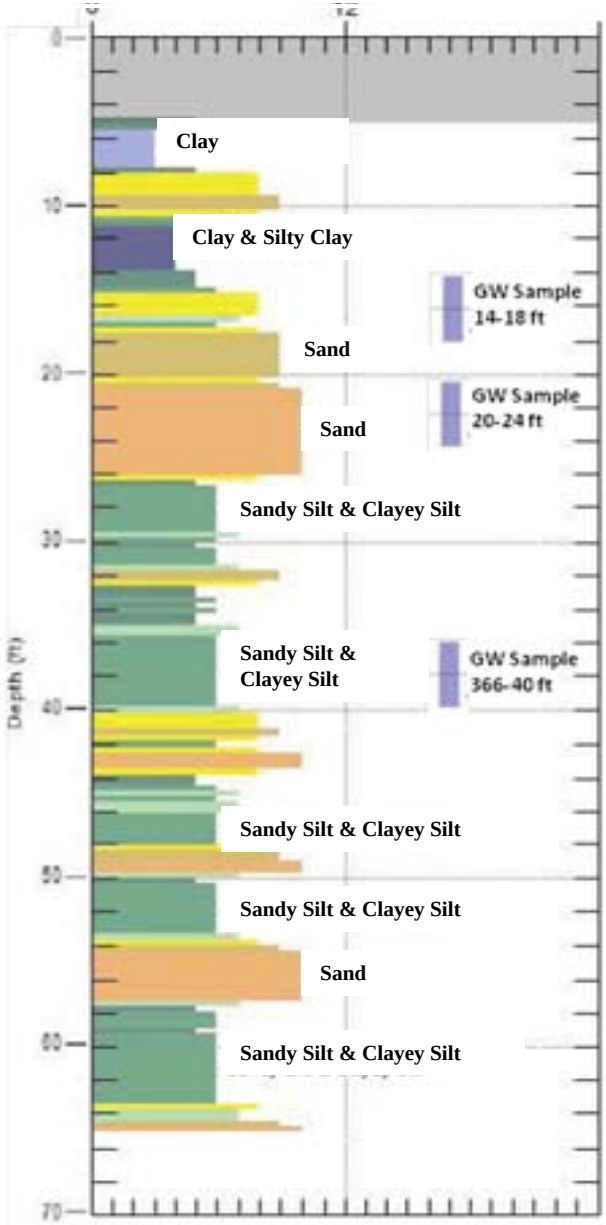
TCE IN SOIL GAS SAMPLE RESULTS IN LEONG DRIVE AREA SEPTEMBER 2013

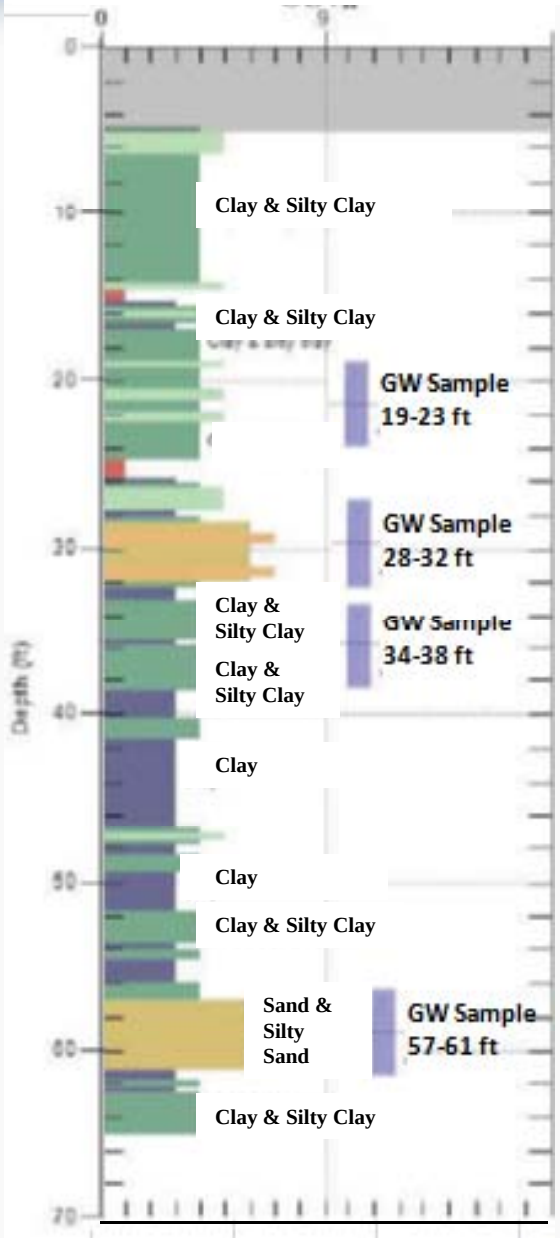
In Vicinity of Highway 101 & Moffett Blvd Study Area and MEW Superfund Site, Mountain View, CA

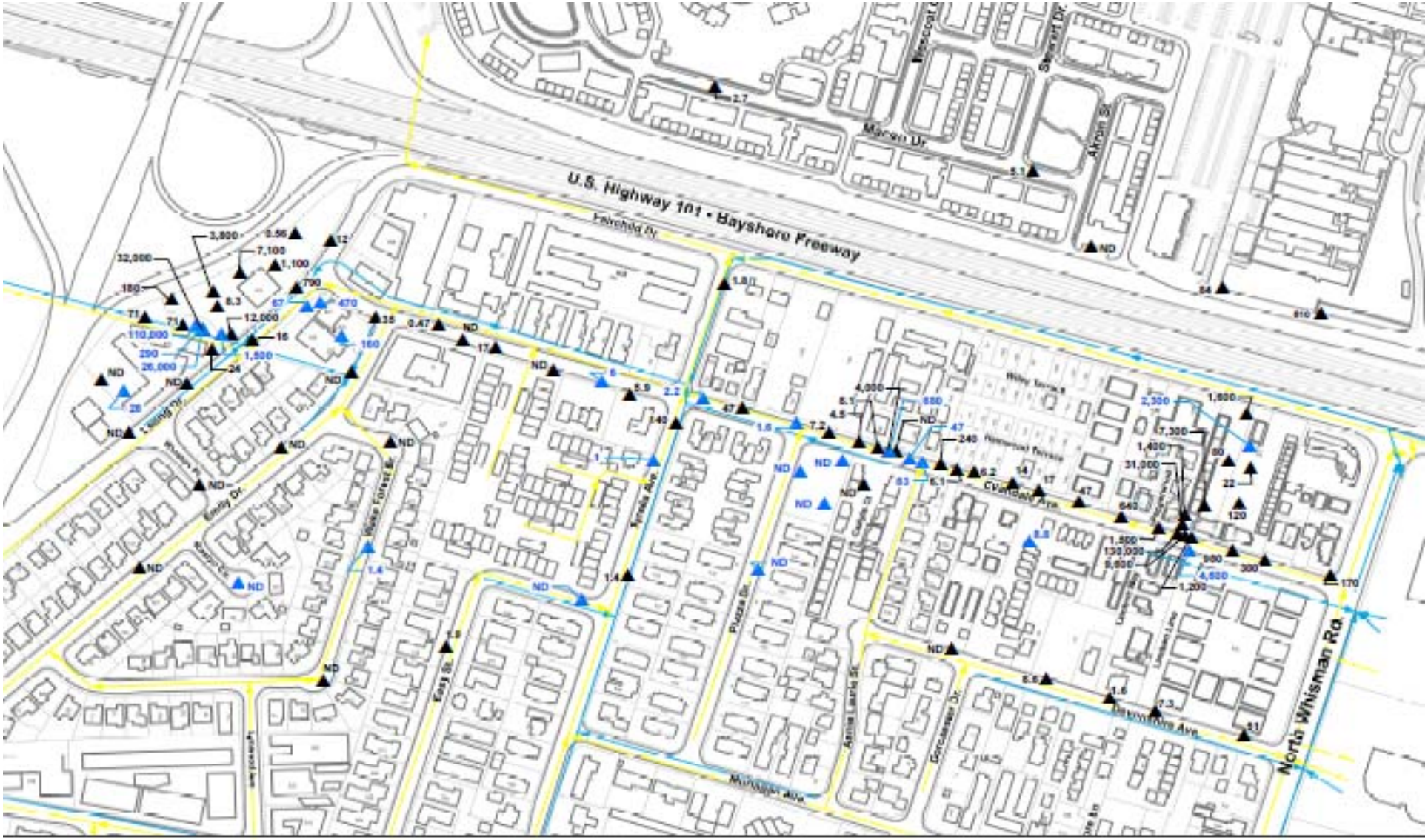
CPT Log - Examples

Leong Drive



Evandale Ave





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Stormwater drainage route

N

0 164 328 Feet

TCE Shallow Groundwater Results
September 2013

In Vicinity of Highway 101 & Moffett Blvd Study Area & MEW Superfund Site, Mountain View, CA

EPA Contact Information

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EPA Websites –
For More Information
www.epa.gov/region9/mew
www.epa.gov/region9/moffettfield
www.epa.gov/oswer/vaporintrusion

TCE Update

December 11, 2013

Dan Stralka
Regional Toxicologist
EPA Region 9

TCE Update

- EPA issued new TCE Toxicity Assessment on September 28, 2011
- EPA Region 9 Interim Short-term Indoor Air Response Action Levels
- Questions

2011 TCE Health Assessment

- In September 2011, EPA finalized TCE Health Assessment (see *Toxicological Review of TCE* *http://www.epa.gov/iris/subst/0199.htm*)

- Assessment concluded TCE is human carcinogen. Can cause cancer in humans if exposed to high enough concentrations for a long enough period of time.

- TCE can also affect the central nervous system, kidneys and liver, male reproductive organs, and the developing fetus.

Potential Health Effects Associated with TCE

- **Non-cancer**
  - » Acute effects- neurological
  - » Various organ systems
    - Liver
    - Kidney
  - » Immunological
  - » Reproductive
  - » Developmental
- **Cancer**
  - » Kidney
  - » Liver
  - » Lymphoma
- **Mode of Action**
  - » Mutagenic
  - » through metabolites

EPA Region 9 Interim TCE Indoor Air Short-term Response Action Levels

Exposure scenario	Prompt Action Level (HQ=1)	MEW /Moffett Field Indoor Air Cleanup Level
Residential (24-hour)	2 $\mu g/m^3$	1 $\mu g/m^3$
Commercial/Industrial (10-hour workday)	7 $\mu g/m^3$	5 $\mu g/m^3$

$\mu g/m^3$ = micrograms per cubic meter
HQ = Hazard Quotient

For More TCE Information

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For more information on TCE, see
http://www.epa.gov/IRIS/
and click on TCE link