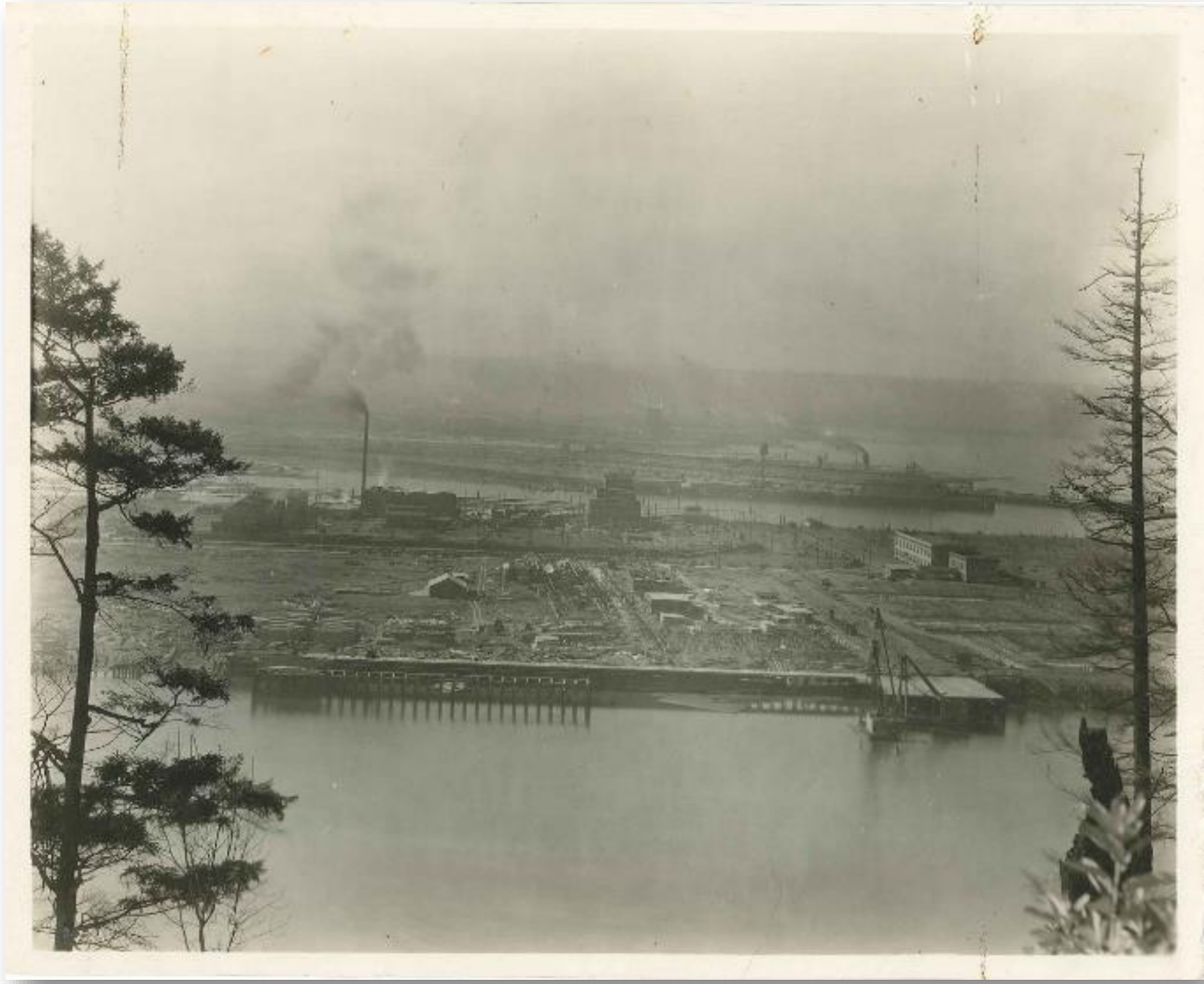
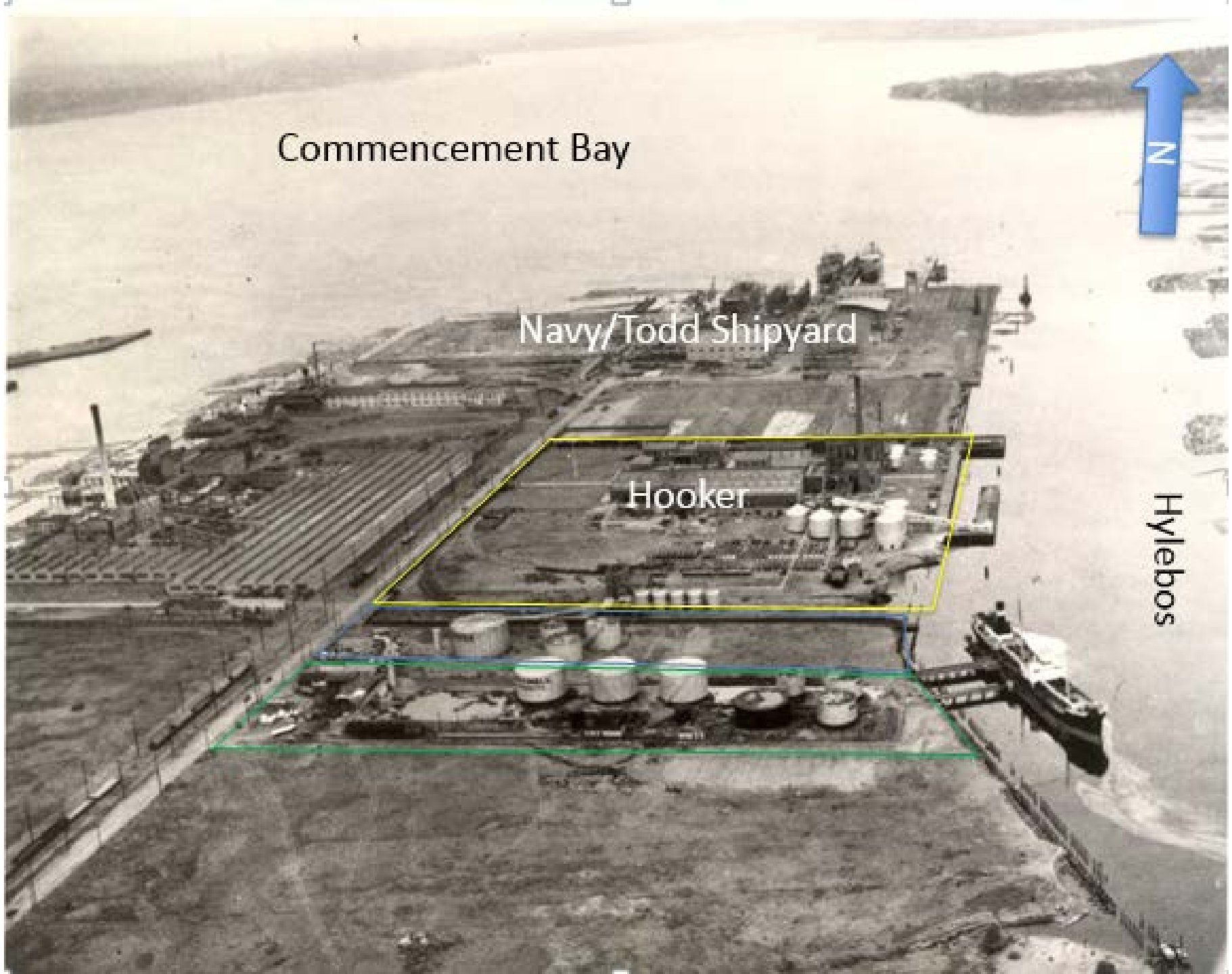
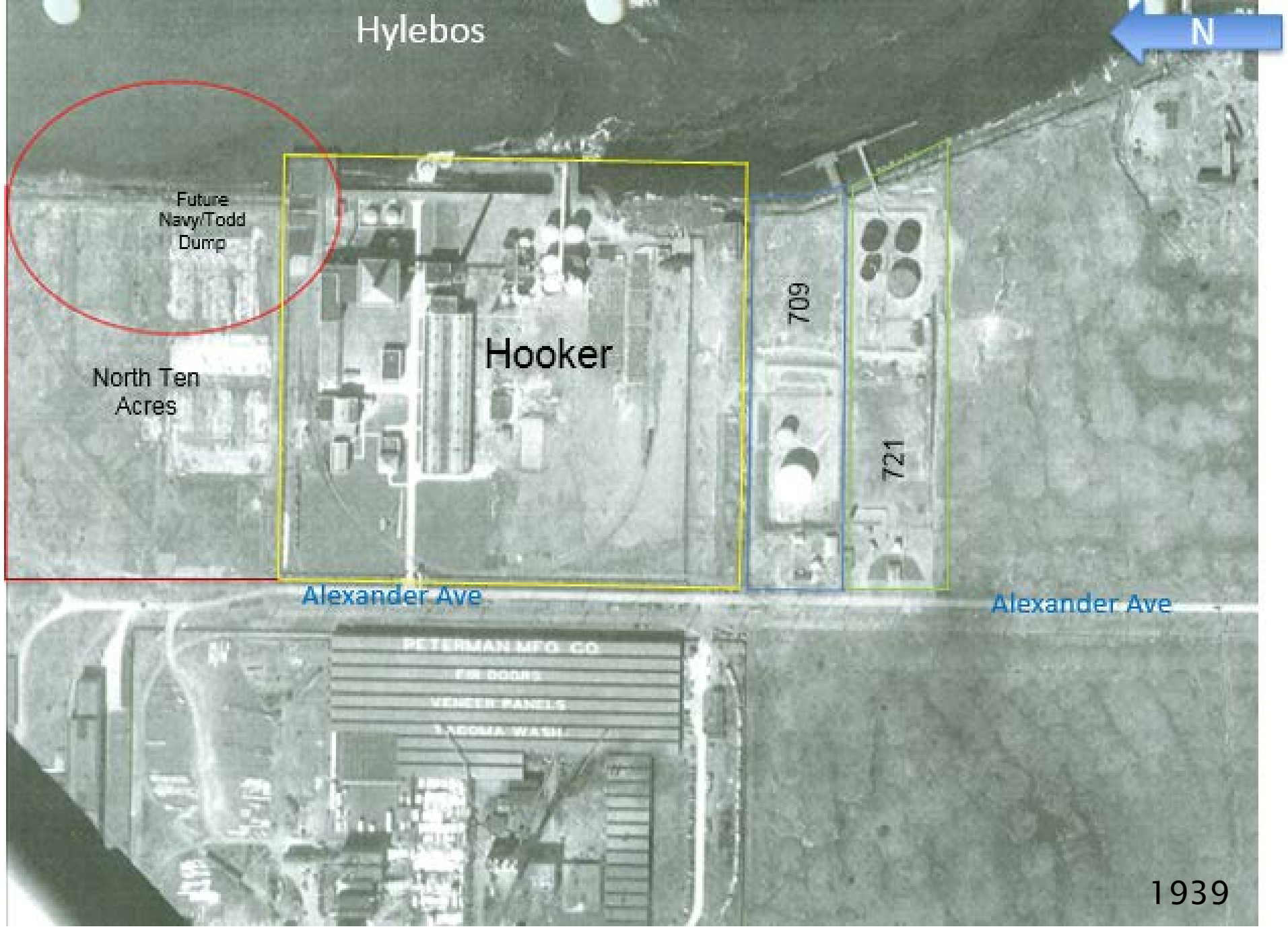
Occidental Chemical Tacoma Project


2015–2016
Remedial Investigation
Early 2017
Feasibility Study
Fall 2017
Cleanup Action Plan
2018–…
Cleanup Implemented
Continued Monitoring


N
Hylebos Waterway
Blair Waterway
Commencement Bay



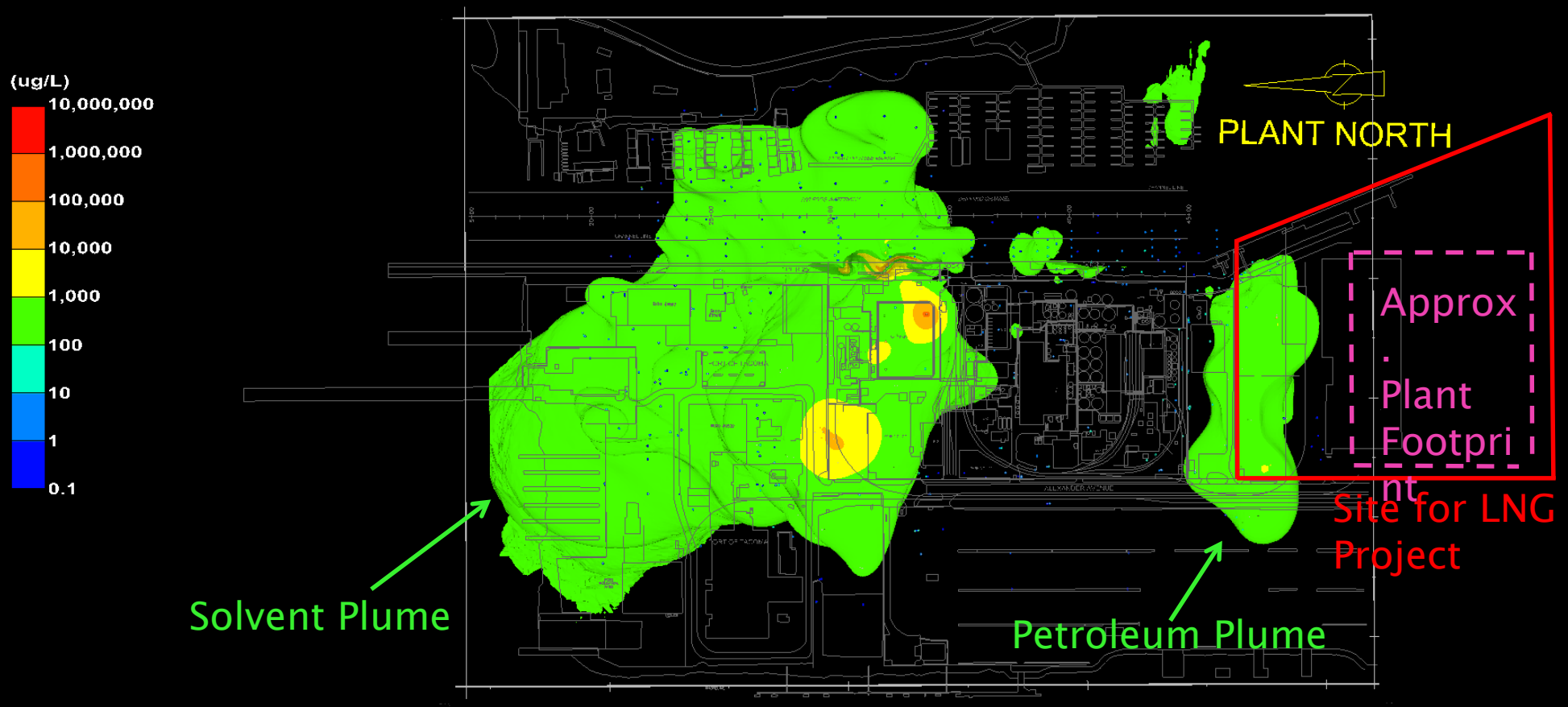

Commencement Bay
N
Navy/Todd Shipyard
Hooker
Hylebos


Hylebos
N
Future
Navy/Todd
Dump
North Ten
Acres
Hooker
709
721
Alexander Ave
Alexander Ave
PETERMAN MFG. CO
1939

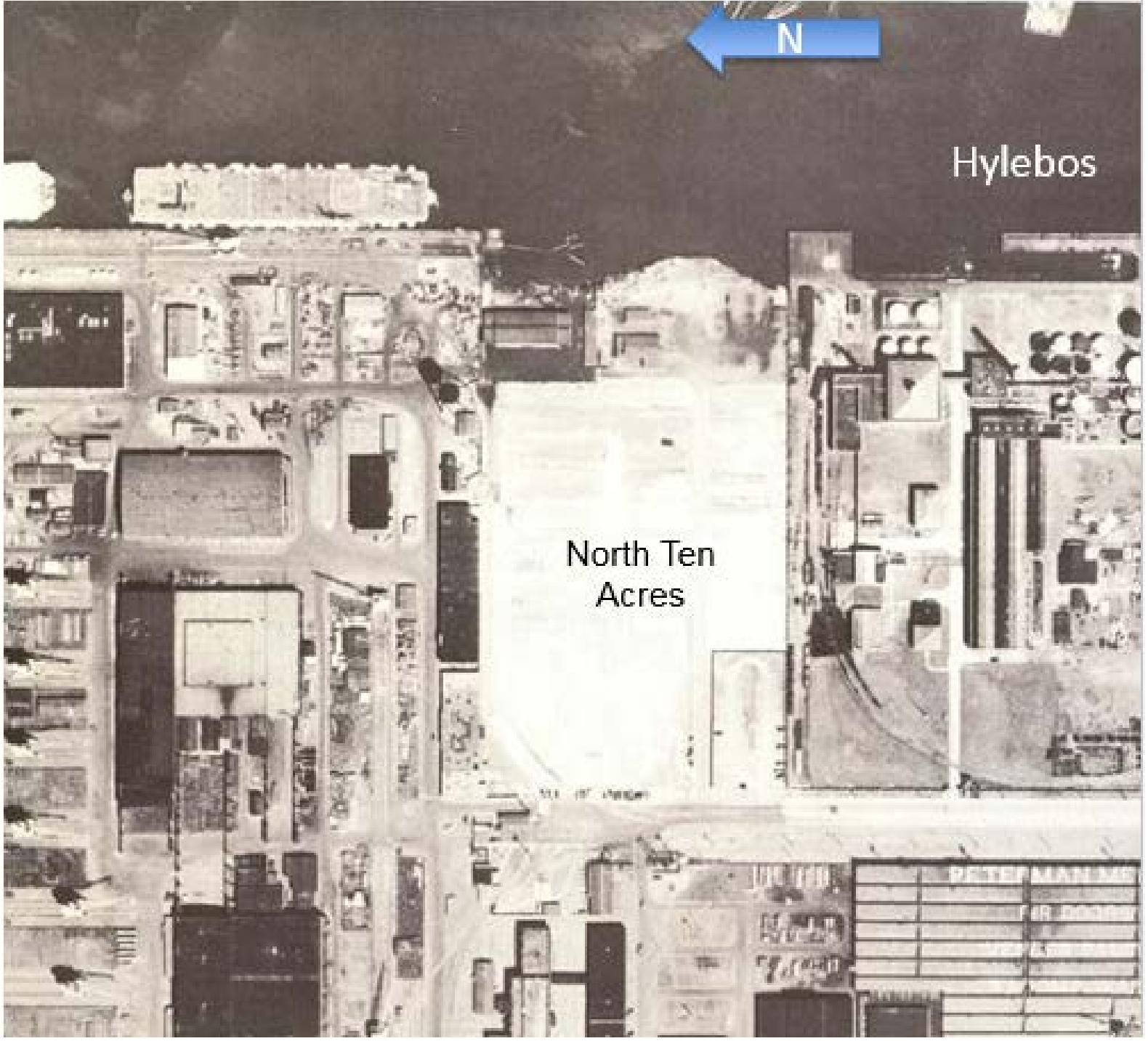
SITE CHARACTERIZATION

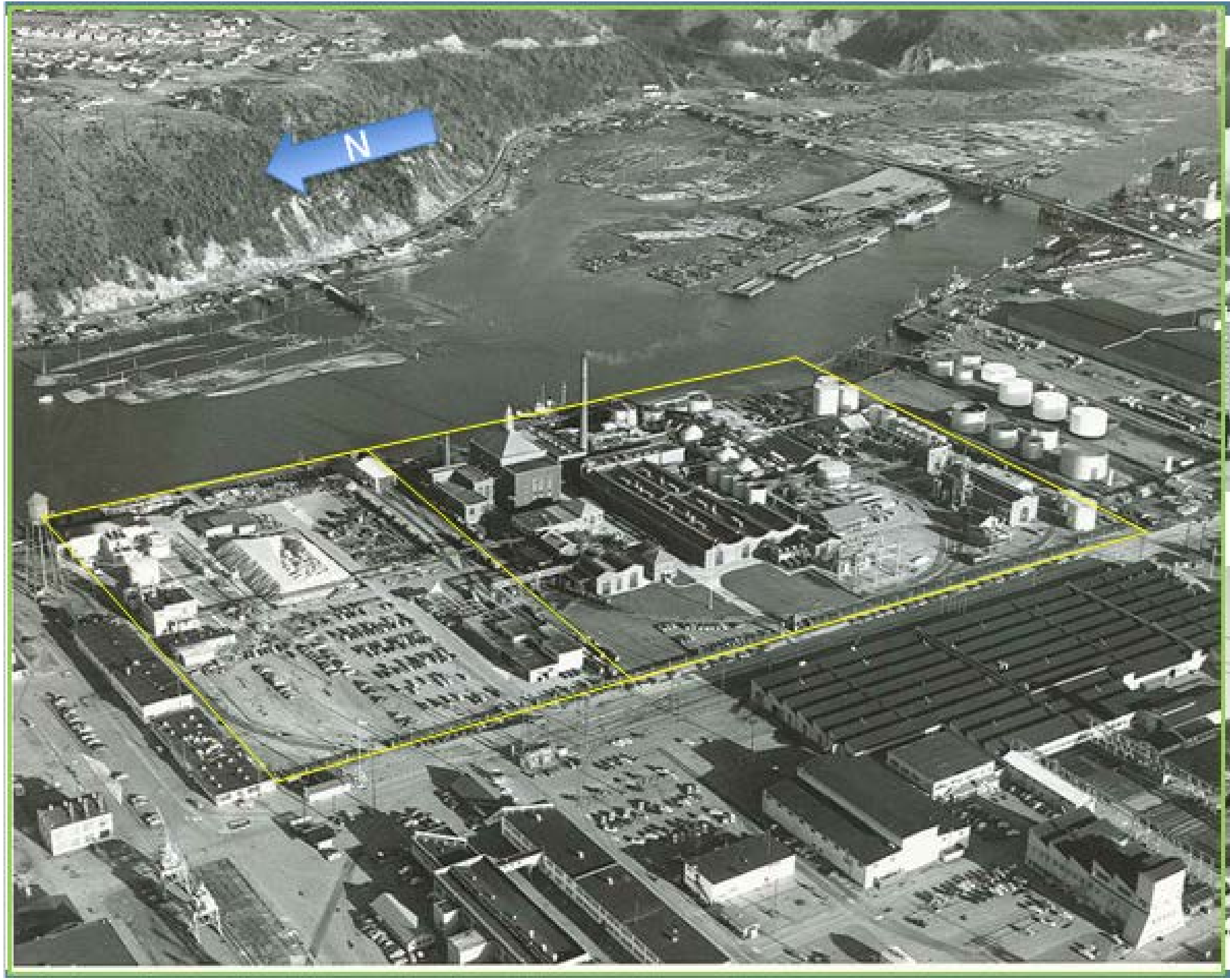
Total VOCs Comprehensive GW Plume (most recent data 2004-2013)

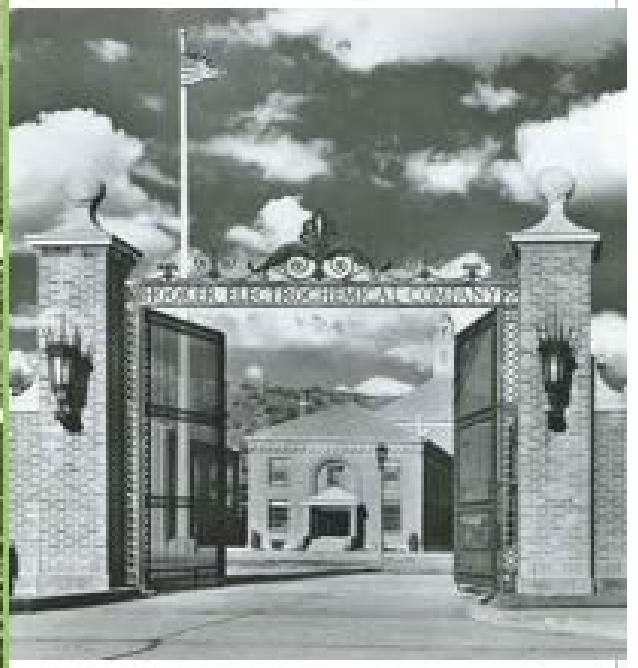
Occidental Chemical Corporation
Tacoma, Washington
2.5x Vertical Exaggeration



Plume Extent at 100.0 ug/L


N
Hylebos
North Ten
Acres


N



Historical Sources of Contamination

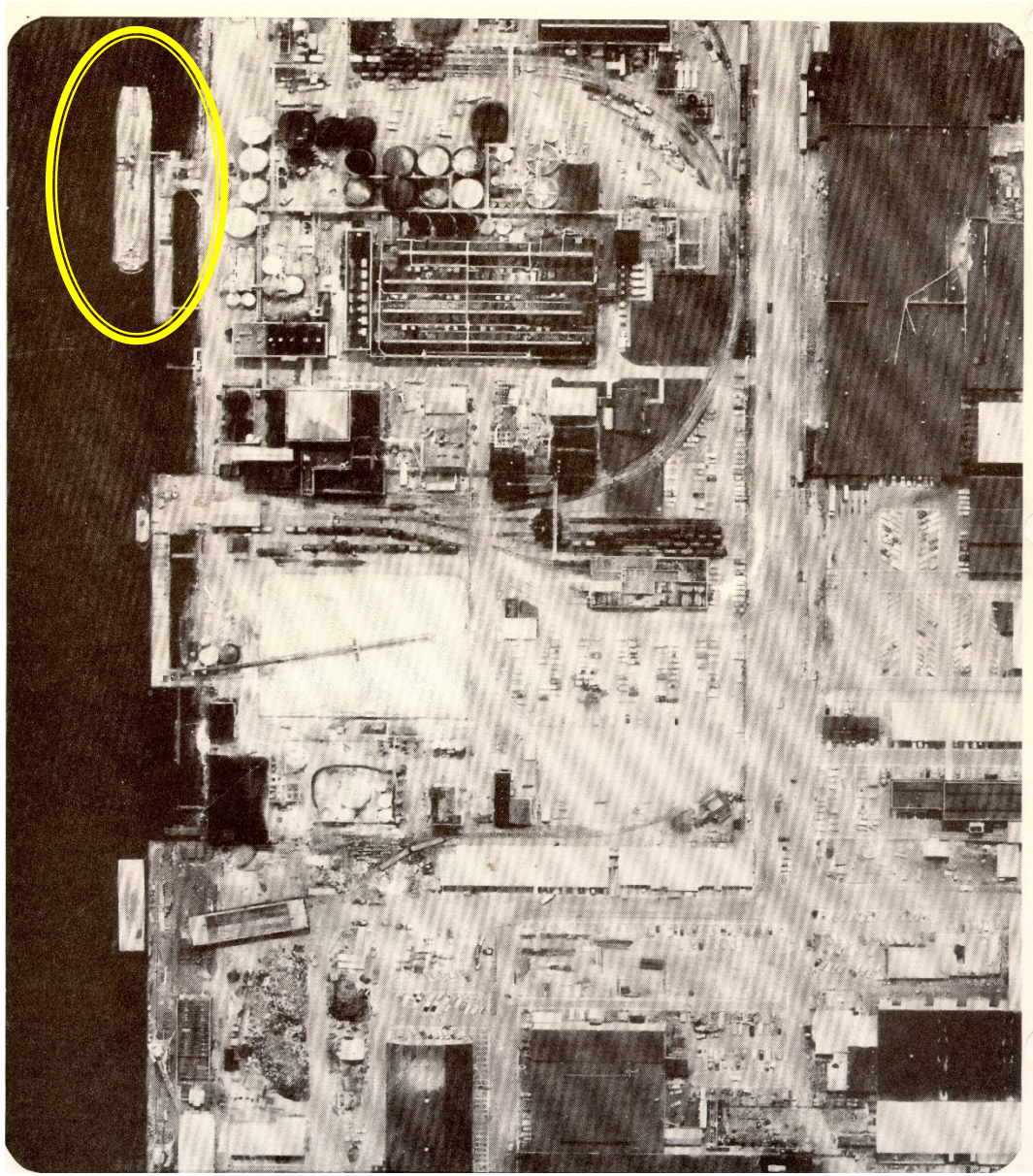
Chlorine and Caustic Soda (1929–2002)

- Salt Pad (early 1960s–2002)
- Cell Houses
- Caustic Storage
- Elevated pH and elevated density

Historical Sources of Contamination

PCE / TCE Process (1947–1973)

- Process Plant
- Lime Sludge Settling Ponds
- Lime Sludge Barge
- Effluent to Hylebos (Area 5106)
- Impacted groundwater, sediments and saturated and unsaturated soils
- Primary VOCs
- Groundwater plume extends under Hylebos Waterway




Occidental Site Post Demolition from Treatment Plant
MAR 25 2008

Historical operations as sources of contamination

- First year direct discharge
- Settling ponds
- Barges

Early source control measures

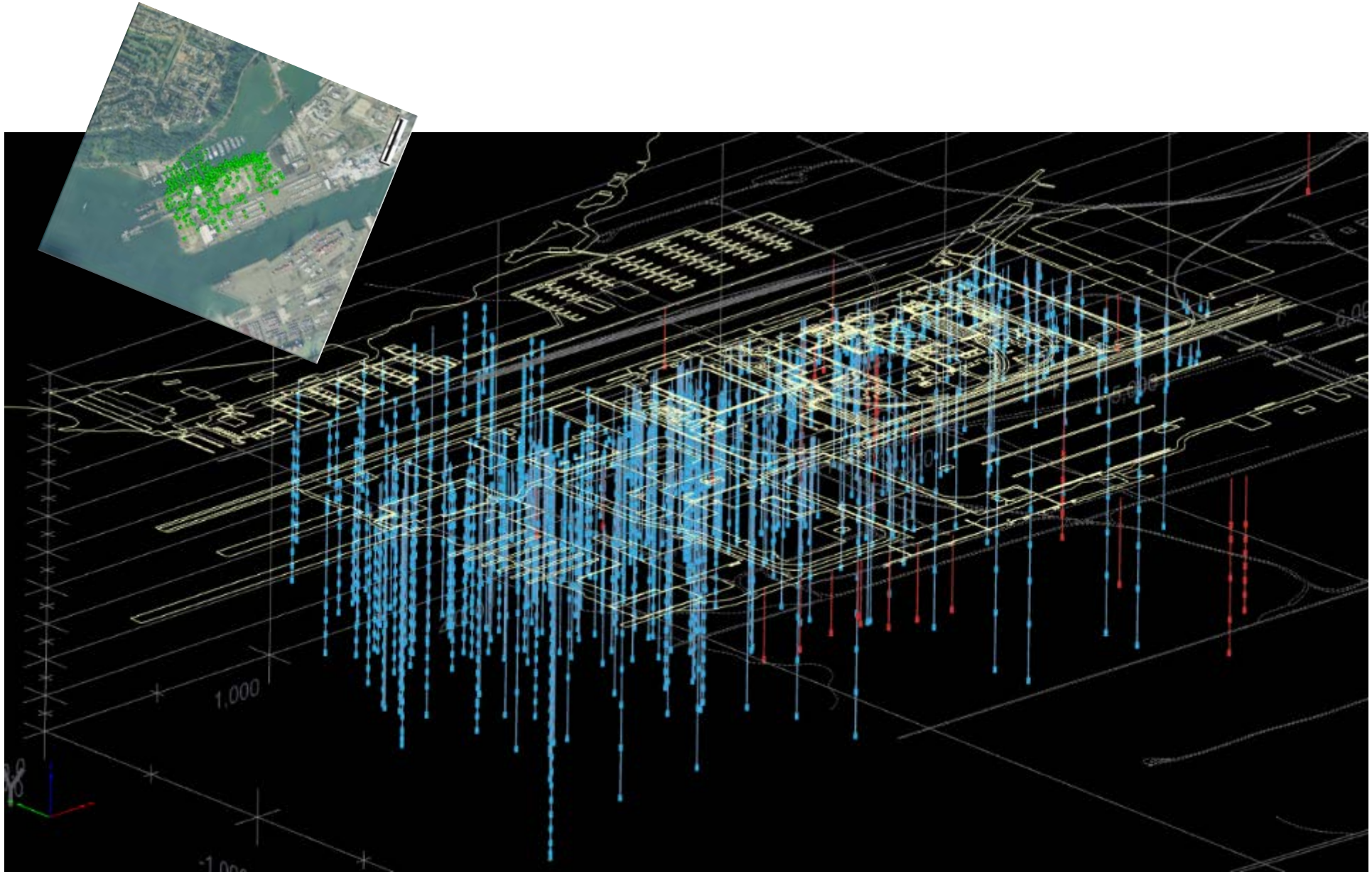
- "Closure" of waste management units
  - Surface impoundments emptied and excavated.
  - Dredged discharge/barge area along shore.

- 1996 EPA and Occidental both concluded the groundwater plume needed to be contained
  - Shallow pumping/injection groundwater well system .
  - Removed approximately 150,000 pounds of solvent.
  - This system did not contain the plume.

Solvent Loss Estimates

- 457 million pounds of solvent were produced.
- 1 million pounds lost to subsurface.

Remedial Investigation Data Points



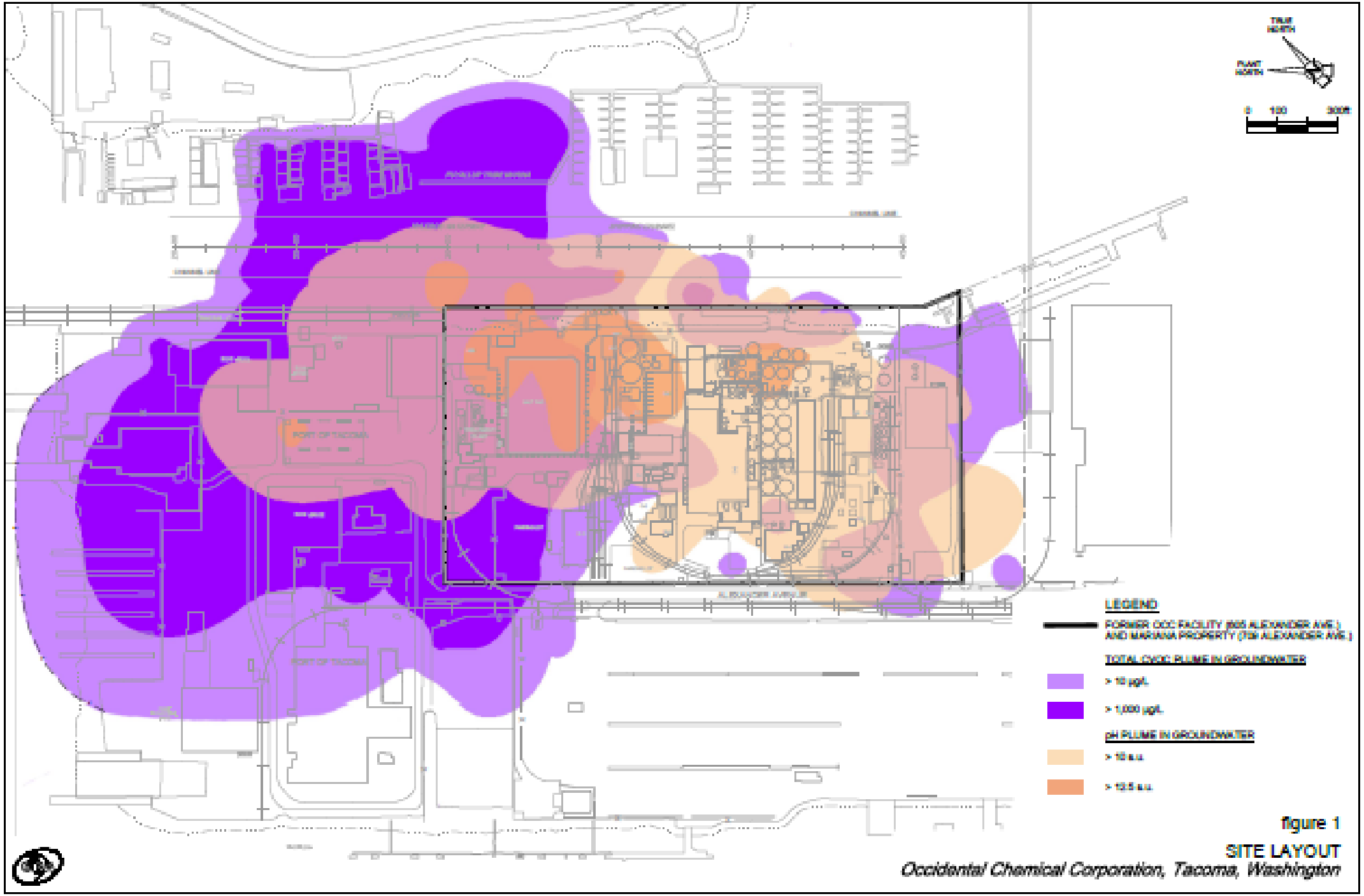


figure 1

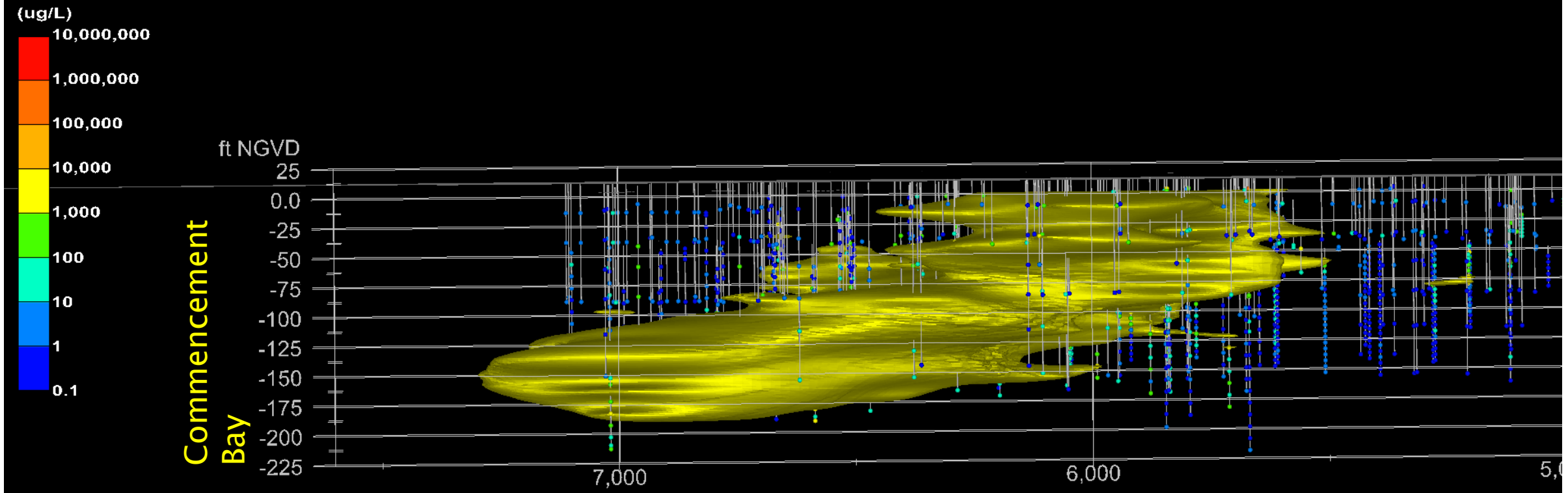
SITE LAYOUT

Occidental Chemical Corporation, Tacoma, Washington

SITE CHARACTERIZATION

Total CVOCs Comprehensive GW Plume (most recent data 2004-2013)

Occidental Chemical Corporation
Tacoma, Washington
2.5x Vertical Exaggeration



This shows the TCVOC groundwater plume in cross-section view looking to the east. The plume is about 225 feet deep at it's deepest point.

Plume Extent at 1,000.0 ug/L

SITE CHARACTERIZATION

Total CVOCs Comprehensive GW Plume (most recent data 2004-2013)

Occidental Chemical Corporation
Tacoma, Washington
2.5x Vertical Exaggeration

This shows the TCVOC groundwater plume in cross-section view looking to the east. The plume is about 225 feet deep at it's deepest point. By comparison, CenturyLink Field is about 250 feet tall.

Plume Extent at 1,000.0 ug/L

Sediment/Porewater Sampling 2016

LEGEND

- Porewater Target Location
- Sample Collection Successful
- Unsuccessful Sample Attempt
- All result intervals are non-detect for cVOCs with a MRL of 0.5 µg/L

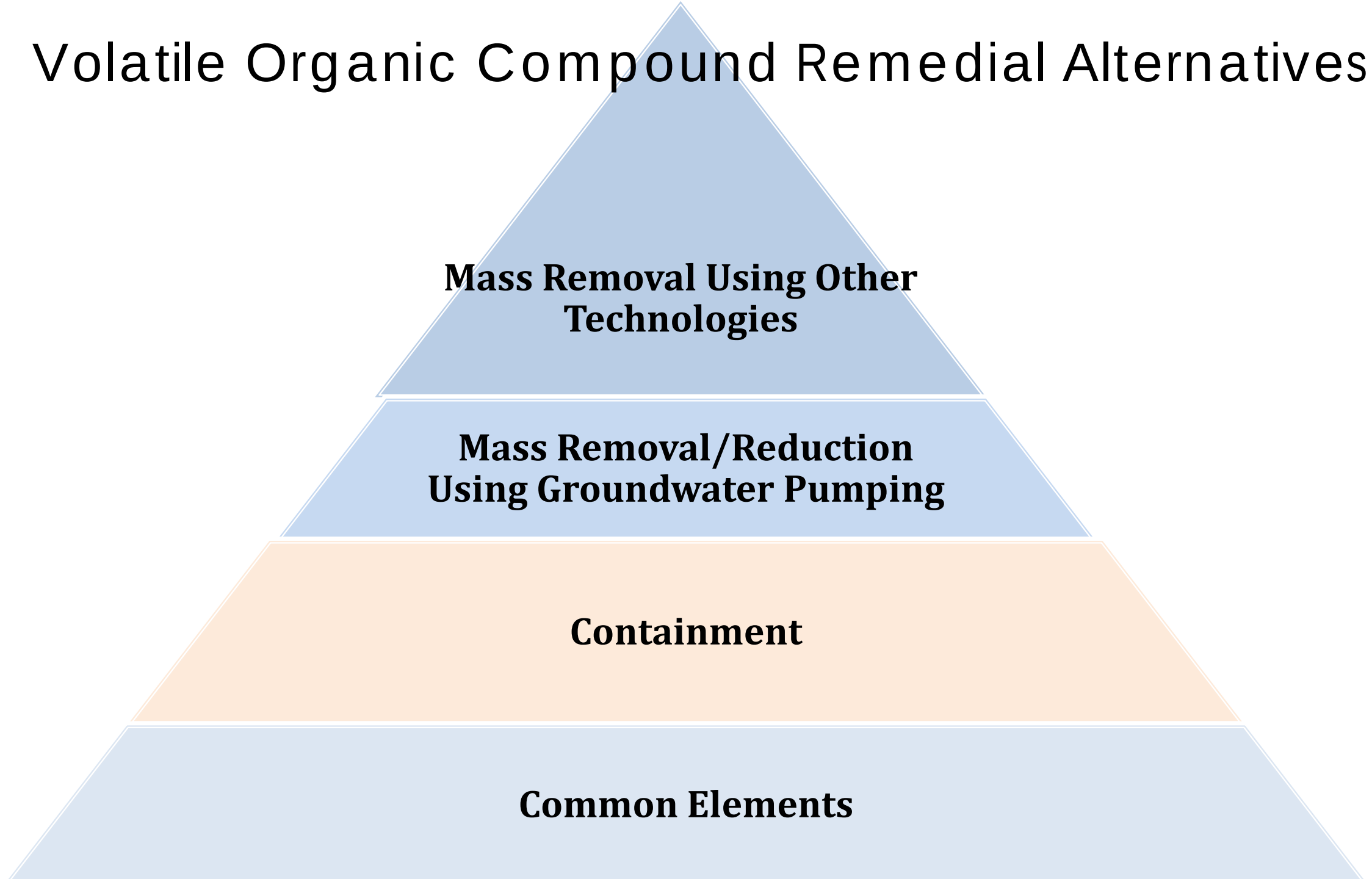
NOTES:
Sample boxes represent the depth intervals where a sample was attempted. The top box represents the 10cm depth, then next box down represents the 30cm depth and the final box the 90cm depth.

Feet
0 150 300 450 600

Additional Draft Documents for Review

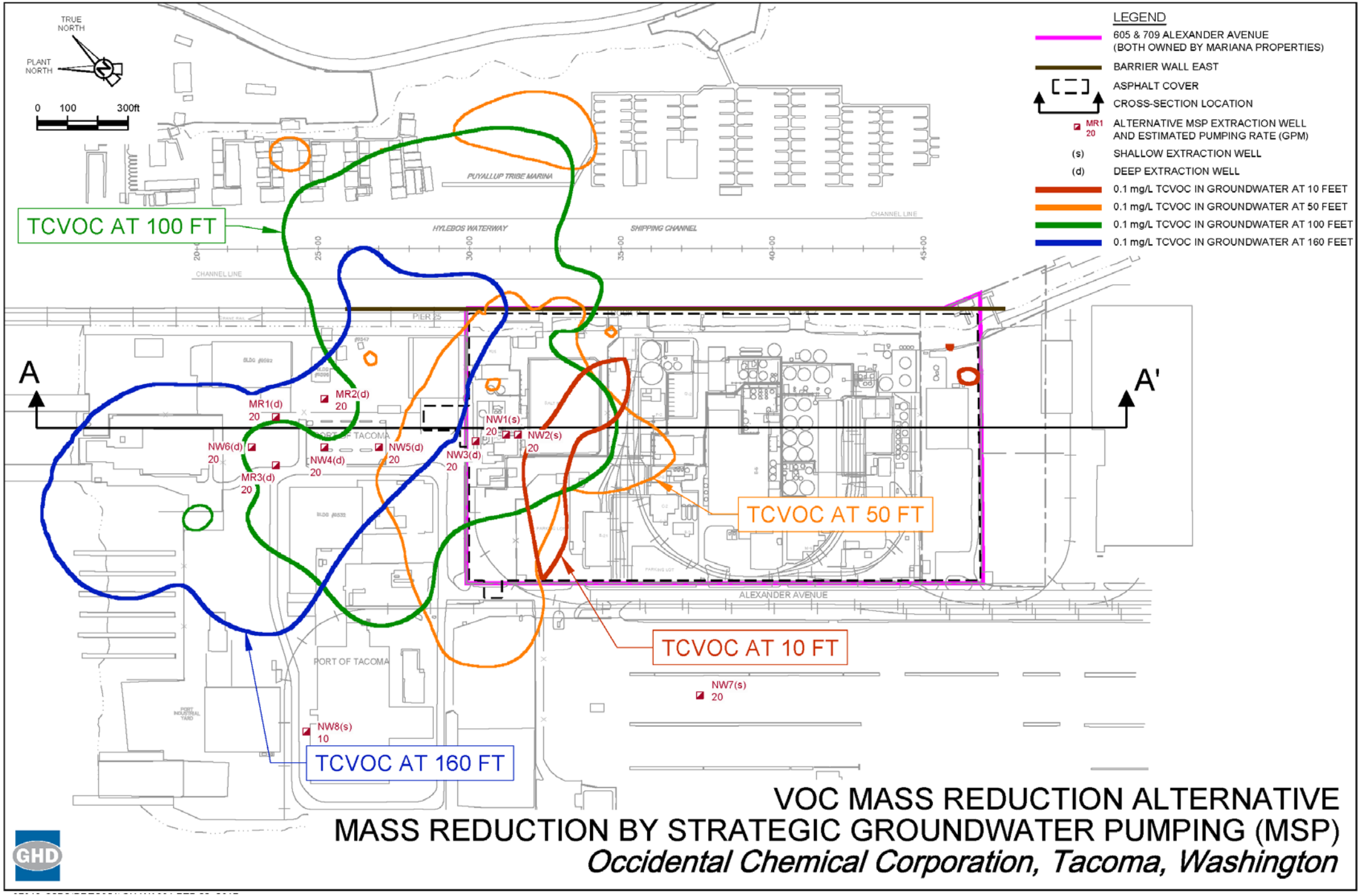
- Vapor Intrusion Investigation Reports
- Sediment/Porewater Report
- pH Study by the University of Washington
- Draft Agreed Order under the Model Toxics Control Act
- Draft permit

Volatile Organic Compound Remedial Alternatives



Feasibility Study Report

- Contains the required range of technologies for Ecology's consideration
- Includes seven alternatives with 4 enhanced scenarios
- Includes the required Disproportionate Cost Analysis
- Proposes Occidental's Preferred Alternative



VOC MASS REDUCTION ALTERNATIVE
MASS REDUCTION BY STRATEGIC GROUNDWATER PUMPING (MSP)
Occidental Chemical Corporation, Tacoma, Washington