

Residential Developments in Former Orchard Lands



More information

Dirt Alert Program:

<https://ecology.wa.gov/DirtAlert>

Former Orchard Lands:

<https://ecology.wa.gov/FormerOrchards>

Worker Safety & Health:

<https://lni.wa.gov/safety-health/>

Voluntary Cleanup Program:

<https://ecology.wa.gov/VCP>

Contact information

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Department of Labor &
 Industries, Safety & Health
 1-800-423-7233

Increasingly, historical orchards are becoming a place for new homes. Construction and residential developments are a common sight. Unfortunately, agricultural chemicals used long ago are still around. These properties may have lead and arsenic in the soil, often at high levels.

It is important for people to understand what risks these properties may pose and to provide the resources needed to prevent and manage exposure and/or clean up contamination.

Services we offer

Our goal is to help developers and local governments mitigate potential health risks during the planning phase of redevelopment. This protects construction workers and prospective homeowners, especially children, from exposure to lead and arsenic. We offer the following services:

- **Free soil sampling:** We will complete required soil sampling before new development occurs, a service we provide at no cost.
- **Technical assistance:** Ecology staff will help you understand your soil sampling results and develop cleanup plans.
- **Voluntary Cleanup Program:** For a fee, Ecology will provide a written opinion that your cleanup is successful (a “no further action” determination), which is useful with lenders and prospective purchasers.

Why does it matter?

In the early 20th Century to about 1950, lead arsenate was commonly used as a pesticide in Washington state apple and pear orchards including in Chelan, Douglas, Okanogan, Yakima, and Benton counties.

The pesticide’s components, lead and arsenic, do not easily break down and therefore have remained stable in the soil. Because of this, historic orchard sites have an increased potential for soil contamination.

Levels of metals in soils are often above concentrations allowed under Washington state cleanup standards designed to protect human health and the environment.

There are health risks associated with lead and arsenic contamination. It can be present in surface soils as well as in deeper soils that are moved or exposed, such as during construction of new housing developments or in the case of homes built on newly disturbed soil. Stormwater runoff can carry contaminated soils into nearby waterways.

If you have contamination, state and local laws require you to:

- Protect your workers.
- Prevent stormwater runoff.
- Properly dispose of contaminated soils.
- Control dust and keep soils from leaving the site.

Is my development in former orchard lands?

Ecology's Former Orchard Lands¹ webpage includes maps of potentially affected areas based on land use and based on aerial photographs from the late 1940s. You can also review property records to identify if your work site is in an area of potential contamination. **Please note:** Use Google Chrome for your browser

How do I know if I have contamination?

Soil sampling is the only way to know. Ecology is requiring soil sampling before new development occurs, a service we provide at no cost. Please contact Jeff Newschwander at 509-454-7842 or Jeff.Newschwander@ecy.wa.gov to schedule sampling and learn about how to test your soil.

Workplace safety rules

The Washington Department of Labor and Industries² (LNI) has rules to protect workers from arsenic and lead in the workplace. These apply to any employees exposed to soil within former orchard lands. Employers must comply with all workplace safety rules on toxic exposures, including:

- Arsenic, Chapter 296-848, Washington Administrative Code (WAC)³
- Lead, Chapter 296-62, WAC⁴
- Hazardous Waste Operations, Chapter 296-843, WAC⁵

For help understanding and complying with these rules, please contact LNI Safety & Health at 1-800-423-7233.

¹ <https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Toxic-cleanup-sites/Former-orchard-lands>

Please note: Use Google Chrome for your browser with the above web site

² <https://lmi.wa.gov/safety-health/>

³ <https://apps.leg.wa.gov/WAC/default.aspx?cite=296-848&full=true>

⁴ <https://apps.leg.wa.gov/WAC/default.aspx?cite=296-62-07521>

⁵ <https://apps.leg.wa.gov/WAC/default.aspx?cite=296-843>

Stormwater runoff

In Washington, construction sites must have a **Construction Stormwater General Permit** if they:

- Disturb one or more acres of land or are part of a larger project that will disturb one or more acres; and
- Discharge stormwater from the site into, or through a storm drain system that discharges into, surface waters of the state; or
- Use best management practices (BMPs) from the 2005 Stormwater Management Manual for Western Washington, Volume II, (February 2005) or an approved local BMP manual.



Stormwater runoff can carry soil pollutants like arsenic and lead.

Ecology can also require a permit for a site with pollutants impacting waters of the state. This includes arsenic and lead in soil of former orchard lands.

Methods for controlling and preventing stormwater runoff include:

- Covering bare soils to prevent erosion.
- Straw wattles and check dams to slow the flow of water through the site.
- Putting filters in storm drains.
- Wheel washes.
- Quarry rock at construction entrances.

Soil disposal

Reusing, giving away, or selling contaminated soils could put others at risk. All soils leaving the site must go to a landfill. In some cases, contaminated soils can be mixed or capped in place. For more about soil cleanup, please contact Jeff Newschwander at 509-454-7842 or Jeff.Newschwander@ecy.wa.gov.

State Solid Waste Handling Standards govern the disposal of contaminated soils. Landfills may require data about the toxicity of the soil.

For general information about waste disposal:

- Benton County landfills⁶
- Chelan County Landfills⁷
- Douglas County Landfill (Greater Wenatchee)⁸
- Okanogan County Landfills⁹
- Yakima County Landfill¹⁰

⁶https://bfhd.wa.gov/programs_services/waste_disposal/solid_waste_facilities

⁷<https://www.co.chelan.wa.us/public-works/pages/solid-waste>

⁸<http://www.wmnorthwest.com/landfill/wenatchee.htm>

⁹https://www.okanogancounty.org/PW/solid_waste_recycling.htm

¹⁰<https://www.yakimacounty.us/693/Landfills>

Dust control

Allowing dust from your construction site to cross onto another property is illegal. State air quality regulations allow heavy fines for not controlling dust.

Three agencies regulate air quality in Benton, Chelan, Douglas, Okanogan, and Yakima counties.

- Benton Clean Air Agency¹¹ serves Benton County.
- Ecology's Central Regional Office¹² serves Chelan, Douglas, and Okanogan counties.
- Yakima Regional Clean Air Agency¹³ serves Yakima County.

Dust containing arsenic and lead can impact neighboring properties and pose a risk to human health.

To reduce dust:

- Water down your work site during dry weather.
- Cover soil stockpiles and trucks loaded with contaminated soil.
- Limit traffic and traffic speeds onsite.
- Maintain as much plant cover as possible.



Health effects of lead and arsenic

There are health risks associated with lead and arsenic contamination. It can be present in surface soils as well as in deeper soils that are moved or exposed, such as during construction of new housing developments or in the case of homes built on newly disturbed soil.

In children, lead can cause behavioral problems such as hyperactivity, permanent learning difficulties, and reduced physical growth. In adults, lead can increase blood pressure, affect memory, and contribute to other health problems.

Arsenic can cause a variety of health problems, including heart disease, diabetes, and cancer of the bladder, lung, skin, kidney, liver, and prostate.

Learn more on Ecology's Dirt Alert – Health Effects¹⁴ web page that includes links to more information from the Washington State Department of Health, Agency for Toxic Substances and Disease Registry, and other agencies.

¹¹<http://bentoncleanair.org/>

¹²<https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Clean-air-agencies>

¹³<https://www.yakimacleanair.org/>

¹⁴ <https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Dirt-Alert-program/Health-effects-of-arsenic-and-lead>



Contractors placing clean topsoil over geotextile fabric in redeveloped orchard lands. The topsoil and fabric act as a cap, keeping people safe from contacting lead- and arsenic-contaminated soil.

Special accommodations

To request Americans with Disabilities Act (ADA) accommodation, or printed materials in a format for the visually impaired, contact Rhonda Luke at 509-454-7838 or Rhonda.Luke@ecy.wa.gov, or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.