



# **Former Fort Ord Monterey County California**

## **Groundwater Cleanup Update** February 2022

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*Ahtna*

# Fort Ord Groundwater: Definitions

**ACL** – Aquifer Cleanup Level, the cleanup goal for a COC in groundwater.

**Aquifer** – a body of rock or soil that is sufficiently permeable for groundwater to flow and serve as a water source.

**Aquitard** – a body of less permeable rock or soil between aquifers that retards the flow of water between the aquifers.

**COC** – chemical of concern.

**CT** – carbon tetrachloride, primary COC at OUCTP.

**Groundwater** – all water under the ground, not water on the surface (rivers, lakes, etc.).

**Groundwater Divide** – a boundary between groundwater basins; groundwater flows away from a groundwater divide.

**MNA** – monitored natural attenuation.

**OU** – Operable Unit, discrete portion of remedial response that manages migration, or eliminates or mitigates a pathway of exposure.

**PCE** – tetrachloroethene, primary COC at Sites 2/12.

**Plume** – area of aquifer or unsaturated zone in which COCs are present at concentrations greater than cleanup levels.

**SGCL** – Soil Gas Cleanup Level, the cleanup goal for a COC in soil gas.

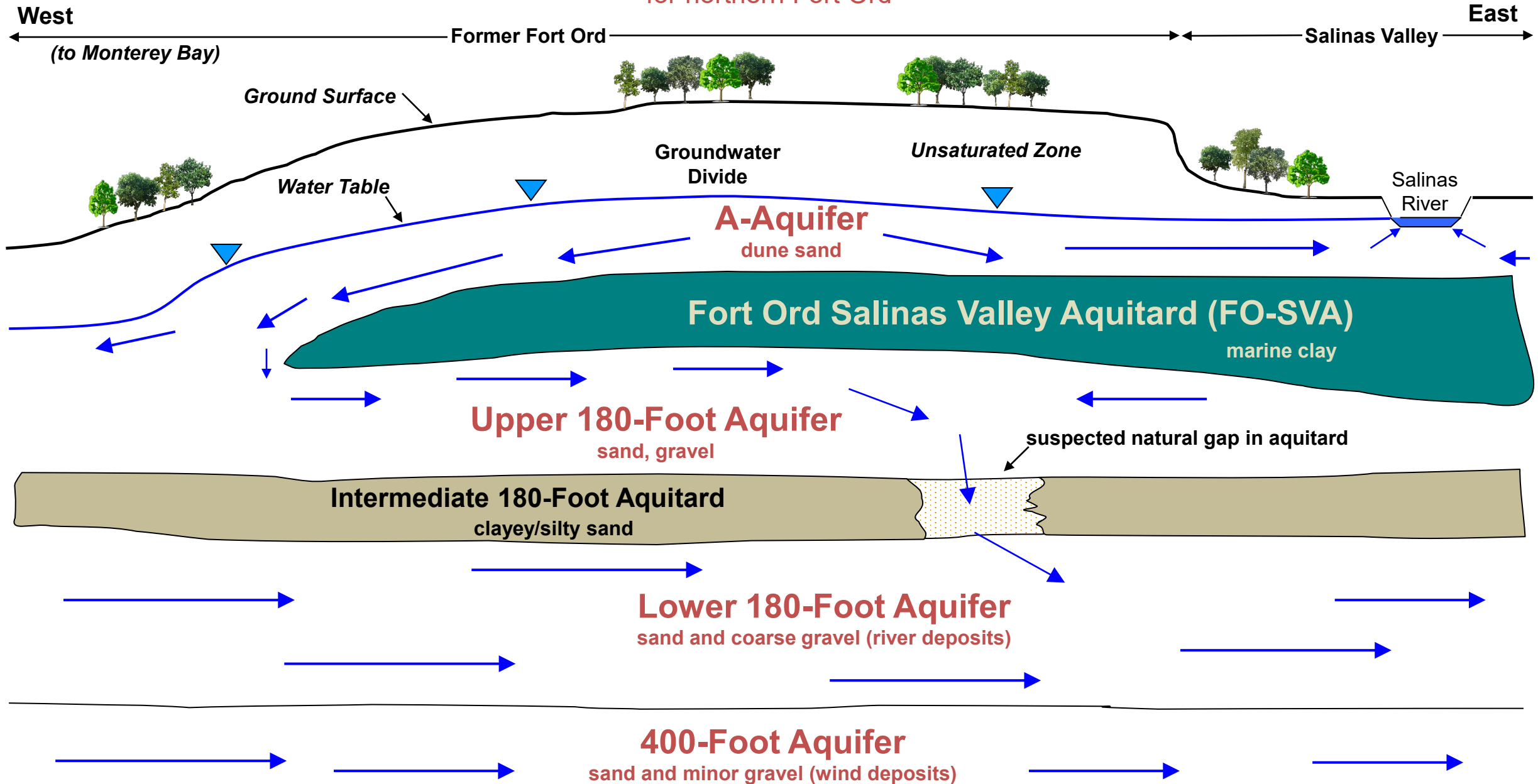
**TCE** – trichloroethene, primary COC at OU2.

**Unsaturated Zone** – the portion of the subsurface above the water table.

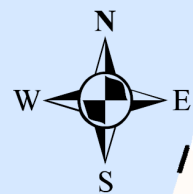
**Water Table** – depth below ground surface at which groundwater is found (at the top of the saturated zone).▼

# Interpretive Geologic Cross Section

for northern Fort Ord



# Current and Historical Plume Extents



Monterey Bay

City of Marina

DEL MONTE BLVD

RESERVATION RD

CALIFORNIA AVE

HWY-1

2ND AVE

IMJIN PKWY

ABRAMS DR

INTER-GARRISON RD

0 0.45 0.9



Miles

## EXPLANATION

### September 2021 Plume Extent "Current"

- OU2 TCE A-Aquifer
- OU2 TCE Upper 180-Foot Aquifer
- OUCTP CT A-Aquifer
- OUCTP CT Upper 180-Foot Aquifer
- OUCTP CT Lower 180/400-Foot Aquifers
- Site 12 PCE Upper 180-Foot Unconfined Aquifer
- TCE Lower 180-Foot Aquifer

### Maximum Historical Plume Extent "Before"

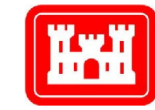
- OU1 A-Aquifer (TCE)
- OU2 A-Aquifer (TCE)
- OU2-Upper 180-Foot Aquifer (TCE)
- OUCTP A-Aquifer (CT)
- OUCTP Upper-180-Foot Aquifer (CT)
- OUCTP Lower 180/400-Foot Aquifers (CT)
- Sites 212 Unconfined Upper 180-Foot Aquifer (PCE)
- Sites 212 Unconfined Upper 180-Foot Aquifer (TCE)
- TCE Lower 180-Foot Aquifer

### Aquifer Cleanup Levels (ACLs)

Trichloroethene (TCE) = 5 µg/L (micrograms per liter)  
 Carbon Tetrachloride (CT) = 0.5 µg/L  
 Tetrachlorethene (PCE) for OUCTP and Sites 2/12 = 5 µg/L  
 Tetrachlorethene (PCE) for OU2 = 3 µg/L  
 OU1 cleanup is complete.

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Date: 1/17/2022

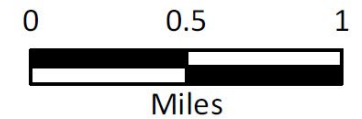




# Fort Ord Wells September 2021

## EXPLANATION

- Groundwater Monitoring Wells
- ⊞ Former Fort Ord Boundary

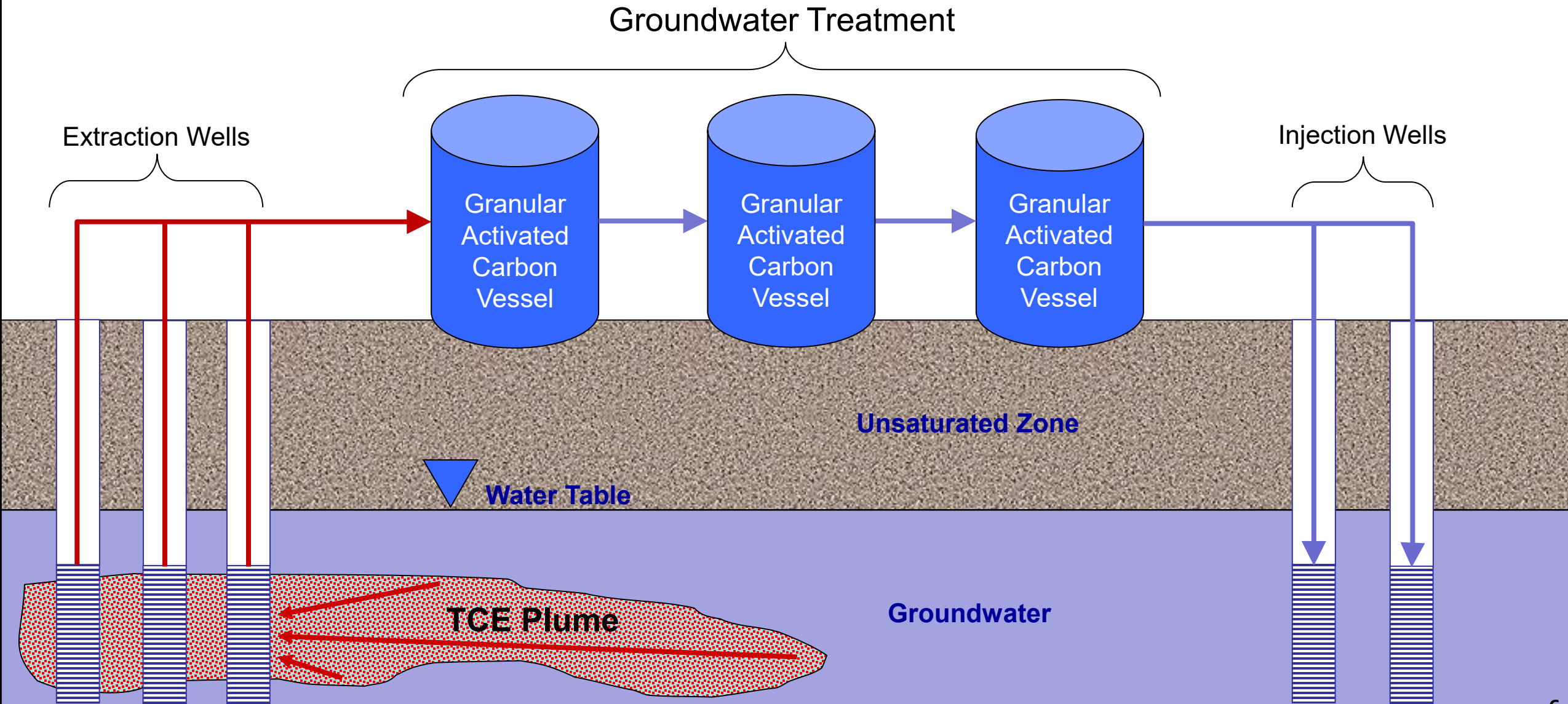


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Date: 1/17/2022



# Groundwater Extraction and Treatment Systems Schematic





# Groundwater Extraction and Treatment System Status

as of December 31, 2021

	<b>OU2/OUCTP*</b>	<b>Sites 2/12</b>
Treatment started	October 1995	April 1999
Gallons treated	8.812 billion	2.261 billion
Pounds of contaminants removed	926	495
Gallons of contaminants removed	74	39
Aquifers treated	A-Aquifer Upper 180-Foot Aquifer	Upper 180-Foot Aquifer

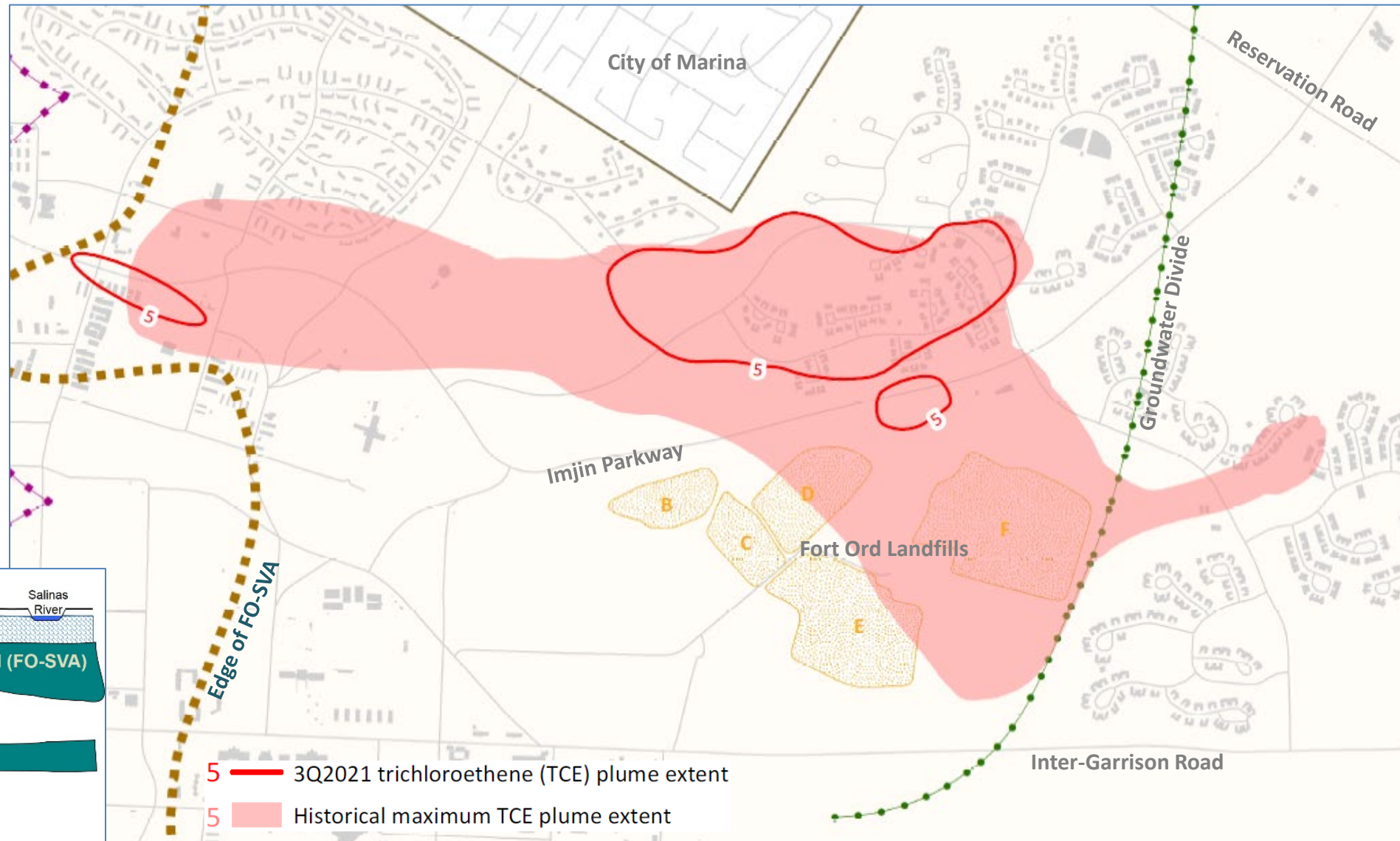
\*The OUCTP remedy for the Upper 180-Foot Aquifer is connected to the OU2 groundwater treatment plant.

# OU2 A-Aquifer

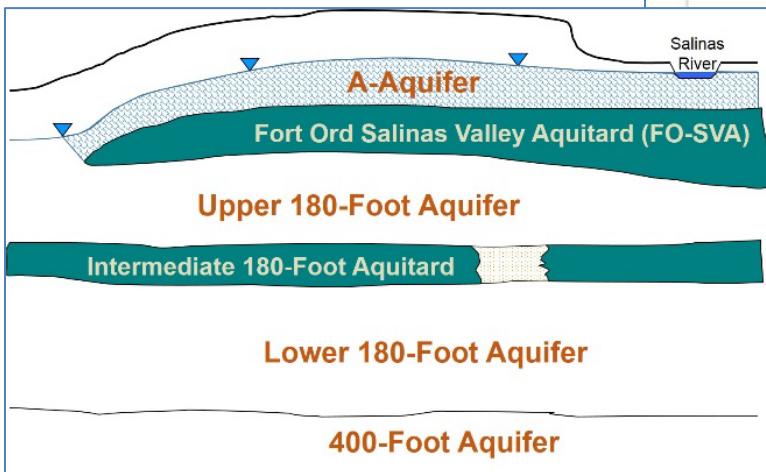
TCE at or above ACL ( $5\text{ }\mu\text{g/L}$ )



Remedy: Groundwater Extraction and Treatment



5 — 3Q2021 trichloroethene (TCE) plume extent  
5 Historical maximum TCE plume extent



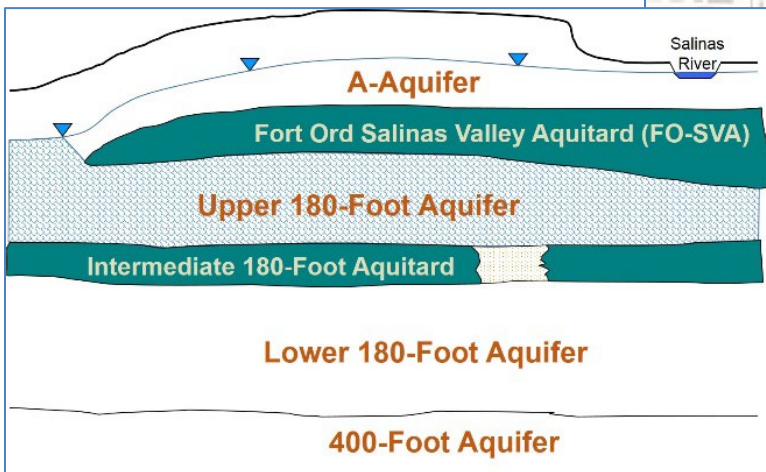
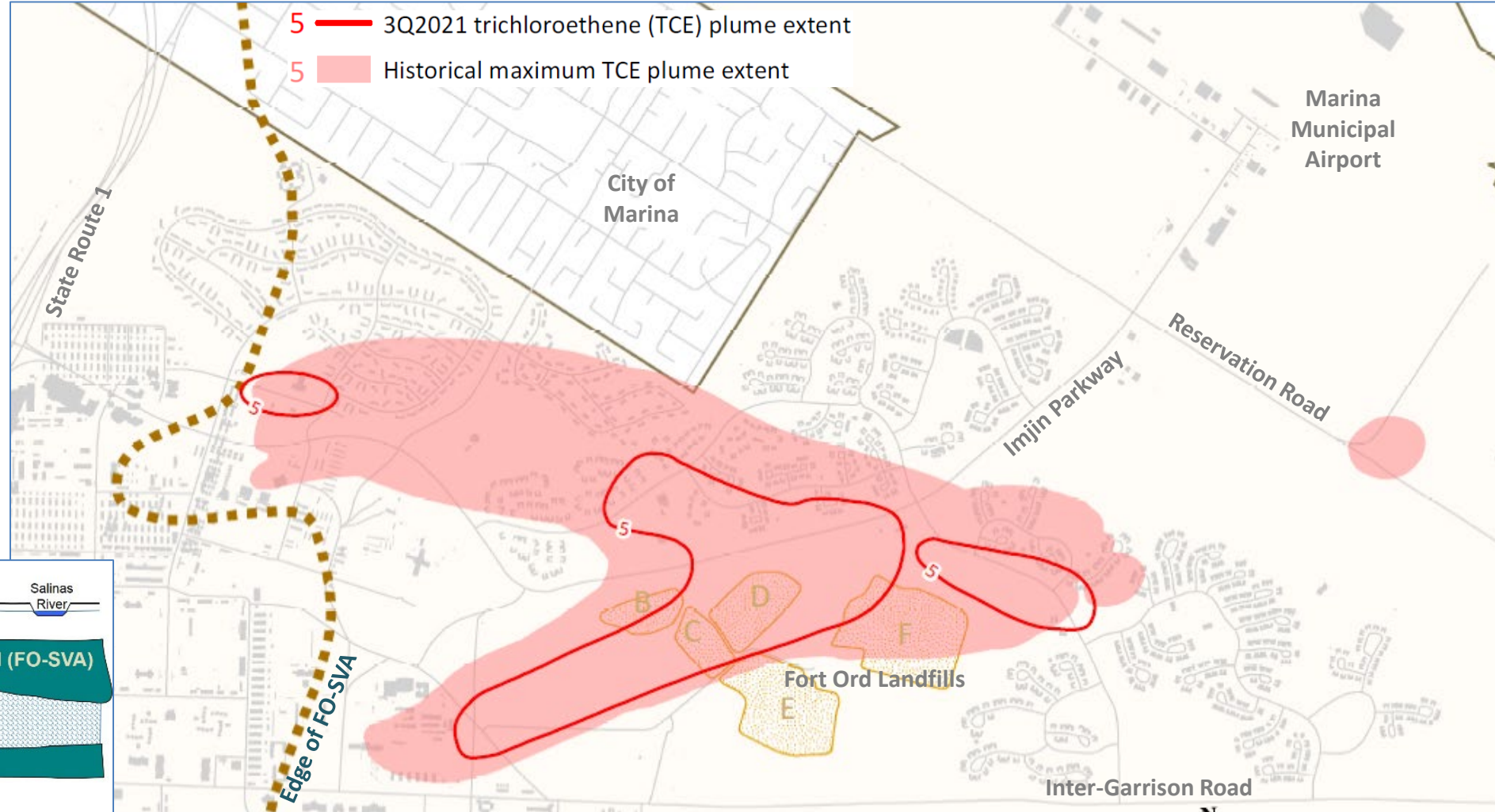


# OU2 Upper 180-Foot Aquifer

TCE at or above ACL ( $5\text{ }\mu\text{g/L}$ )





Remedy: Groundwater  
Extraction and Treatment



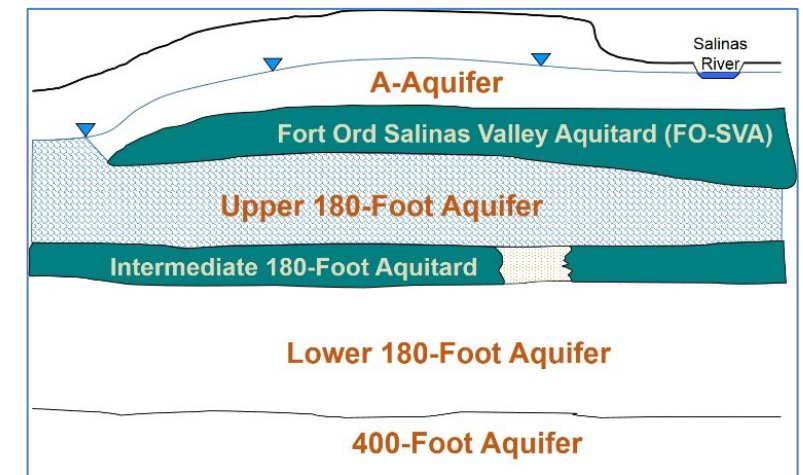
# Sites 2 and 12 Upper 180-Foot Aquifer



Chemicals of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contours in  $\mu\text{g/L}$ .

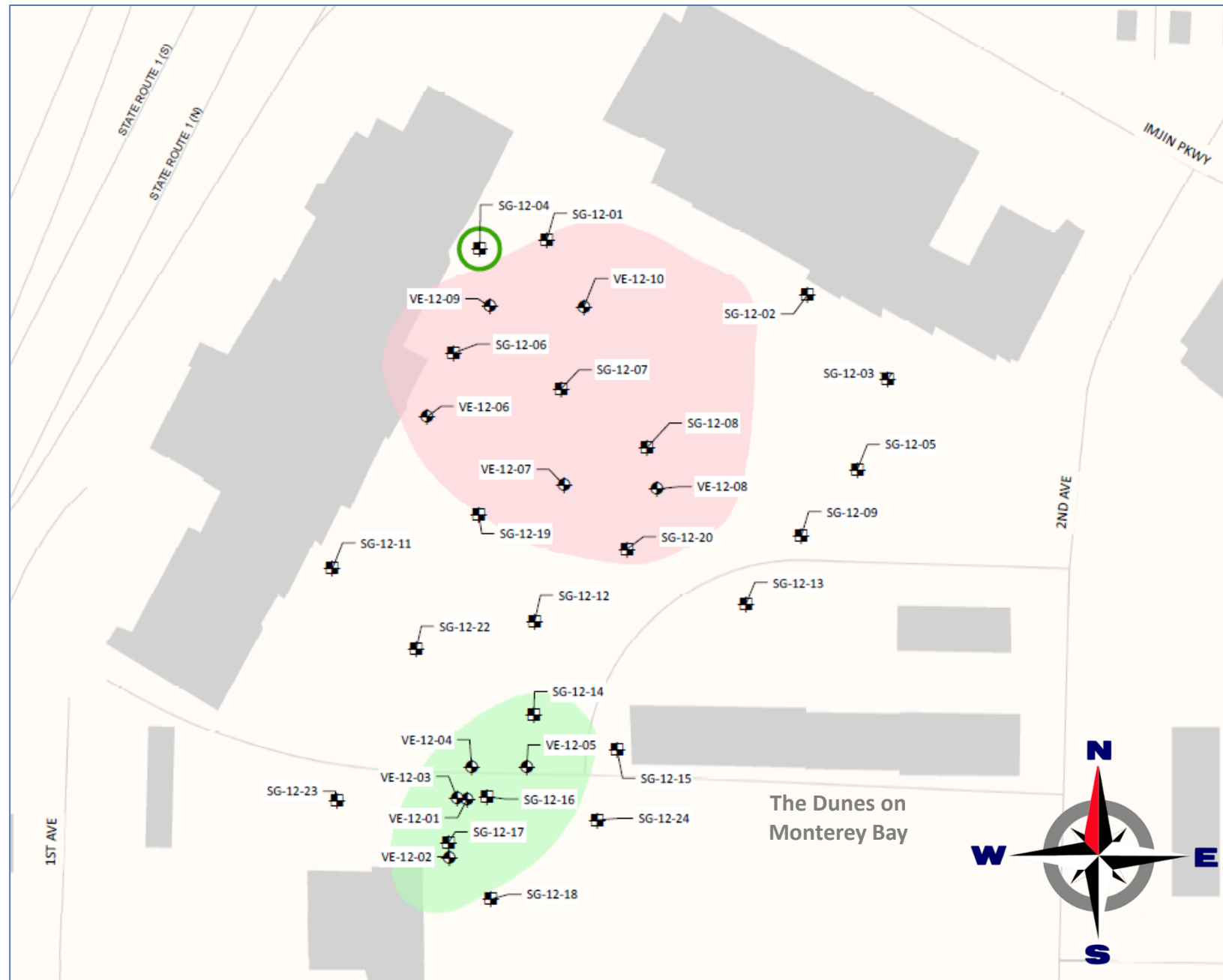
- 5 — 3Q2021 tetrachloroethene (PCE) plume extent
- 5  Historical maximum PCE plume extent
- 5  Historical maximum trichloroethene (TCE) plume extent

Remedy: Groundwater Extraction and Treatment





# Sites 2 and 12 Unsaturated Zone



Site 12: Soil gas probe cluster

Site 12: Soil vapor extraction well

**Chemical of concern (COC) Soil Gas Cleanup Level (SGCL) exceedance Contour in  $\mu\text{g}/\text{m}^3$ .**

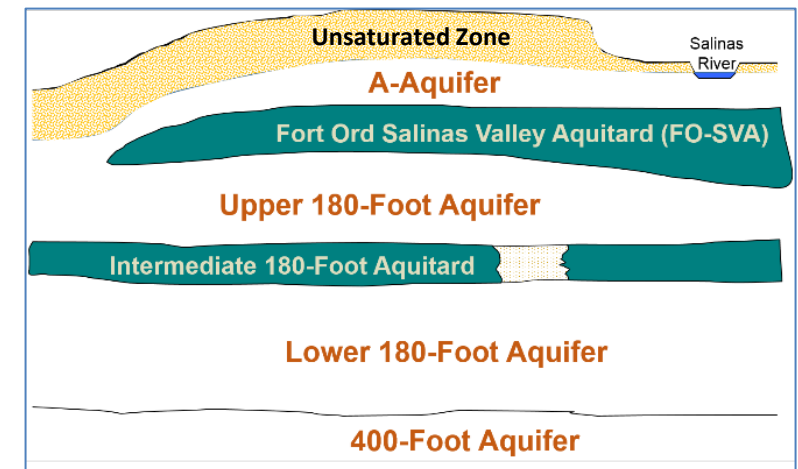
1,800 3Q2021 tetrachloroethene (PCE) plume - no current plume

1,000 3Q2021 trichloroethene (TCE) plume

PCE above SGCL (June 2014)

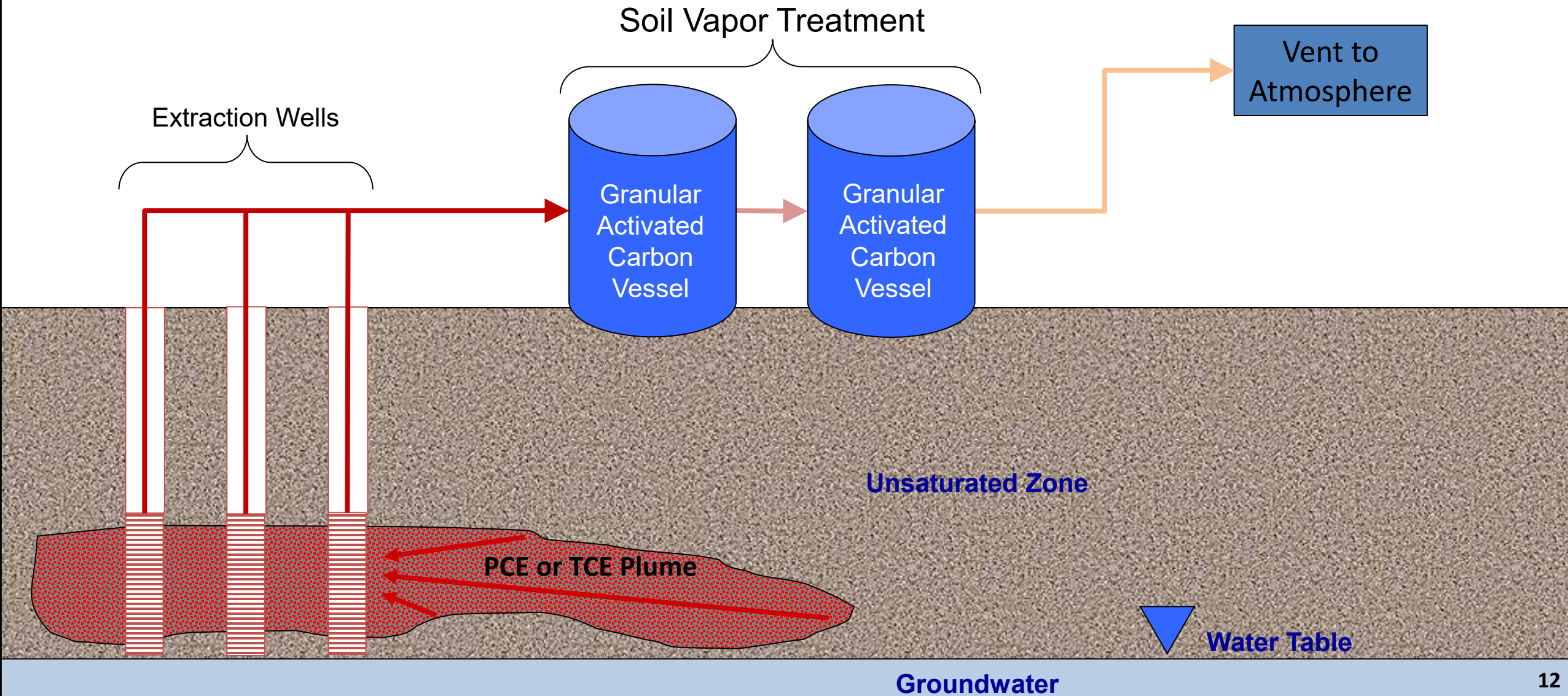
TCE above SGCL (June 2014)

**Remedy: Soil Vapor Extraction and Treatment**

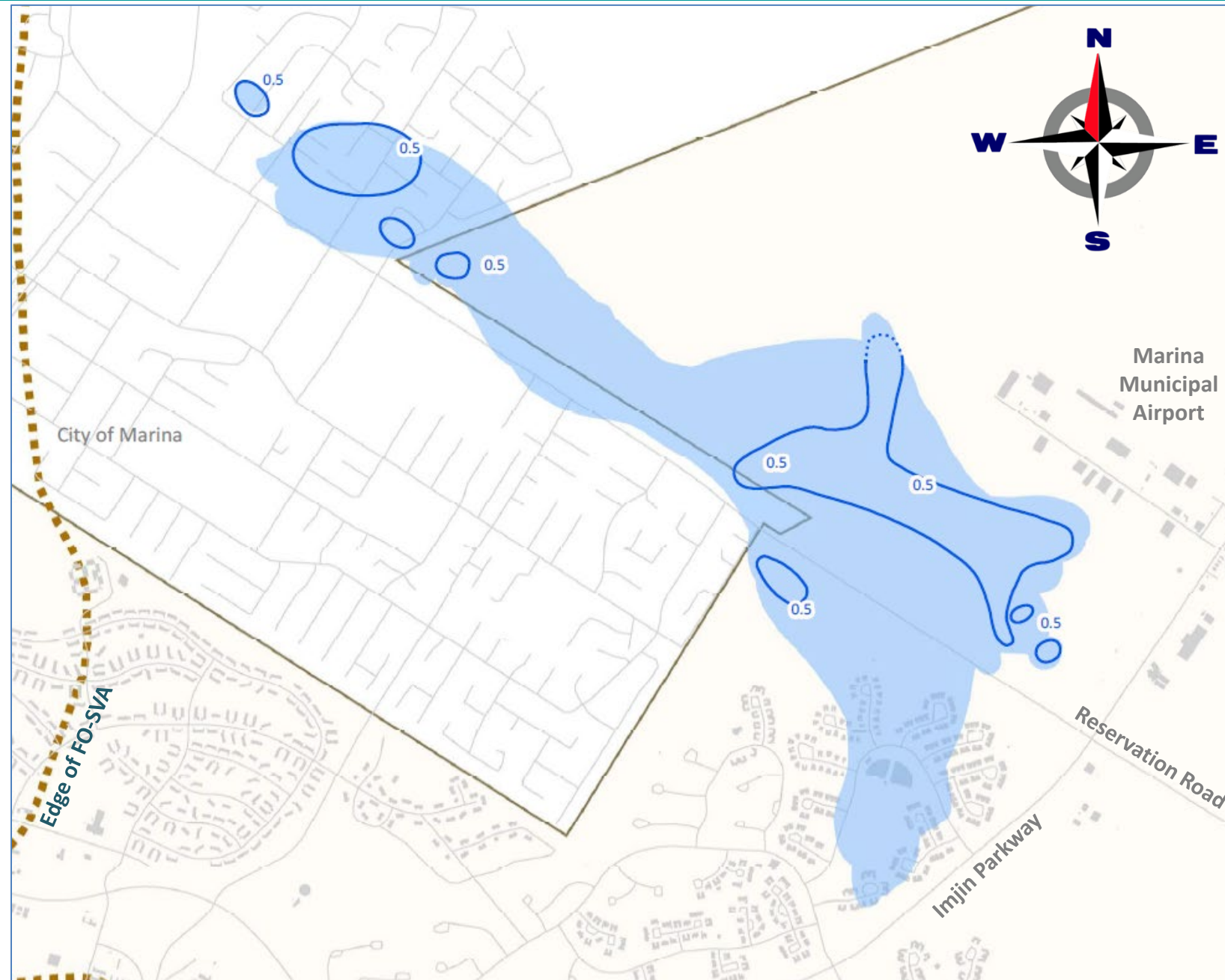




# Soil Vapor Extraction and Treatment System Schematic



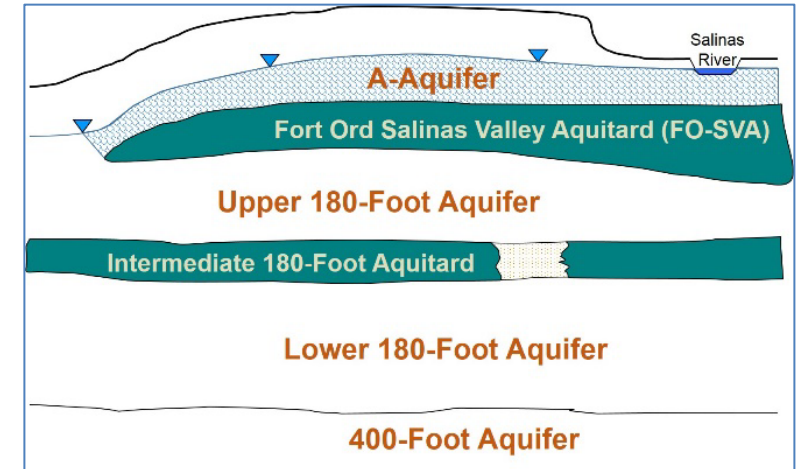
# OUCTP A-Aquifer



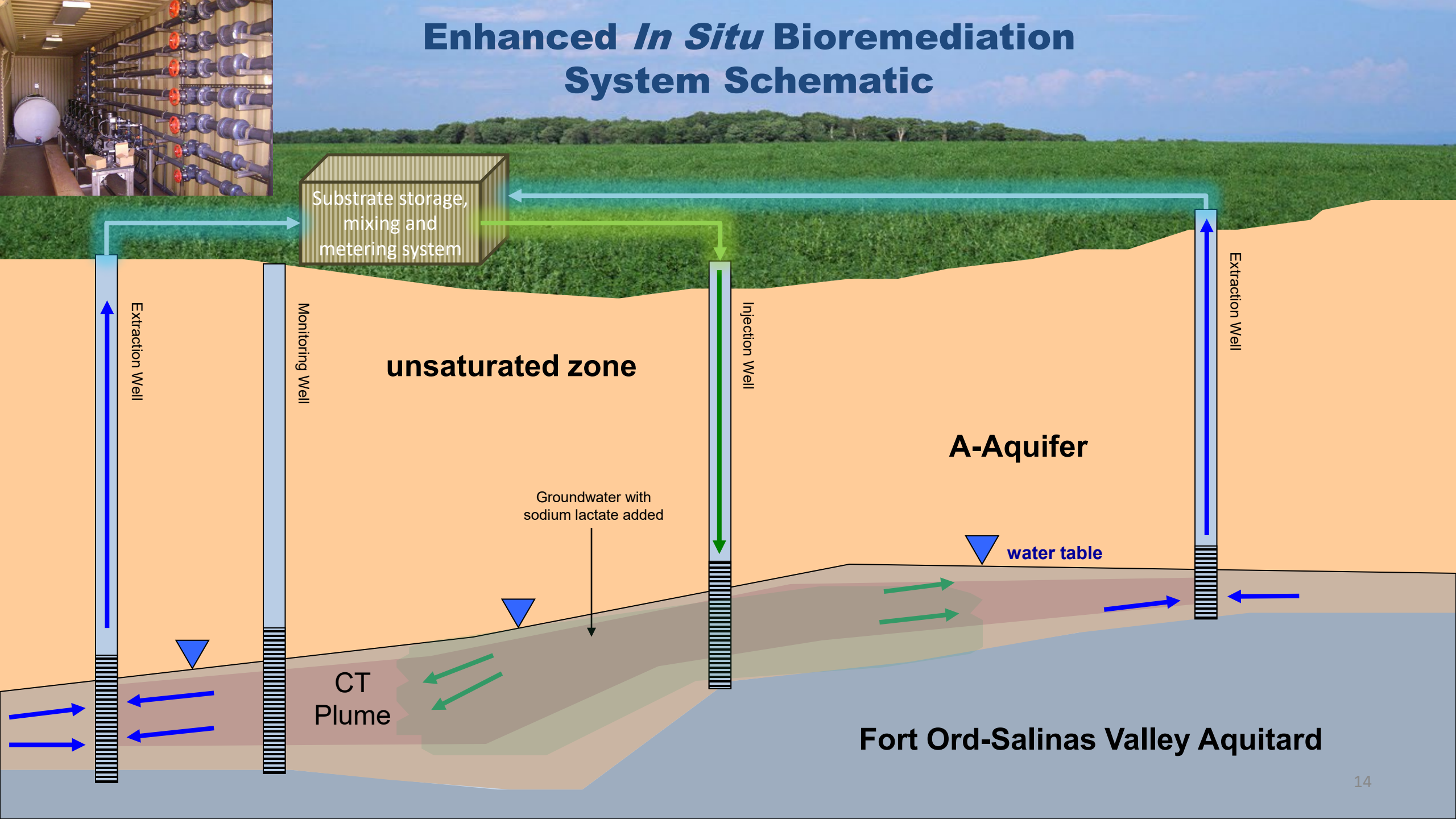
3Q2021 Chemical of Concern (COC) Aquifer  
Cleanup Level (ACL) Exceedance Contours in  
 $\mu\text{g/L}$ .

- 0.5 — Carbon tetrachloride (CT) plume extent
- 0.5 ···· 3Q2021 estimated CT plume extent
- 0.5 ■ Historical maximum CT plume extent

Remedy: Enhanced *In Situ*  
Bioremediation (EISB)



# Enhanced *In Situ* Bioremediation System Schematic



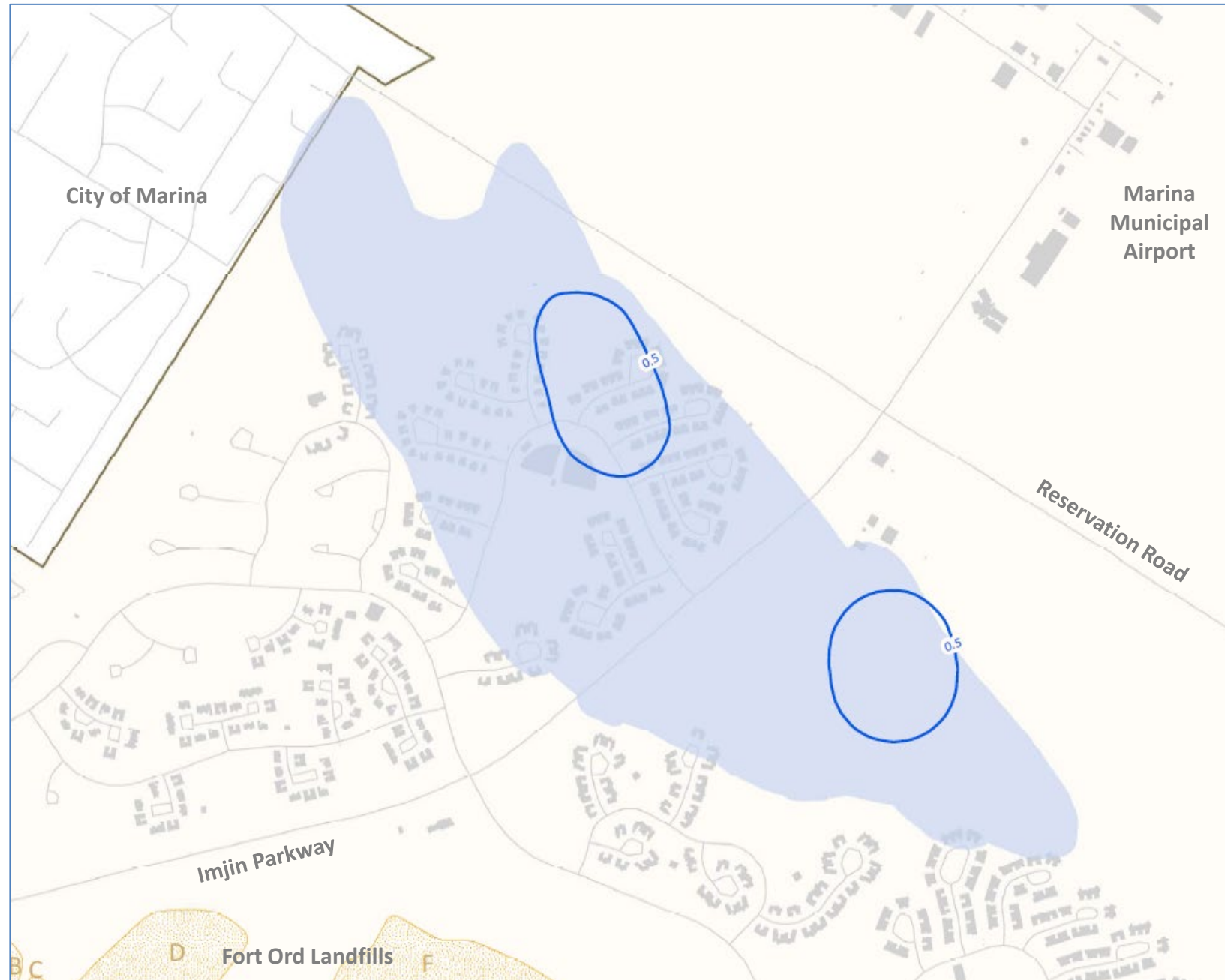


# OUCTP Upper 180-Foot Aquifer

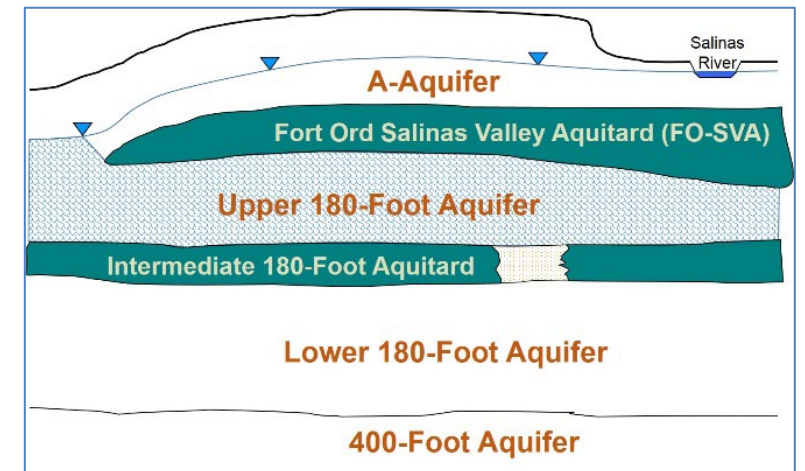
Chemical of Concern (COC) Aquifer Cleanup Level (ACL) exceedance contours in  $\mu\text{g/L}$ .

0.5 — 3Q2021 carbon tetrachloride (CT) plume extent

0.5 ■ Historical maximum CT plume extent



Remedy: Groundwater Extraction and Treatment



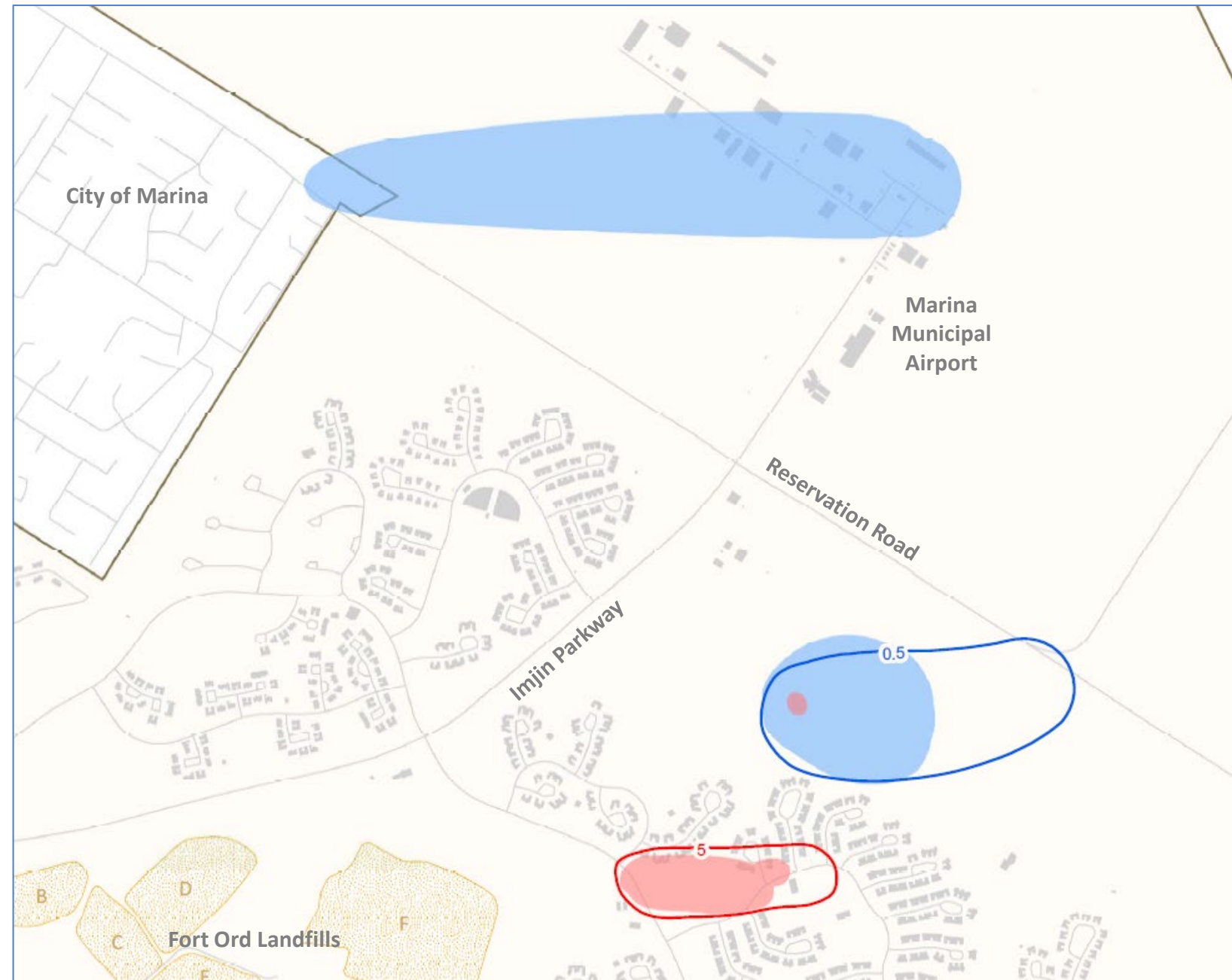
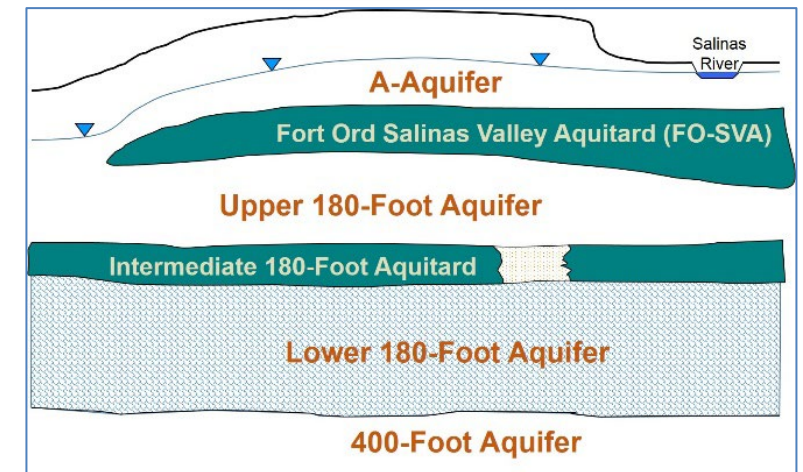
# OUCTP Lower 180-Foot Aquifer

Chemical of Concern (COC) Aquifer Cleanup Level (ACL)  
Exceedance Contours in  $\mu\text{g/L}$ .

- 0.5 — 3Q2021 carbon tetrachloride (CT) plume extent
- 5.0 — 3Q2021 trichloroethane (TCE) plume extent
- 0.5 — Historical maximum CT plume extent
- 5.0 — Historical maximum TCE plume extent



Remedy: Monitored Natural Attenuation



# For Additional Information

Visit the Army's website at:  
[www.fortordcleanup.com](http://www.fortordcleanup.com)

Visit the Fort Ord Administrative Record at:  
Building 4463 Gigling Road, Room 101  
Ord Military Community  
Seaside CA 93955  
(831) 393-9693  
[adminrecord@fortordcleanup.com](mailto:adminrecord@fortordcleanup.com)

Visit the MCWD website at:  
[www.mcwd.org](http://www.mcwd.org)

2020 Consumer Confidence Report is available at:  
[https://www.mcwd.org/docs/ccr/mcwd\\_ccr\\_2020\\_rev\\_English\\_Final.pdf](https://www.mcwd.org/docs/ccr/mcwd_ccr_2020_rev_English_Final.pdf)

