# Pacific Wood Treating
# Port of Ridgefield
# Neighborhood
# Soil Dioxin Study

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**Community Meeting**
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# Presentation Outline

- What do we know about dioxins?
- What do we need to find out?
- How will we study dioxins in Ridgefield?
- What will we do next?
- What can you do?

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# Pacific Wood Treating


- Operated from 1964 – 1993
- Hazardous chemicals found included:
  - Pentachlorophenol
  - Copper, chromium, and arsenic (CCA), and zinc
  - Polycyclic aromatic hydrocarbons (PAHs)
  - Dioxins
- Dioxins were the only chemical found in the residential area on public right-of-ways

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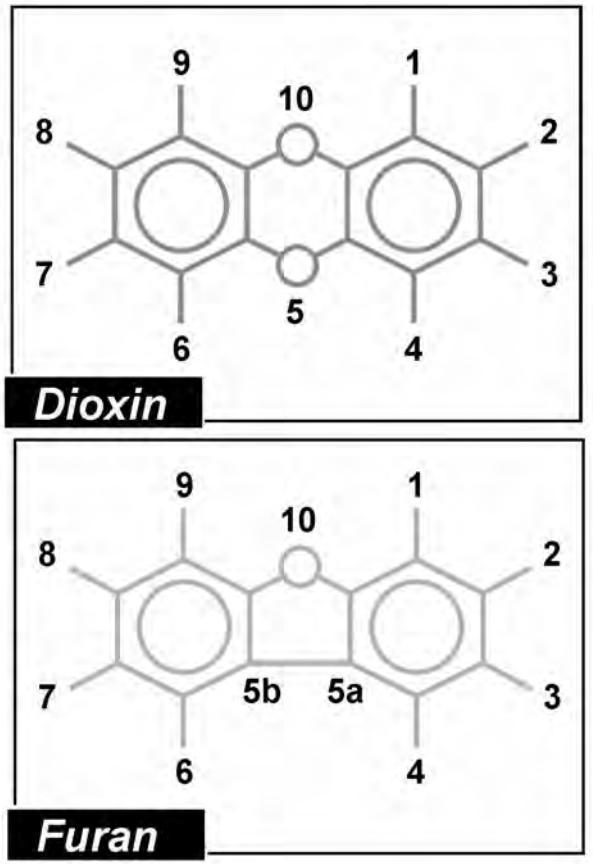
# What are dioxins?

- Dioxins include:
  - Chlorinated dibenzo-p-**dioxins**
  - Chlorinated dibenzo**furans**
- Family of chemicals with similar structure and biological effects
- Persist in environment and accumulate in living things
- Present worldwide
- Most people exposed to low levels
- Exposures linked to cancer, non-cancer health effects

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# Why It Matters

- **Dioxins** – reproductive and other cell development, immune system, chloroacne, cancers

**Risk** = **Toxicity** x **Exposure**

**Toxicity** = How dangerous?

**Exposure** = How much contact?

- No immediate health concerns but may pose long-term risk.
- Odds of developing health problems different for each person.

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# Dioxin Sources

- **Point sources**
  - Combustion, incinerators
  - Pulp & paper chlorine bleaching
  - Chemical manufacturing
- **Diffuse sources**
  - Forest fires
  - Automobile exhaust
- **Property-specific sources**
  - Chemical applications
  - Burn barrels, fireplaces

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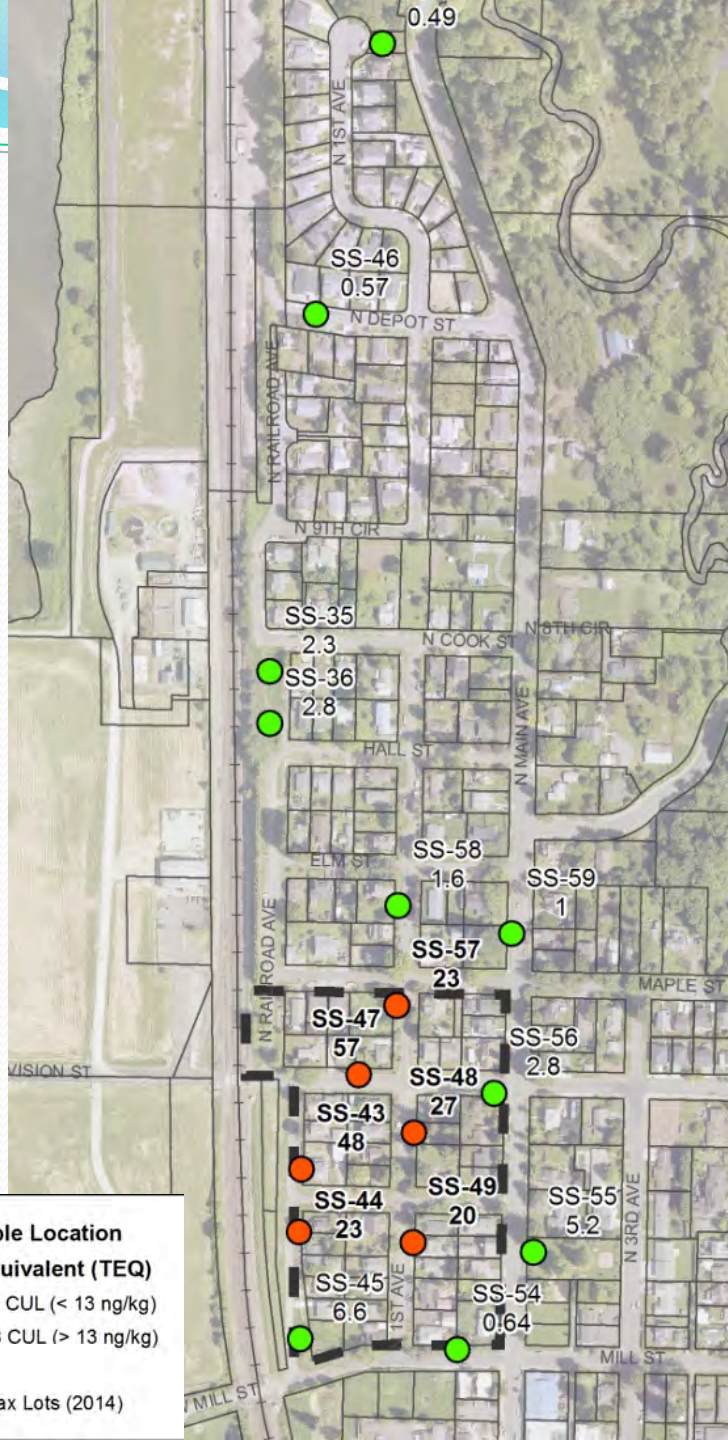
# Dioxins in Neighborhood

- Dioxins found in right-of-way
  - Dioxin levels ranged from less than 1 – 57 ppt
- Dioxins may also be in yard soil
- Likely from air borne deposition
- Expect to find air borne dioxins in shallow soil
- Dioxins do not move much once in soil
- There could be dioxins from multiple sources



# What do we need to study?

- Want to find **extent and concentrations** of dioxins beyond the road right-of ways
- That means sampling in yards
- Sampling is **at no cost** to residents or owners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# Yards to study

- Divided by tax lots
- 39 yard sampling areas
- In study area

# Finding areas to sample

- Use property layout and use information to determine sample areas.
- Some properties or parts of properties may not be appropriate for sampling due to:
  - Lack of exposed or undisturbed soil
  - Presence of burn piles or building fire
  - Landscaping activity that has disrupted dioxin presence
- Samples will not be collected from:
  - Under structures
  - In areas of active soil working

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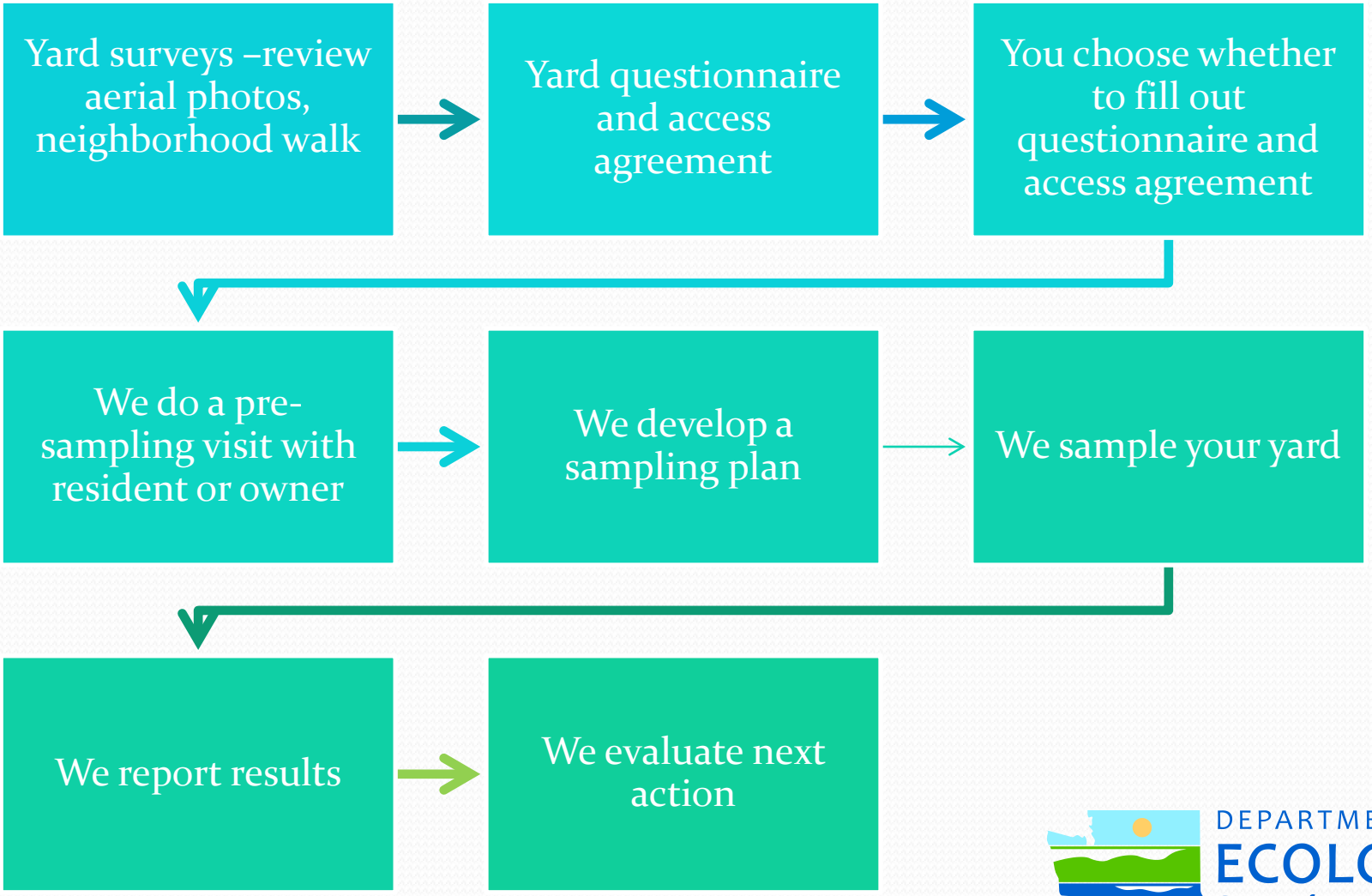
# How will we study dioxins?

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# Who is doing the work?

- The Port of Ridgefield is the responsible party doing the study under agreement with Ecology
- Environmental consultant is Maul Foster Alongi
  - Yard surveys and information gathering
  - Prepare sampling plans and collect samples
  - Compile data and write reports
- Department of Ecology
  - Yard information gathering
  - Help with project coordination
  - Providing updates to residents and owners
  - Study oversight and report approval

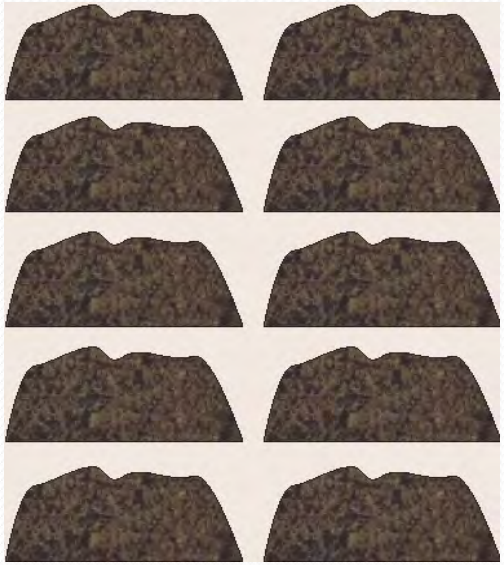
# Finding areas to sample

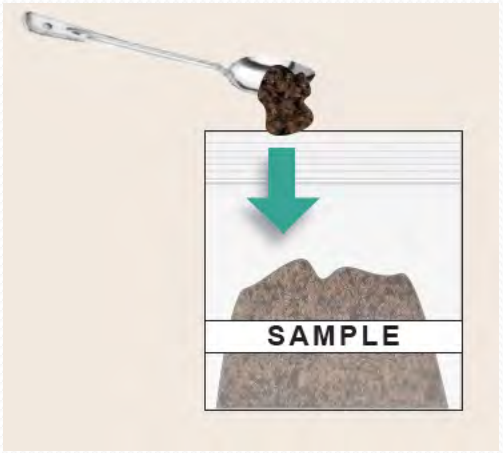
- The port will:
  - Analyze aerial photos to learn building and landscaping history, confirm observations
  - Survey property owners or residents about yard use:
    - Burn piles or barrel locations
    - Exposed soil areas
    - Heavy use areas
    - Play areas
    - Vegetable gardens
  - Use information to prepare a **property-specific** map (area of interest) and sampling plan

# How is sampling done?

- Soil cores
- Shallow soil samples
  - 10 per area of interest
  - From 0 – 6 inches deep
  - Combined into a composite sample
- Deeper samples
  - 1 sample per area of interest
  - From 6 – 12 inches deep

# Shallow Soil Compositing






# How will samples be analyzed?

- The samples will be sent to a laboratory.
- Samples will be analyzed for levels (concentrations) of dioxins:
  - Composite samples
  - Non-composite samples

- The laboratory will report results for each sample.

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# How will residents get sample results?

- Ecology and the Port will provide sample results to residents and homeowners with info about:
  - Whether dioxin levels are above the state cleanup level of 13 ppt.
  - Healthy actions to reduce exposure.

- Expect sample results about 2-3 months after sampling (summer 2015)

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# How will Ecology and the Port use results?

The Port  and Ecology will evaluate results, develop a study report, use data to evaluate cleanup options.

1. What the levels are and how widespread they are.
2. If all are below the cleanup level, no cleanup needed in yards.
3. If some are above the cleanup level:
   - Options may include removing some or all shallow soil in yards and replacing with clean soil; “capping” yards with clean soil; education about preventing exposure.
   - May collect more samples.
4. **We won’t know which cleanup options apply until we know dioxin levels.**

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# Healthy Actions in Your Home

- ✓ Wash hands.
- ✓ Use a scrub brush to clean dirt from under your nails.
- ✓ Leave shoes at the door.
- ✓ Wash toys frequently.
- ✓ Damp dust, mop, and vacuum.
- ✓ Eat a healthy diet.
- ✓ Wash and scrub fruits and vegetables.


# Healthy Actions with Soil

- ✓ Wear gardening gloves.
- ✓ Grow produce in raised beds with tested soil.
- ✓ Cover bare patches of dirt.
- ✓ Dampen dusty soil before gardening.
- ✓ Wipe pets' paws.
- ✓ Sample soil.

# Sampling soil:
# We need your help!

- Provide contact information on sign-in sheet.
- Sign an access agreement.
- Fill out property use questionnaire.
  - Info about your yard layout and use.
- Meet with us to identify the best locations for sampling.

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# Study Timeline

| | |
|---|---|
| Spring 2015 | • Yard surveys, questionnaires, access agreements.<br>• Develop property-specific sampling plans.<br>• Collect soil samples from yards. |
| Summer - Fall 2015 | • Get soil sample results and evaluate them<br>• Evaluate cleanup options<br>• If needed, develop cleanup plan<br>• Public comment on cleanup reports |
| Winter 2015 - Spring 2016 | • Start cleanup where needed |

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# Questions?