Welcome to the Online Kaiser Public Meeting!

Audio Check

- The presentation will start soon. The host is talking.
- You will be muted until the end of the presentation.
- Please let us know through chat if you cannot hear the host.

Connecting to Audio

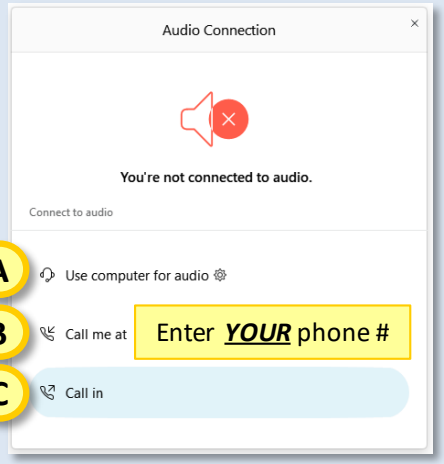
Please connect your audio.

1 ➡ 2 ➡ 3

1 **Move your cursor to the bottom of your screen to show Webex controls.**

2 **Select "Connect to Audio" icon.**

3 **Select Audio Connection**



3 Options

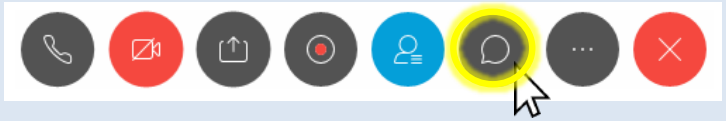
If you select C "Call in"

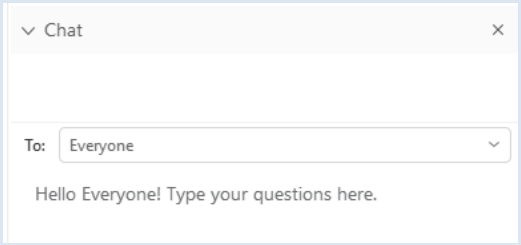
- Call US Toll: +1-415-655-0001 **--OR--**
- Call U.S. Toll (Seattle): +1-206-207-1700
- Enter Webex-generated codes followed by "#"

NOTHING WORKING? Send the host a message via chat.

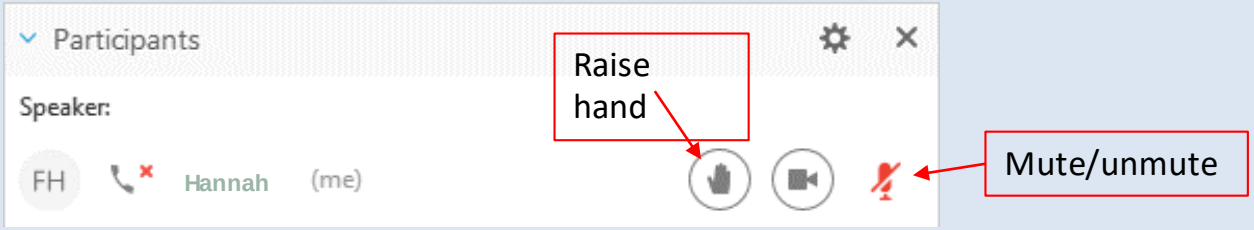
Participating in the Meeting

You can communicate via the chat function.



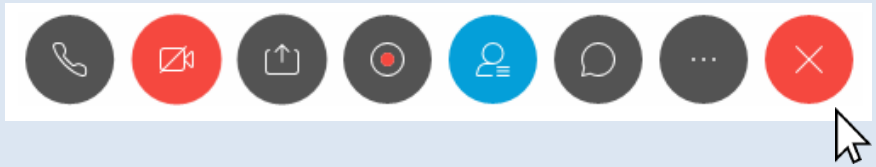


Everyone is muted during the presentation. Please use the raise-hand function during the Q & A session.



Leaving the Meeting

Click the red ‘X’ button.



Webex Info

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- We will answer all questions at the end, but feel free to chat questions anytime.
- If you can't hear the presentation, inform the host through chat.
- Slides are posted on our website.

Kaiser Trentwood Cleanup
Interim Action for Groundwater

Jeremy Schmidt, P.E., Site Manager
(509) 329-3484, jeremy.schmidt@ecy.wa.gov

Toxics Cleanup Program
Eastern Region

DEPARTMENT OF ECOLOGY
State of Washington

Kaiser Trentwood Site
Spokane Valley

Brief Site History

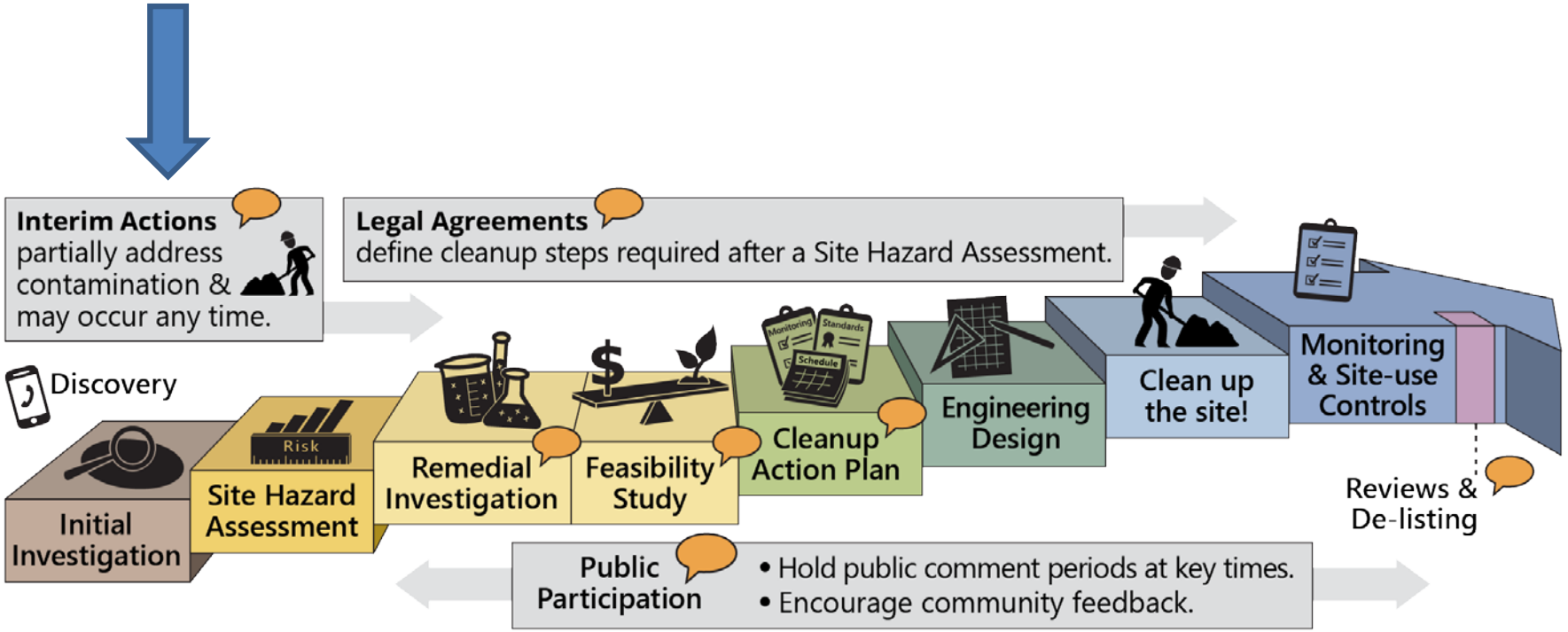
- Incorporates about 60 acres
- Built by DOD - rolled aluminum for WWII
- After WWII, rolling mill sold to Kaiser
- Produces aluminum for aerospace industry
- Use of PCB-containing oils and other chemicals and fuel resulted in several contaminated areas and media

DOD – Department of Defense, WWII – World War II,
PCB – polychlorinated biphenyl

Location and Geology

- West of Sullivan
- South of Trent
- Spokane River to the West and South
- Over the SVRP Aquifer
- 60 feet to groundwater
- Mostly gravel and cobble from surface to water

Steps in a Formal Cleanup

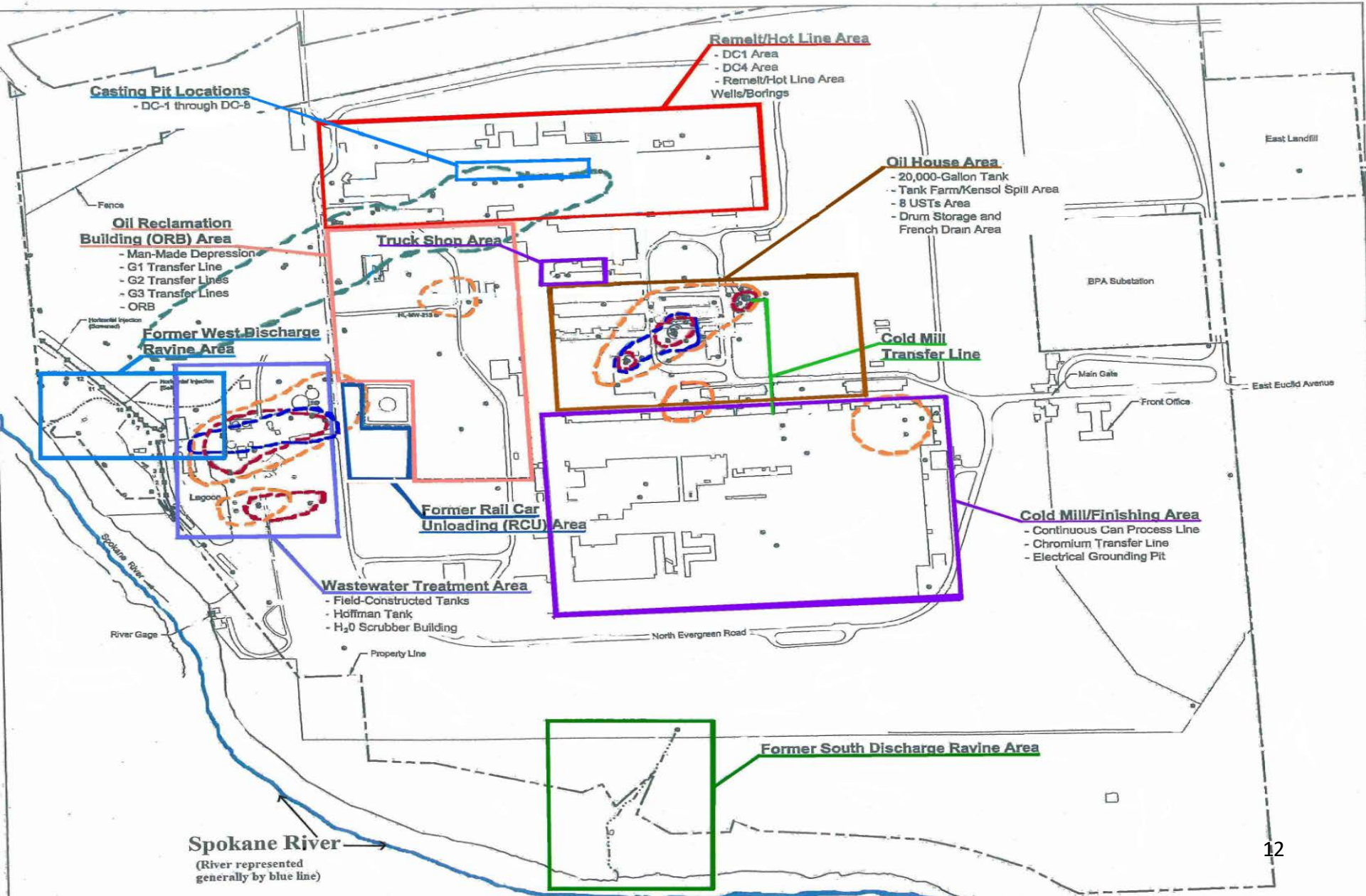


Agreed Order No. 2692 Overview

- Initial Agreement – August 15, 2005
  - Required completion of Remedial Investigation/Feasibility Study (RI/FS)
- Amendment No. 1 – September 26, 2012
  - Excavate contaminated soil in multiple locations and dispose off-site
  - Clean up petroleum in groundwater in applicable areas
  - Cap contaminated soil in multiple locations
  - Excavate soils contaminated with PCBs and petroleum in the West Discharge Ravine and dispose off-site
  - Evaluate the practicability of removing PCBs from extracted groundwater using an ex-situ walnut-shell filtration treatment system

PCBs – polychlorinated biphenyls

Areas of Concern from RI/FS



Completed Interim Action Soil Cleanup Work

- Removed top 20 feet of soil in contaminated areas:
  - Off-site disposal in 8 areas, including West Discharge Ravine (twice) and South Discharge Ravine
- Contaminated soil below 20 feet (7 areas):
  - Containment (delineation, capping, covenant)
  - Monitoring
  - Natural attenuation

Excavating contaminated soil from the West Discharge Ravine near the Spokane River

Capping upper portion of the West Discharge Ravine

Excavating contaminated soil near the facility

Installing cover system over areas with deeper contamination

Installing cover system near wastewater treatment plant

Preparing to replant an area where contamination was removed

Completed and Ongoing IA Groundwater Cleanup Work

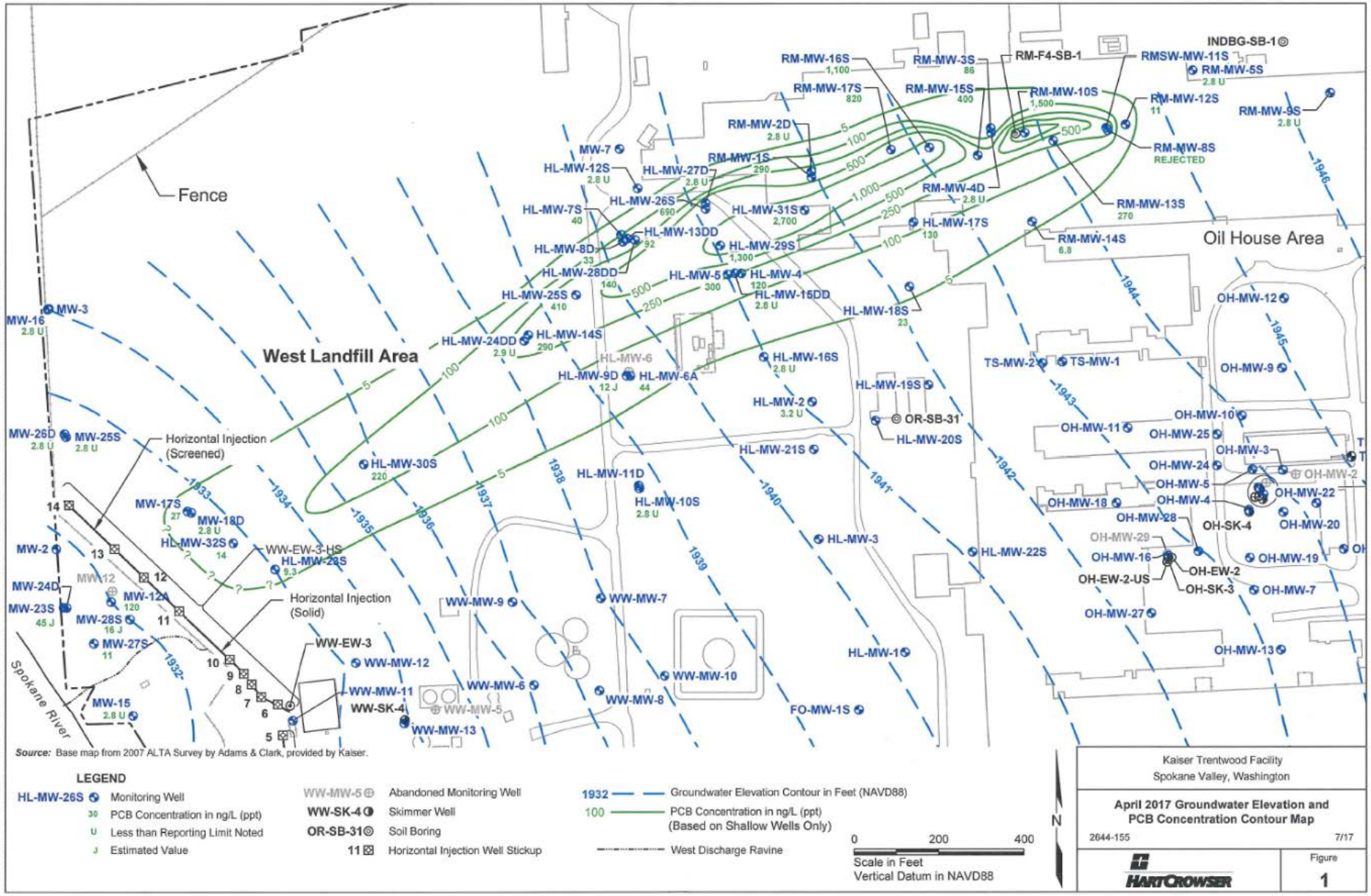
Petroleum plumes and smear zones:

- Institutional controls
- Monitoring
- Natural attenuation
- Containment (pumping)
- Free product removal

PCB plume from remelt area:

- Institutional controls
- Monitoring
- Natural attenuation
- Containment (pumping)
- Pump and treat pilot study

IA – interim action, PCB – polychlorinated biphenyl



Remelt PCB Plume

Walnut-Shell Pilot System

What have we learned about treatment technologies?

- Walnut-shell filtration removes 70+% of PCBs
  - Backwash water management difficult
  - Removal, not destruction
- Algae pilot removed 89% of PCBs from backwash
  - Removal, not destruction; algae/PCB waste to landfill
  - *If* amenable to high flows, directly treat groundwater?
- Solvent extraction and zero-valent metal destruction
  - Bench-scale pilot on backwash: 80% removal, 90% destruction
- Treated water discharge pipe undersized
- Full-scale treatment will require large throughput to meet cleanup levels and be protective of the river

PCBs – polychlorinated biphenyls

One last look at treatment technologies

UV/AOP has potential to destroy 95% of PCBs

- **Destruction**, not removal; no waste products
- Potentially capable of high flows (one million gallons per day+ range)
- Successfully used at wastewater treatment plants, mainly for disinfection
  - Add H_2O_2 for higher PCB-destruction efficiencies
- Bench-scale tests underway
- Pilot-scale test (50+ gpm) in planning stages

UV/AOP – ultraviolet/advanced oxidation process,
PCBs – polychlorinated biphenyls, gpm – gallons per minute

AO Amendment No. 2 – Phase 1

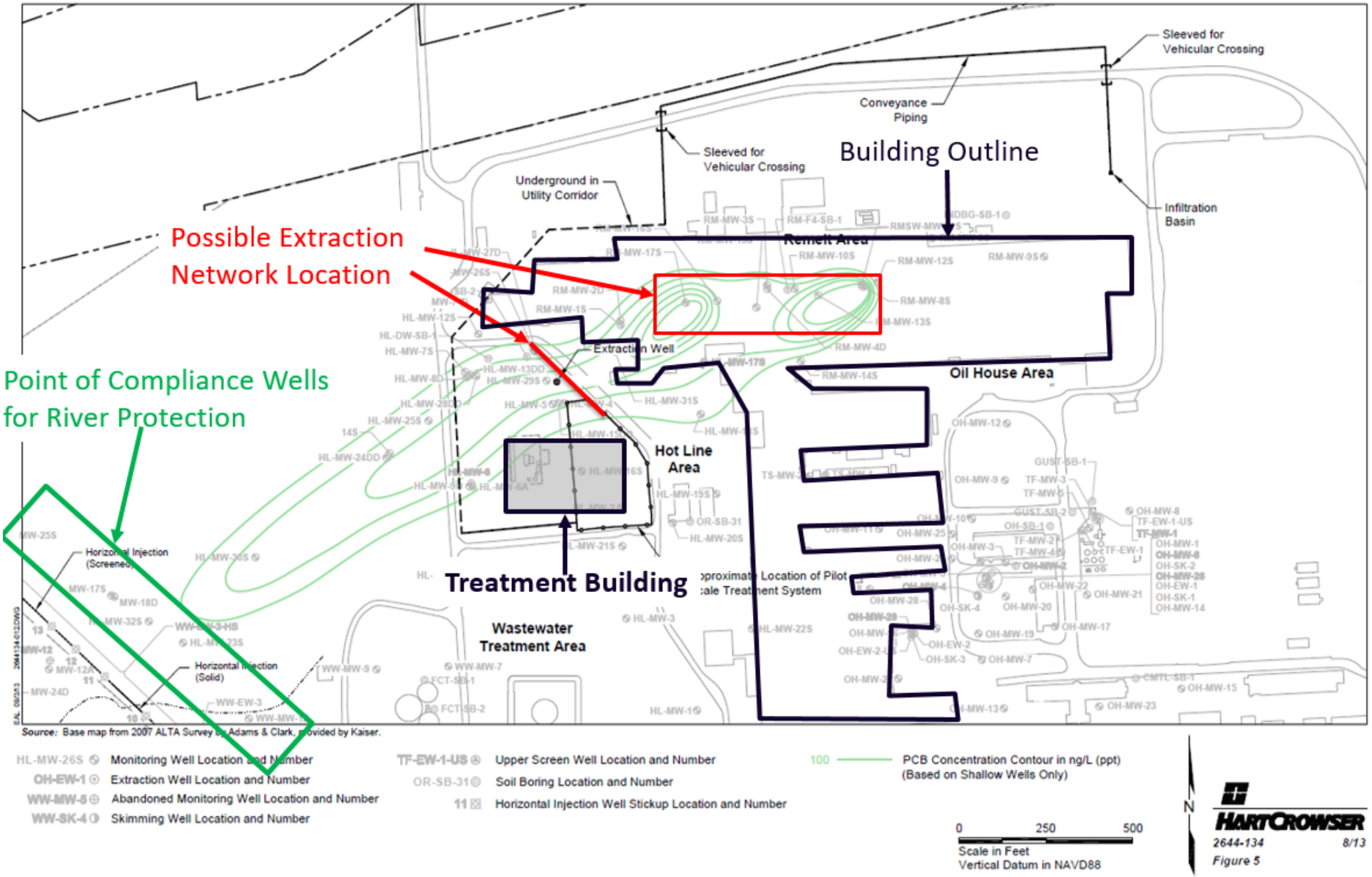
- Model and install **final groundwater extraction network** capable of cutting off the plume and achieving river protection
- Increase size of treated water discharge pipe
- Continue operating walnut-shell filtration system; increase to ~50 gpm
- Pilot test other technologies, as appropriate
  - Algae, solvent/zero-valent metal destruction
- Pilot UV/AOP on extracted groundwater (50+ gpm); increase size of pilot test building

AO – agreed order, gpm – gallons per minute,
UV/AOP – ultraviolet/advanced oxidation process

AO Amendment No. 2 – Phase 2

- **Complete full-scale implementation** of the most successful technology
- Require extraction rates that achieve Spokane River protection
- Evaluate performance

Pilot-Scale Treatment System Location Plan



Benefits of Interim Action Process

- Shorter timeframe to begin full-scale remedy
- More flexibility in technology application at both full-scale implementation and at full-scale remedy evaluation (Cleanup Action Plan)
- Estimated PCB removal of pilot tests = ~160mg/day
  - Full-scale will achieve a higher removal rate

PCB – polychlorinated biphenyl, mg – milligrams

Estimated Schedule

- Implement Phase 1 Interim Actions
  - Within 18 months after Amended Agreed Order effective date
- Implement Phase 2 Interim Action – Full-scale cleanup
  - Approximately 12 months after completing Phase 1

Public Comment Period

- AAO, scope of work, and SEPA documents
  - February 24 to April 22; Meeting April 8
- Website and fact sheet list ways to comment
  - Online through our eComment system
  - Email
  - U.S. mail
- After public comment period, Ecology will:
  - Respond to all comments via published Response to Comments document
  - If necessary, modify the draft documents based on public input and hold another public comment period
  - Finalize the documents and proceed with the proposed work

More Information

- Web page
  - https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=7093
  - Access this presentation and all draft documents
- Fact sheet
- Contact us!
  - jeremy.schmidt@ecy.wa.gov
    509-329-3484
  - erika.beresovoy@ecy.wa.gov
    509-329-3546

Toxics Cleanup Program

DEPARTMENT OF ECOLOGY State of Washington

Kaiser Aluminum & Chemical Corporation Trentwood Facility

Ecology proposes to evaluate new technologies for treating groundwater contamination from the Kaiser Trentwood facility.

Comments accepted:
February 24 – March 24, 2020

Submit comments:
Online at:
http://cs.ecology.commentinput.com/?id=aTuF8
Or by mail or email to:
Jeremy Schmidt, Site Manager
4601 North Monroe Street
Spokane, WA 99205
jeremy.schmidt@ecy.wa.gov

Document review locations:
https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=7093

Spokane Valley Public Library
12004 East Main Avenue
Spokane Valley, WA 99206
Phone: 509-893-8400
Hours: M-Th. 10 a.m.–9 p.m., Fri. – Sat. 10 a.m.–6 p.m., Sun. 1–5 p.m.

Washington Dept. of Ecology
4601 North Monroe Street
Spokane, WA 99205
Phone: 509-329-3415
Hours: Monday – Friday, 8 a.m. – 5 p.m. (by appointment)

Facility Site ID: 53481373
Site Cleanup ID: 7093

Public invited to comment on draft amended legal agreement and State Environmental Policy Act documents to test groundwater treatment options

The Washington State Department of Ecology (Ecology) seeks your input on the following draft documents for the Kaiser Aluminum & Chemical Corporation (site) February 24 through March 24, 2020:

- Amendment to Agreed Order No. 2692 — updated legal agreement requiring the parties responsible for cleanup to evaluate new technologies for treating polychlorinated biphenyls (PCBs) in groundwater
- State Environmental Policy Act (SEPA) documents — we have reviewed the interim actions using the SEPA checklist, and decided they won't adversely affect people or the environment

Site history

The Kaiser Trentwood facility produces aluminum sheet, plate, and coil for aerospace and general engineering applications.

The federal government built the facility during World War II, and it first produced aluminum sheet in 1943. After the war ended, the facility was sold to private interests and has processed aluminum since.

Materials used in past aluminum production included PCB oil, petroleum fuels, solvents, and chromium. Wastes generated as a result of past or present operations are wastewaters, chrome sludge, paint and solvent wastes, and black dross. Kaiser is responsible for cleanup.

Cleanup completed thus far

Kaiser has completed many interim cleanup actions, including removing petroleum on groundwater and excavating or capping contaminated soil.

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Questions?

- We will stop recording.
- First, we will answer questions queued in chat.
- Then, raise your hand to ask a question. The host will unmute you.