
Tacoma Smelter Plume (Dirt Alert) Studies – Arsenic and Lead in Soils King, Kitsap, Pierce and Thurston Counties



Introduction

The Department of Ecology (Ecology) is studying the soil pollution from the Asarco smelter air emissions. The air pollution that came out of the smokestack traveled with the wind and settled onto the soil in parts of the Puget Sound Basin. Ecology began to study the soil pollution in 1999. Ecology provided grants to the local health departments in King and Pierce counties to study:

- how far from the smelter the soils are polluted
- the amount of arsenic and lead in soils where children play

Arsenic in soil above 20 parts per million (ppm) is higher than normal, and is a public health concern. Lead in soil above 250 ppm is also higher than normal, and is a public health concern.

Completed soil studies show that the levels of arsenic and lead are higher than normal in some locations in King and Pierce counties. **Studies also show that the soil pollution extends farther than the area originally studied.** Find out more about these studies by visiting Ecology's website at:

http://www.ecy.wa.gov/programs/tcp/sites/Tacoma_smelter/ts_hp.htm

To find out how far the soil pollution extends, Ecology teamed up with the local health jurisdictions in King, Kitsap, Pierce, and Thurston counties to plan a final study.

Study Design

To get started, Ecology and the health jurisdictions looked at information we have already collected to predict how far from the smelter the soils are

polluted. We used equations and mapping to predict where the amount of arsenic in the soil may be higher than normal (over 20 ppm). In the more predominant wind directions, the predicted distances are as far as 30 miles from the smelter. The attached map shows:

- the wind directions (black arrows)
- where we predict arsenic may be higher than 20 ppm (red line)
- the study boundary (black line)
- the sampling locations (colored dots with black dot)

Earlier studies showed that the most arsenic and lead are found in the surface soil in areas where soil has not moved around very much, for example, in a forest. For this study, we plan to sample forested areas. Where forested areas are not available, we plan to sample older residential areas. To look at the study design, go to Ecology's Tacoma Smelter Plume website and click on Newest activity.

Next Steps

Over the next several weeks, the health jurisdictions will ask for permission from property owners to sample their soil. You can expect to see staff from the health jurisdictions collecting soil samples beginning in January 2004. Sampling is expected to continue through the summer of 2004.

We will publish the sampling results on our website, as they become available. We expect to finish the study by late 2004.

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FOR MORE INFORMATION, CONTACT...

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Ecology's web site:
http://www.ecy.wa.gov/programs/tcp/sites/Tacoma_smelter/ts_hp.htm

For special accommodation needs or language translation assistance, call Molly Gibbs, Ecology's Public Involvement Specialist at (360) 407-6179 or (TTY) at 711 or 1-800-833-6388.

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**Extended Footprint Study Design
Proposed Sampling Grid**

Map Features



Tacoma Smelter Stack


Footprint Study Boundaries





03 - 05 Footprint Study Area


20 ppm Maximum Arsenic Area
(Predicted)






20,000' Grids (4 Areas per Grid)

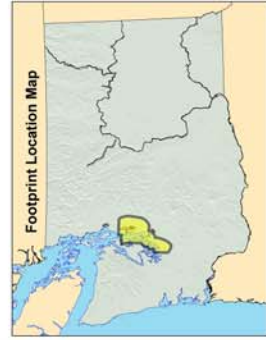
 King County
 Pierce County

8,000' Grids (1 Area per Grid)

 King County
 Pierce County
 Kitsap County
 Thurston County

**Maximum Arsenic Concentration
(Initial Footprint Locations)**

 ND - 20 ppm
 20 - 100 ppm
 100 - 200 ppm
 > 200 ppm



Map Created: November, 2003 For Planning Purposes Only

