

Homeowners Guide to Yard Cleanup

Tacoma Smelter Plume (Vashon-Maury Island)

December 2016

Introduction

The Department of Ecology (Ecology) is cleaning up the most contaminated yards in the Tacoma Smelter Plume. The plume is a 1,000 square mile area of arsenic and lead soil contamination from the former Asarco smelter in North Ruston and Tacoma.

Ecology is offering soil removal in the Residential Yard Sampling and Cleanup Program (Yard Program). This program is voluntary and you can choose to participate in the program when we contact you. Ecology will work with homeowners to design a plan to remove and replace soils.

This guide explains what to expect during soil removal and replacement in your yard.

Tacoma Smelter Plume Cleanup Background

For almost 100 years, the Asarco Company operated a copper smelter in Tacoma. Air pollution from the smelter settled on the surface soil over more than 1,000 square miles of the Puget Sound basin. Arsenic, lead, and other heavy metals are still in the soil as a result of this pollution.

In 2009, the State of Washington received a settlement from Asarco, including \$94 million to pay for cleanup of the Tacoma Smelter Plume. Ecology is using a large part of this settlement to sample and clean up the most contaminated areas of the plume.



TOPICS

- Introduction
- Background
- Cleanup and Restoration
- Health and Safety Information
- Contact information

MORE INFORMATION

Yard Cleanup Videos

<http://youtu.be/Vk-i6odjHyM>

Ecology's Website

<http://www.ecy.wa.gov/toxics/tacoma-smelter.html>

Sampling Results

<https://fortress.wa.gov/ecy/areispublic/>

Yard Program Project Line

(360) 407-7688, press 2

Amy Hargrove

Cleanup Manager
(360) 407-6262

Amy.Hargrove@ecy.wa.gov

Crescent Calimpong

Outreach Coordinator
(360) 407-6790

Crescent.Calimpong@ecy.wa.gov

HEALTH QUESTIONS

Public Health—Seattle &
King County

<http://www.kingcounty.gov/health/tsp>

FSID #89267963
CSID #3657

Yard Program Service Area

Ecology is offering soil sampling to homes in the service area (map on right) to determine if the soil contains elevated levels of arsenic or lead.

Many yards in Ruston and north Tacoma were already sampled by the Environmental Protection Agency (EPA).

Ecology will recommend cleanup for yards where contamination is found above our action levels. Action levels are:

A property qualifies for cleanup planning when they meet one of the above criteria.

- Arsenic \geq 100 parts per million (ppm)
- Lead \geq 500 ppm

Planning for Soil Removal

We are offering soil removal and replacement for yards with arsenic 100 ppm or above, or lead 500 ppm or above. We will work with you to create a cleanup plan.

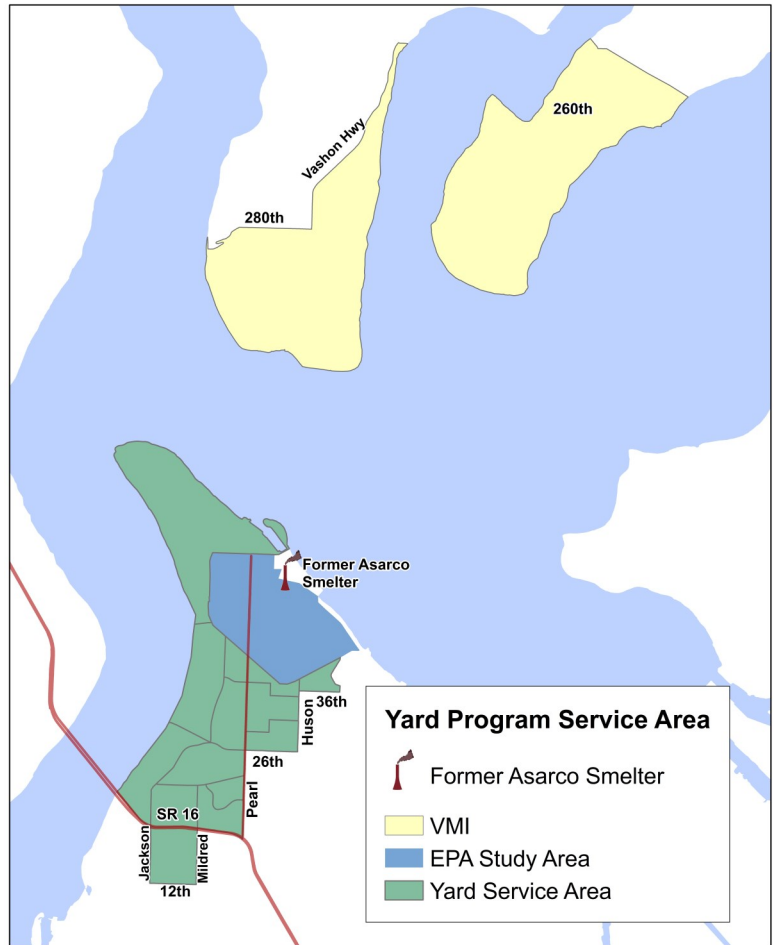
Ecology will not sample or cleanup any yard without permission from the property owner. Soil cleanup involves removing the contaminated soil, backfilling the area with new soil and restoring the new lawn.

Areas Not Included in Soil Removal

We cannot remove soil under:

- Buildings with foundations.
- Low decks.
- Sidewalks, patios, or driveways with more than four inches of gravel.
- Walls, ponds, or pools.
- Dripline or root ball of large trees or shrubs.

We may place a covering of soil or other landscaping material in areas where we cannot remove soil.



Service area for the Yard Sampling and Cleanup Program.

Steps in the Cleanup Process

The following section describes the steps of a typical yard cleanup. Your cleanup might look different, depending on the layout and size of your yard. Cleanup planning can take a year and the cleanup itself can take several months. The whole process can take two years from the initial cleanup planning to cleanup wrap-up.



Planning and Cleanup involves several steps:

1. Create a property cleanup plan & agreement.
2. Ecology hires a contractor.
3. Contractor prepares the property.
4. Remove soil and sample.
5. Replace soil.
6. Restore landscaping.
7. Ongoing care for new landscaping.
8. Cleanup paperwork.



Read more for details about each step in the cleanup process.

Step 1

Make a Cleanup Plan & Agreement

- We call you to set up a visit at your property.
- During this visit, we meet with you to discuss cleanup options and to review your yard.
- We develop a cleanup plan for your yard using information from the checklist and the visit, in some cases, we may schedule a second visit to discuss the cleanup plan.
- If you agree to the cleanup plan, we ask you to sign a cleanup agreement.

Cleanup Timeline



Step 2

Hire a contractor

- After we receive the signed cleanup agreement, we proceed with hiring a contractor for the next available construction season. Cleanup typically occurs 1 year after the Cleanup Plan is developed and signed.
- Our construction season is from spring to fall. The season may be shorter or longer depending on the year.
- We notify you when we have hired a contractor and set a date for cleanup in your yard.

Step 3**Prepare the Yard**

- We take photos and video to assess the yard area.
- For your safety, we install temporary fencing. Once fencing is up, we ask you to stay out of the fenced areas.
- We remove or relocate the fencing to provide pathways to your home as needed.
- We may temporarily relocate your parking areas as needed.

**Step 4****Remove Soil and Sample**

- During removal, we haul landscaping and contaminated soil away from your property.
- We use excavators, backhoes and hand tools to remove soil from the yard.
- To control dust, we bring water and spray it on dry soil.
- After soil removal, we collect samples at the base of excavation. If the soil at the base has arsenic above 100 ppm or lead above 500 ppm, we install a fabric to mark where contamination may remain.

**Step 5****Replace Soil**

- We bring new soil to your yard and fill in the areas that were excavated.
- We place topsoil over the clean backfill soil.
- We reconstruct any rock or retaining walls that are damaged or disturbed during construction.
- We also install or replace any sprinklers that are moved or damaged during construction.
- Before restoring landscaping, we test the new soil to make sure that it is clean.



Step 6

Restore Landscaping

- The contractor will restore the landscaping based on photographs taken during the site assessment and the cleanup plan agreement.
- The contractor will use either sod or hydro seed to replace lawn areas.
- Ecology will notify the homeowner and tenants when it is safe to walk on the lawn.
- Fencing may remain for several weeks to protect new plants and sod or hydro-seed.
- Landscape features and decorations will be restored.



Step 7

Care for New landscaping

- You, the homeowner, are responsible for basic landscape care of your restored lawn or plants, including:
 - Watering plants, sod and hydro-seed.
 - Weeding regularly.
 - Replenishing mulch.
 - Adding fertilizers as needed.
- Please contact Ecology immediately if you notice a problem with your new lawn or plants within the first year after restoration.



Step 8

Keep a Record of the Cleanup

- When cleanup and restoration is finished, we will give you copies of the paperwork that details all the work that was completed.
- You can pass on this paperwork to future property owners and share it with prospective buyers to address concerns about contamination on your property.
- Ecology will also keep a record of the cleanup work for your yard on our public database at <https://fortress.wa.gov/ecy/>



Safety considerations during property cleanup

Access to areas on your property:

- Our contractors will clearly designate the pathways to your home with fences.
- On the street, the contractor will clearly identify traffic routes and parking areas.
- The contractor will make sure that the cleanup work does not interrupt mail, garbage and delivery service.
- We will notify you in advance if your mailbox needs to be moved temporarily.
- School bus service should not be impacted by cleanup. Minor changes in pick up locations may be needed. Ecology will contact you before changes are made.
- Access to sheds and detached garages may be interrupted during construction.

Safety:

- Keep a close eye on kids and pets during cleanup. Keep them away from the cleanup area.
- Relocate any personal belongings you want to protect or keep safe.
- Be aware when you are coming and going from your home.
- Let us know if you need handicapped accessible routes.
- Keep taking healthy actions.
- Stay away from construction equipment and materials. Don't assume the workers can see or hear you.

Health Information

Although the contamination does not necessarily pose an immediate health risk, arsenic and lead are harmful and may pose a long-term health risk.

Arsenic can cause cancer and has been linked to several other health problems including heart disease and diabetes. Lead can cause behavioral problems, learning disabilities and reduced physical growth in children.

Arsenic and lead are not well-absorbed through the skin. Arsenic and lead get into your body if you swallow small amounts of contaminated soil while eating with dirty hands or putting dirty fingers in your mouth. You can also be exposed if you inhale dust or dirt contaminated with lead or arsenic.

Young children are more vulnerable than adults. Children will put their fingers and other things in their mouths more regularly. Also, because children are still growing, they are more sensitive to the effects of arsenic and lead than adults.

Healthy Actions are simple things you and your family can do to decrease contact with dirt that may contain arsenic, lead and other harmful chemicals.



See healthy actions on the next page.

Healthy Actions

Use plenty of Soap and Water

Dirt is found on hands, toys, shoes, clothing and pets. **Wash** your hands well before eating and after working or playing in the soil. Use a scrub brush to clean dirt from under your nails. **Wash** heavily soiled clothing separately from other laundry. **Wash** children's toys, bedding, and pacifiers frequently. Hand sanitizers do not remove arsenic and lead from hands.

Mop, Dust and Vacuum

People and pets track in dirt or it can enter your home in the form of small dust particles through windows and doors. Dust and dirt settles on carpeting, throw rugs, curtains, upholstered furniture, as well as windowsills and bookcases. **Damp-dusting** and vacuuming at least once a week is recommended to decrease the amount of dust and dirt in your home. **Always** use a damp-mop or a damp-cloth when you dust.



Wash Fruits and Vegetables

Arsenic and lead may be in dust and dirt found on the surface of fruits and vegetables. There is a slight chance that leafy vegetables, like lettuce or kale, grown in contaminated soil may absorb very small amounts of contaminants. **Wash** all fruits and vegetables to make sure all dirt is removed. Use a scrub brush on potatoes, squash, carrots, etc. **Always** wear shoes and gloves when gardening or working in the soil and take them off before coming into your home. **Grow** your produce in raised beds made with arsenic-free materials.

Maintain Your Home and Yard

Covering bare patches and keeping up with home maintenance keeps arsenic and lead away from your family. **Cover** bare patches in your yard with a ground cover such as grass, gravel, wood/mulch product or native plants. **Wear** a dust mask while working in your yard during the dry season. **Maintain** the painted surfaces of your home. Homes built before 1978 may have been painted with paint containing lead. When lead-paint chips or wears away, it becomes a major source of lead, both inside and outside the home. **Have** your soil tested.

Eat a Healthy Diet

Iron, calcium and vitamin C help to decrease absorption of lead. **Eat** a diet rich with these nutrients. Include foods like broccoli, spinach, potatoes, dairy products and citrus fruits.

Keep Pets Clean

Pets walk, roll, and lie down in dirt and soil. When pets come into the house, their fur and paws bring in soil and dust too. **Wipe** off all excess dirt and mud before your pet comes into your home. Brush and bathe your pet regularly. **Restrict** your pet to parts of your home that are free from carpeting and upholstery. **Give** pets their own bed.



How we will keep you informed during soil replacement...

Ecology staff will use several different methods to keep you informed about the cleanup activities on your property and in your neighborhood, including:

- | | | |
|---------------------------------------|--|---|
| <input type="checkbox"/> Phone calls | <input type="checkbox"/> Website or blog | <input type="checkbox"/> Open house meeting |
| <input type="checkbox"/> Door hangers | <input type="checkbox"/> Emails | <input type="checkbox"/> Fact sheets |
| <input type="checkbox"/> Flyers | <input type="checkbox"/> On-site visits | <input type="checkbox"/> Large site signs |



Questions?

If you have questions about the yard cleanup process, please contact a staff member on Ecology's Yard Program team:

Amy Hargrove
Remediation Manager
(360) 407-6262
Amy.Hargrove@ecy.wa.gov

Jackson Barnes
Field Oversight Coordinator
(360) 407-6248
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Crescent Calimpong
Yard Program Outreach Coordinator
(360) 407-6790
Crescent.Calimpong@ecy.wa.gov

Chris Huff
Contract Manager
(360) 407-0242
Chris.Huff@ecy.wa.gov

Health Questions:

If you have health questions about arsenic and lead in your soil, please contact:

Public Health Seattle & King County
(206) 477-DIRT (3478)
DirtAlert@kingcounty.gov



Visit their webpage at:
<http://kingcounty.gov/healthservices/health/ehs/toxic/TacomaSmelterPlume.aspx>

Sampling Results or Cleanup Records:

Find your soil sampling results or cleanup records at the Arsenic in Soil Database:
<https://fortress.wa.gov/ecy/areispublic/>

More information:

For more information, visit Ecology's website at: <http://www.ecy.wa.gov/toxics/tacoma-smelter.html>

Also check out the Yard Cleanup Program's Videos at:
<http://youtu.be/Vk-i6odjHyM>

To request ADA accommodation or materials in a format for the visually impaired, call Ecology at (360) 407-6790, Relay Service 711, or TTY (877) 833-6341.