RESPONSIVENESS SUMMARY

Tacoma Smelter Plume
Asarco Tacoma Smelter Site
October 20 – December 20, 2011 Public Comment Period

Interim Action Plan

Prepared by
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Southwest Regional Office
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More Information

Visit Department of Ecology's Tacoma Smelter Plume website for background on the site, links to documents, and information about the cleanup:
http://www.ecy.wa.gov/toxics/tacoma-smelter.html

Site documents are also available at:

Washington Department of Ecology
Southwest Regional Office
300 Desmond Drive SE
Lacey WA 98503
(360) 407-6243

Tacoma Public Library
Northwest Room
1102 Tacoma Ave.
Tacoma, WA 98402
(253) 591-5666

The Washington Department of Ecology (Ecology) has a list of interested residents, organizations, businesses, and agencies. To join the mailing list, please contact Hannah Aoyagi at 360-407-6790 or Hannah.Aoyagi@ecy.wa.gov.

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Introduction

This responsiveness summary addresses comments and questions from the October 20 – December 20, 2011 comment period on the Tacoma Smelter Plume cleanup plan. The plan covers how Ecology will use a $94 million settlement to clean up some soils, and manage risk throughout the 1,000 square mile plume. The plan has four main pieces:

1. Sample and clean up yards in the most highly contaminated areas of the plume.
2. Continue the Soil Safety Program for schools, childcares, parks, and camps.
3. Provide ongoing outreach and education.
4. Encourage cleanup during property development or redevelopment, when soils are already being disturbed.

Fifty-five individuals, organizations, and local governments commented. We also included some common questions heard during our public meetings, and from people who did not provide written comments. We did make a number of changes to the Interim Action Plan and Model Remedies Guidance. The major changes are listed in the next section "Actions Resulting from Public Comments."

Format of the Responsiveness Summary

Ecology has reviewed all comments received. Comments from different reviewers often covered the same topics. We have responded to these common concerns, as well as many other comments and questions. The contents include:

- **Summary of Public Involvement**
- **List of Commenters**
- **Acronyms and Abbreviations**
- **Responses to Common Concerns**
- **Responses to Specific Concerns**
- **Appendix A: Comment letters**

Next Steps

Now that we have finalized the Interim Action Plan, next steps include designing the yard sampling and cleanup program. We will need public input during the program design and as we develop new outreach strategies, especially for real estate agents and new homebuyers.

Actions Resulting from Public Comments

Yard Sampling and Cleanup Program

The comment period provided us with many issues we need to address while designing the yard program. We will are currently working on these issues as we make decisions about how to take soil samples and how and where to do cleanup. We will also look at ways to make yard replacements more environmentally friendly, with less stormwater runoff, and more native and drought resistant plants.

Expand the Soil Safety Program

We will identify play areas at places of worship, preschools, private community parks and community centers within the high zone. We will evaluate funding options to possibly address these play areas.

Cleanup During Development

We are no longer charging a fee for VCPs that have only Tacoma Smelter Plume contamination. We will also create materials to help smaller-scale projects decide if model remedies are appropriate. We will design a handout that includes background on the plume, a map, lab information, a summary of cleanup options, and an Ecology contact. We will distribute this to local permit offices.

Real Estate Sales

We are accelerating our work on this part of the plan. We are beginning to meet with real estate agents and planning to pilot some educational tools. One major initiative is to promote the disclosure of arsenic and lead from the Tacoma Smelter Plume.

Working with Local Governments

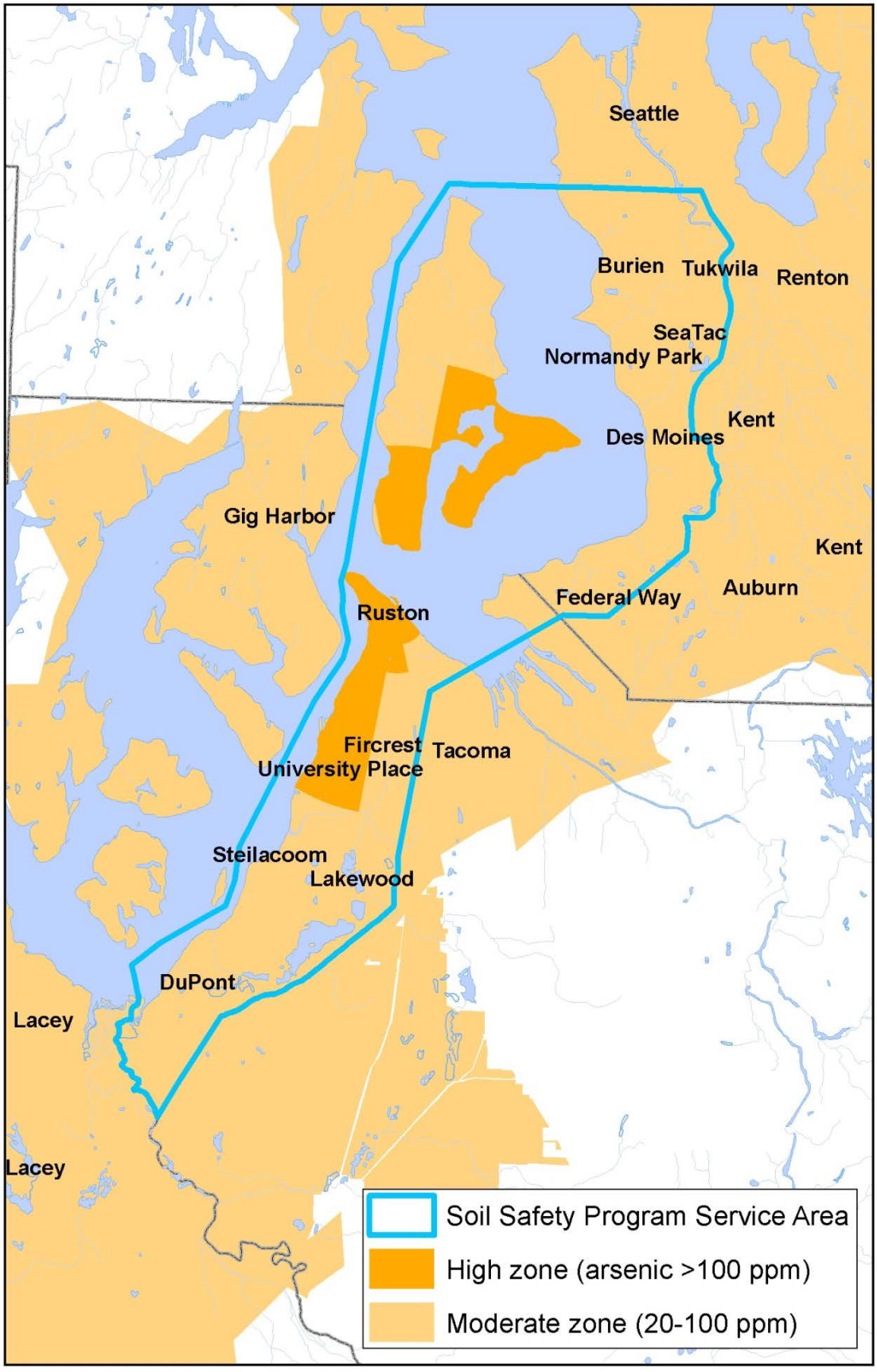
We are beginning to talk with cities about developing best management practices for soils at public works project sites within the plume.

Education and Outreach

We will coordinate with our local health department partners to try new outreach methods. In particular, we will contact some of the community organizations suggested.

State Environmental Policy Act Checklist

We will work with local waste management staff during the yard cleanup program design to better understand and reduce the impacts of soil disposal. We will also try to schedule cleanup work to avoid peak traffic hours.


Seattle
Burien
Tukwila
Renton
SeaTac
Normandy Park
Kent
Des Moines
Gig Harbor
Kent
Auburn
Federal Way
Ruston
Fircrest
Tacoma
University Place
Steilacoom
Lakewood
DuPont
Lacey
Lacey
Soil Safety Program Service Area
High zone (arsenic >100 ppm)
Moderate zone (20-100 ppm)

Summary of Public Involvement

The Model Toxics Control Act (MTCA) mandates public involvement in the site cleanup process. The cleanup plan comment period ran from October 20 to December 20, 2011. Public involvement included stakeholder briefings, fact sheets mailers and other outreach, and public meetings.

Stakeholder Briefings

In August and September of 2011, we held eight briefings for key stakeholders:

- Interested tribes
- Ruston Town Council
- Tacoma City Council
- Vashon-Maury Island Community Council
- University Place City Council
- Pierce County Cities and Towns Association
- Pierce County Council
- King County Council staff

The purpose was to give local tribes and elected officials a preview of the cleanup plan. They also provided questions and feedback on how to explain the plan to the public.

Fact Sheets and Other Outreach

Ecology advertised the comment period using the following methods:

- **Fact sheet mailer** - Mailed to residents and property owners (2,750 in King County and 6,200 in Pierce County).
- **E-mail announcement** – Sent to around 700 stakeholders.
- **News release**
- **Other** - Notices on Ecology's Public Involvement Calendar and Site Register**.** Legal ads in the Olympian, Tacoma News Tribune, and Seattle Times.
- **Website** – http://www.ecy.wa.gov/toxics/tacoma-smelter.html
- **Blogs** – Posts about the comment period and public meetings, meeting recaps, and follow-ups to questions.

Public Meetings

Ecology hosted four public open houses. Each event had open house sessions, a presentation, and question and answer session. The presentations are available at: http://www.ecy.wa.gov/programs/tcp/sites_brochure/tacoma_smelter/2011/iap.html

- November 2 in Tacoma @ Point Defiance Elementary School (~50 in attendance)
- November 9 on Vashon Island @ McMurray Middle School (~250 in attendance)
- November 16 in University Place @ Curtis High School (~35 in attendance
- December 6 in Des Moines @ Des Moines Activity Center (~20 in attendance)

List of Commenters

Date	Name	Affiliation
11-2-11	Mike Monahan	Tacoma resident
11-2-11	Marie Jurich	Tacoma resident
11-3-11	John Zinza	
11-5-11	Marshall Hampton	
11-9-11	Emma Newby	Vashon resident
11-9-11	Jonathan Katz	Morningside Farm, Vashon
11-9-11	Lynda Brothers	L Brothers Law
11-9-11	Robert Blauvelt	Vashon resident
11-11-11	Carl Sells	Vashon resident
11-12-11	Michael Meyer	Vashon resident
11-16-11	Carl Halsan	Gig Harbor resident
11-16-11	Mark Amrine	City of Lakewood
11-16-11	Todd Torset	Vashon property owner
11-16-11	Kristin Lynett	City of Tacoma Office of Sustainability
12-15-11	David Swindale	City of University Place
12-15-11	Charles Bell*	Burien resident
12-15-11	Michael Bluske*	Seattle resident
12-15-11	Kyle Cruver*	Vashon resident
12-15-11	Aura Cuevas*	Seattle resident
12-15-11	Joann Edmonds-Rodgers*	Seattle resident
12-15-11	Daniel Evans*	Tacoma resident
12-15-11	Kathleen Fellbaum*	Vashon resident
12-15-11	Michelle Gaither*	Seattle resident
12-15-11	Terri Glaberson*	Seattle resident
12-15-11	Natalie LaBerge*	Tacoma resident
12-15-11	Carole Meriam*	Vashon resident
12-15-11	Margaret Rothschild*	Vashon resident
12-15-11	Mary Schroeder*	Seattle resident
12-15-11	Jody Tapsak*	Seattle resident
12-15-11	Amy Traux*	Seattle resident
12-15-11	Laurie Tucker*	Vashon resident
12-16-11	Pamela Morrill	Camp, Dresser & McKee Inc.
12-16-11	Adele Reynolds*	Seattle resident
12-17-11	Mark Slack	Seattle resident
12-17-11	Karin Nelson*	Seattle resident
12-17-11	Amy Wolff*	Vashon resident
12-19-11	Peter Huffman	City of Tacoma, Community and Economic Development Department
12-19-11	Heather Trim	People for Puget Sound
12-19-11	Evonne Agnello	Tacoma resident
12-19-11	Rein Attemann*	Seattle resident
12-20-11	Carl Teitge	Tacoma resident
12-20-11	Todd Hunsdorfer	City of Kent
12-20-11	Deborah Johnson	City of Lakewood

12-20-11	Doug Fortner	Town of Steilacoom
12-20-11	James Perry	
12-20-11	Jessica Knickerbocker	Tacoma resident
12-20-11	Kevin Brown	King County Parks & Recreation Division
12-20-11	Pamela Badger	King County Solid Waste Division
12-20-11	Kristine Anderson and Richard Hamm	Tacoma residents
12-20-11	Leslie Ann Rose	Citizens for a Healthy Bay
12-20-11	Marilyn Dunstan	Burien resident
12-21-11	Richard Heggen*	Tacoma resident
12-22-11	Stephanie Jewett	City of Burien
12-22-11	Alixine Sasonoff*	Burien resident
12-22-11	Tacoma-Pierce County Health Department	

**Duplicate comments. Please see Charles Bell's comment letter.*

Acronyms and Abbreviations

Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
IAP	Interim Action Plan
MTCA	Model Toxics Control Act
NFA	No Further Action
ppm	Parts per million, same as milligrams per kilogram
TPCHD	Tacoma-Pierce County Health Department

Responses to Common Concerns and Questions

1. Interim Action Plan Priorities, Funding, Scope, and Timeline

The Asarco settlement belongs to the people of Washington State. This Interim Action Plan (IAP) is designed to provide the greatest possible benefit to **public health** and **environmental quality** with the funds we have. In general, we heard support for focusing resources on soil sampling and cleanup, areas of highest contamination, and places where children play.

1.1 Funding from the Asarco settlement

Although the State of Washington received $188 million total from Asarco, only $94 million is for cleaning up the Tacoma Smelter Plume. The rest will go towards the Everett smelter, mine cleanups, to reimburse the State Toxics Account, and other Asarco-related cleanup projects. The State also received funds for Natural Resource Damage Assessment. Because Asarco went into bankruptcy, we cannot recover any more money from the company.

If more funding becomes available in the future, we have ideas for more "Phase Two" projects (IAP Chapter 7).

During the public meetings, we heard a number of concerns about whether the funding would last for 10 or more years. The funds are in an interest-earning account and we will pace the cleanup in a way that limits the administrative costs. In order to spend the funds the state legislature must appropriate them to the Department of Ecology every two years (biennium). It means we cannot clean up every yard at once, but it does ensure that the money goes as far as possible.

1.2 Scope of the cleanup

Some people have stated that Ecology has a responsibility to clean up the entire plume, if we believe it does indeed pose a risk. Others question why we are including such a large area in the plan.

We must address the entire area where people could be at risk, which is why our plan covers the entire 1,000 square miles of the plume. However, the risk is far higher in the high zones (map on page 9). These are the areas that need soil cleanup. In other areas, the most effective "cleanup" method and way to manage risk is education and behavior change. For lower arsenic levels, the risks and environmental damage of soil cleanup may outweigh the benefits.

1.3 Starting cleanup soon

Many asked Ecology to get cleanup started as soon as possible. As of March 2012, we have hired a contractor and started designing the yard sampling and cleanup program. We expect to begin sampling and cleanup around the end of 2012. We also continue to clean up parks, camps, schools, and childcares through the Soil Safety Program.

2. Yard Sampling and Cleanup Program

The yard sampling and cleanup program proposal had the largest number of comments and questions. We can use many of the comments in designing the program this year.

2.1 How to prioritize sampling and cleanup

University Place and west Tacoma residents had concerns that funding would run out before the program reached them. Some suggested offering cleanup on a first-come, first-served basis. Those who sampled their own yards or had their local health department sample [1] could be cleaned up sooner. We will consider this as part of program design. However, our cost estimates for the entire project are based on being able to clean up yards neighborhood-by-neighborhood. [2]

Some suggested that Ecology do more soil sampling to help refine high zone boundaries—the area the yard program would cover. Further data would be helpful and we are now discussing where to take more samples.

One commenter supported making low-use, wooded, and undeveloped land the lowest priority for cleanup. The IAP proposes cleaning up only the high-use areas of properties that also have woods or undeveloped areas. We plan to keep this the same for the yard program design.

2.2 Suggestions for other land use types to include

Some comments suggested including private clubs and other private property as part of the yard program. We are planning to keep the yard program focused on residential properties only. However, we are exploring adding more play area types to the Soil Safety Program, including private parks, places of worship, and community centers.

The City of Tacoma asked whether Ecology could include public rights-of-way in the yard program. Currently, we are planning to only include rights-of-way that are connected to the property and that homeowners use as part of their yard. The program design will include a more specific description.

2.3 Why begin cleanup in the Ruston/North Tacoma Superfund area?

A number of people have asked why Ecology is "going back" into EPA's Superfund cleanup area, and whether this is the best use of funding. EPA has already cleaned up the worst contamination. However, EPA's action level for arsenic was 230 parts per million (ppm), which is higher than our action level of 100 ppm. Many properties where EPA did not take action (because arsenic was below 230 ppm) still have what Ecology considers unacceptably high levels of arsenic. Ecology included funding for this work as part of its settlement with Asarco and will be enhancing EPA's cleanup action.

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[1] Currently, Tacoma-Pierce County Health Department offers free home soil testing in certain areas of the plume in Pierce County.

[2] Per-yard cost of cleanup goes down when the yards are in the same neighborhood. For example, a truck can pick up soil from several yards at once and make one trip to the landfill. Equipment and workers can stay in one neighborhood at a time. The reduced travel also lessens the environmental impacts of cleanup.

2.4 Ideas for soil sampling

We received a number of specific suggestions for designing the soil sampling piece of the yard cleanup program. We appreciate the questions and comments, and will use many of them in designing the program:

- **Focus resources on sampling.** We expect to offer soil sampling for as many as 17,000 yards, but probably less than 10% will be over our action level of 100 ppm. For the yards with 20-100 ppm arsenic, soil sampling is still a great outreach tool. We can empower people to change simple behaviors to reduce soil exposure. We can also advise on ways to use landscaping to reduce exposure.
- **Use x-ray fluorescence spectroscopy (XRF) to sample soils**. We do plan to use XRF (see Technical Questions, Section II for more information).
- **Do not use an average of 100 ppm as a firm cutoff for deciding whether to clean up an area of a yard**. We agree that using 100 ppm as a firm cutoff may exclude areas that actually need cleanup. For example, we may sample and find an average of 99 ppm, but if we had sampled again, we would have found an average over 100 ppm. As the commenter suggested, we will look at using other statistics and sampling approaches that consider the variability of the data.
- **Will you sample walk-in properties on Vashon Island?** Yes, sampling equipment can easily be carried by hand.
- **Will you sample pathways to walk-in properties, even if they are county property?** We will consider this as part of the program design.
- **Will you sample steep slopes?** Slopes are prone to erosion, difficult to work on, and are not usually areas where humans are exposed to soils. We will avoid sampling or cleaning up steep slopes. However, we have not yet decided how to define "steep."
- **Why does the plan discuss both play areas and whole properties?** The Soil Safety Program cleans up play areas and is separate from the yard cleanup program. With the larger properties in the yard program, we will only clean up the "high use" areas, which include play areas.

One suggestion—to **make participation mandatory**—is not feasible. One of the largest costs of soil sampling is in contacting property owners for permission to access their yards. Trying to force people to participate could take resources away from the actual sampling and cleanup work. It might also make others less likely to participate.

In general, Ecology does not enforce against homeowners unless we feel that there is a serious threat to public health or the environment. With Tacoma Smelter Plume contamination, there is a long-term risk, but no immediate threat. Part of our cleanup plan includes finding ways to educate future homeowners and allowing them to check whether their yard was sampled.

2.5 Ideas for cleanup

- **Work block by block to minimize impacts and cost.** We do plan to work in phases, which will reduce the disruption to each neighborhood. Cleaning up several yards on one block at one time means that truck traffic and construction noise may only impact neighbors for a few weeks, depending on how many yards need cleanup.
- **Use local workers to do the cleanup work.** We will put all cleanup contracts out for bid and we encourage contractors to check our website regularly http://www.ecy.wa.gov/services/contract/contract.html. Workers will need a 40-hour hazardous materials training and a 24-hour on-the-job training. We will provide details in the bid package.
- **Provide local governments with outreach materials and funding for public notice.** Ecology will pay for any public notice related to local permit requirements for the yard cleanup. We can also supply local governments with outreach materials (such as "tip sheets"), mail information to their residents, provide presentations, and help answer questions.
- **Consult with local planning, permitting, and surface water staff on the program design.** We plan to work with local staff during both the design process and the implementation of the program.
- **What soil depth will cleanup reach?** We have not yet decided cleanup depths, but we do know it will depend on the situation. For example, if the top 18 inches of soil under a lawn has over 100 ppm arsenic, we would likely remove the entire 18 inches. Most digging won't go much deeper because contamination is mostly in the top layer of soil. Also, at that depth, the replacement soil will provide enough protection from any deeper contamination. However, sloped areas, soil around trees, and other situations may need a different approach.

2.6 Suggestions for restoring yards after cleanup

We have heard concerns about how we will restore yards after the cleanup, and whether there is any flexibility in how they are restored. We plan to at least replace topsoil, sod, landscaping, and small trees—we would not remove larger trees, but work around them instead. All restoration work will meet local landscaping and tree cover requirements.

Both city staff and residents have asked whether homeowners could opt to have more environmentally-friendly landscaping put in after the cleanup. The specific comments were to use low-impact development techniques and rain gardens, which help reduce stormwater runoff. These ideas will be considered in the program design. We will probably be able to offer different landscaping options, up to the cost of replacing the original landscaping. The homeowner would need to pay for any additional costs.

Landscaping options could include putting in drought resistant and native plants. We also hope to build local partnerships to help educate homeowners about gardening without pesticides and using less water. We will consult with the local public works departments, Tacoma-Pierce County Health Department's Natural Yard Care Program, and other local experts during the yard program design.

2.7 Addressing yards below Ecology's action level for cleanup

The Asarco settlement should cover cleanup of all yards with average arsenic over 100 parts per million (ppm). However, we expect to find many properties with arsenic between the 20 ppm state cleanup level and our action level of 100 ppm. For those yards, where people are still at risk, we plan to educate residents about healthy actions that can reduce exposure to contaminated soils.

Many commenters and public meeting participants had questions and concerns about the yards between 20 and 100 ppm:

- **Can Ecology use leftover funds to clean up these remaining yards?** Possibly. We plan to reevaluate our funding every two years, to see if we can offer cleanup for yards below 100 ppm, as well as other types of properties with high levels.
- **What if homeowners paid part of the cost based on arsenic level in their yard?** Once the yard program is up and running, we will look into whether we can reimburse homeowner cleanups in some way. Right now, we do not have a way to reimburse private cleanup costs. If we were able to provide funding, we would likely prioritize the yards with the highest arsenic levels.
- **Classifying 40 ppm arsenic as moderate is wrong.** We do not consider 40 ppm to be "safe," but it does pose less risk than 100 ppm arsenic. Residents with yards with moderate contamination will receive outreach and education about how to reduce exposure to soils. At these levels, covering bare soils and using healthy actions like taking off shoes at the door can greatly lower your risk.
- **This puts future home buyers at risk.** Part of the benefit of the yard sampling is that future homeowners can access data on the property they are buying through Ecology's public database (see next section). Ecology and local health departments can also provide outreach and education.
- **Educate people about cleaning up their own yards.** Outreach will focus on making yards safer. Simple and inexpensive landscaping and maintenance projects can reduce exposure to soils. For example, lawns are a good protective barrier, so reseed bare patches. Also, mulching around plants covers bare soil and helps keep the ground moist.
- **Can homeowners afford to do their own cleanup?** Ecology's cleanups may cost $15,000 - $30,000 per yard because they involve digging up and disposing of tons of highly contaminated soil. However, we do not encourage removing contaminated soil from your own yard, unless it is part of an existing project. For moderate contamination, covering contaminated soils is more cost-effective and still provides protection.

2.8 Database of yard sampling results and cleanup information

The Interim Action Plan proposes building a public database for tracking yard sampling and cleanup data. We will work with local governments, real estate agents, and the public to make sure the database is accessible and helpful.

We heard strong support, but also serious concerns about making this information public, including one suggestion for a law to protect data from public disclosure. We do not plan

to pursue legislation. In fact, the database will be crucial for educating future homeowners.

Clarification: In Chapter 8.3 of the Interim Action Plan, Ecology's policy is to not list yard cleanups on the Confirmed and Suspected Contaminated Sites List (CSCSL). The CSCSL does not usually include residential properties—most of the sites are larger commercial or industrial sites. The Tacoma Smelter Plume database will include yards and child play areas, and will be for outreach rather than regulation.

3. Disposal Area for Homeowners Doing Their Own Cleanup

Several people suggested that a soil disposal "dump area" be created for property owners who need to remove soil from their yard or who want to do their own cleanup. The goal is to provide a convenient and low-cost place they can take Tacoma Smelter Plume contaminated soil. Another option suggested was to provide free local disposal containers, so home owners don't have to pay to move the soil.

Ecology is working with the Environmental Protection Agency (EPA) and the Tacoma-Pierce County Health Department on this issue. The three agencies are exploring options for a soil disposal program for north Tacoma and Ruston residents as required by EPA's Record of Decision. We could apply lessons learned from that process to the Ecology-managed yard cleanup program, which we are now designing. We could also explore a similar program for areas with moderate contamination during Phase II of the Interim Action Plan.

We had a related question about whether any areas have contamination from past hauling of contaminated dirt, sand, or gravel. Arsenic binds to soil organics, like decomposing plant matter. Therefore, we tend to not find it in sand or gravel. We are not aware of any areas contaminated by soil moved from other parts of the plume. However, it is possible. We recommend testing your soil if you are unsure. Always ask for arsenic and lead test results when you buy soil.

4. Phase Two Actions – Soil Sampling and Cleanup During Development

Chapter Seven of the Interim Action Plan outlines ideas for "Phase Two" actions. These include addressing soil contamination during development.

One long-term strategy is to encourage or require soil sampling and cleanup during development projects, including redevelopment. Ecology is not requiring local permit offices to require sampling or cleanup during development. Currently, we do not have the authority to do so and we understand that this is an added workload and cost. Any

future decisions will involve local governments and will also go out for public comment. We will continue to provide technical assistance and work with permit offices on encouraging sampling and cleanup.

4.1 Soil Sampling

We heard opposition and support for requiring soil sampling. Those opposed to the sampling cited the cost. We did hear support for requiring soil sampling, citing similar testing requirements already in place. One commenter suggests using the development type and volume of soils to decide whether land needs sampling. We will continue to work with local governments and other stakeholders on whether, and how, to require soil sampling.

4.2 Cleanup

The idea of requiring cleanup raised a number of concerns about added cost for development projects and increased workload for local permit offices.

We were asked to subsidize cleanup costs if it became a requirement, especially for smaller projects, homes, and play areas. One commenter pointed out that sampling and soil handling has extra costs beyond normal project costs. We will look at costs to smaller projects—especially additions—as we plan Phase Two. Right now, we do not have a way to reimburse private cleanup costs. If we were able to provide funding, we would likely prioritize cleanup of existing residential yards.

Land owners can join Ecology's Voluntary Cleanup Program (VCP) to get technical assistance. Some have been concerned that program fees may deter land owners from joining. **In response, we are no longer charging a fee for VCPs that have only Tacoma Smelter Plume contamination.** Staff from Ecology's Northwest and Southwest Regional Offices who do these reviews will have their time covered by Tacoma Smelter Plume project.

One commenter asked about preventing fraud during cleanups, in particular ensuring that properties receiving a No Further Action (NFA) opinion actually do the cleanup. Ecology will have oversight over VCP projects. This means we will review all documentation to make sure that cleanup was done properly. If not, we can withhold the NFA. Ecology will not have oversight of independent cleanups.

4.3 Model Remedies and Cleanup Levels

The Model Remedies provide sampling and cleanup guidance for Tacoma Smelter Plume contamination. Depending on arsenic and lead levels, one may use one or more of the four cleanup options without a site-specific Feasibility Study. Cleanups done using the Model Remedies can get Ecology approval under the Voluntary Cleanup Program.

One comment was that model remedies may be appropriate for large developments, but overwhelming to smaller-scale projects. **In response, we will design a handout that includes background on the plume, a map, lab information, a summary of cleanup options, and an Ecology contact. We will distribute this to local permit offices.**

In the meantime, people can still use the Model Remedies Guidance. It was written, so that individual property owner could take their own soil samples and provide guidance about selecting a cleanup method that works for them. If a property owner has questions about Model Remedies Guidance, please contact Ecology.

The cleanup level is the threshold at which Ecology considers an area to be clean. The Model Remedies cleanup levels are 20 parts per million (ppm) for arsenic and 250 ppm for lead. One commenter asked to allow alternative "Method B" or industrial cleanup levels:

- The Method B, unrestricted use, cleanup level is 0.67 ppm—lower than the current cleanup level.
- The cleanup level for Method C, industrial use, is 88 ppm—higher and less protective than the current cleanup level.

The cleanup level of 20 ppm reflects natural background and is protective of human health and the environment.

Another commenter asked to increase the level at which Ecology can issue a No Further Action Letter. The Interim Action Plan sets the cleanup levels for the site. Cleanups must meet this cleanup level to be given a No Further Action decision by Ecology. The plan also sets remediation levels for the various model remedies. For example, mixing is only a model remedy when arsenic is below 40 ppm.

Independent cleanups may use higher remediation levels, but cannot use the Model Remedies and must do a feasibility study. The feasibility study must demonstrate that the chosen remedy meets cleanup levels of 20 ppm arsenic and 250 ppm lead at the end of remediation. To get a No Further Action decision, the Feasibility Study will need to be approved by Ecology.

4.4 Cleanup requirements for independent cleanups vs. Ecology cleanups

Ecology's yard cleanup program will meet the same cleanup levels as independent cleanups. We expect to mainly use excavation and removal, which is a permanent remedy. However, the program must balance the two goals of reducing risk for as many people as possible, and cleaning up whole properties.

5. Phase Two Actions - Addressing Contamination During Real Estate Sales

Chapter Seven of the Interim Action Plan outlines ideas for Phase Two actions. These include addressing soil contamination during property sales. The plan proposes a number of possible approaches for managing soil contamination risks through real estate sales. The approaches range from voluntary real estate agent education to requiring soil sampling before sale. We received a number of comments on the proposed ideas, and one new outreach idea.

Real estate was one of the main topics of the public meetings, follow-up questions, and comment letters. **In response, we are accelerating our work on this part of the plan. We are beginning to meet with real estate agents and planning to pilot some educational tools. One major initiative is to promote the disclosure of arsenic and lead from the Tacoma Smelter Plume.**

5.1 Impacts to Property Values

One of the biggest concerns was that the cleanup project would hurt property values. We heard questions about whether identifying a "high zone" would make homes harder to sell. What if Ecology found arsenic just below the action level of 100 parts per million (ppm) and wasn't able to clean it up?

We urge home owners in the high zone to participate in the free yard cleanup program. Even if we do not clean up your yard, you will still know what's in your soil and how to reduce your exposure. The same types of simple landscaping projects that improve property values can also cover contaminated soil. Examples include reseeding bare patches in your lawn or adding beauty bark to your landscaping.

Home buyers should consider soil contamination as one of many factors in purchasing a home. In fact, many areas of the country have soil contamination issues—here, we have public awareness, free home soil testing for certain areas, and outreach programs. Ecology and Pierce County health departments can help home buyers find out if a yard has been cleaned up, and if not, how to reduce exposure to soil.

5.2 Disclosure

We heard a great deal of support for including arsenic and lead from the Tacoma Smelter Plume in Form 17. Form 17 is a property disclosure form all sellers must fill out. Currently, it does not mention arsenic and lead, or the Tacoma Smelter Plume. Suggestions include adding arsenic and lead (from any source) to Form 17, or creating a handout about the Tacoma Smelter Plume. We are working on the handout idea first, and exploring how to change the form itself.

5.3 Education for Real Estate Agents, Sellers, and Buyers

Commenters and public meeting attendees were generally supportive of educating real estate agents. Ecology plans to reach out to real estate agencies and organizations throughout the plume area, beginning with the most contaminated areas. We can offer presentations, brochures, maps, and other educational tools. We are also looking for input and other ideas for addressing soil contamination through real estate sales.

One commenter suggested working with local Chambers of Commerce to provide brochures for relocation packages for new homeowners. We will consider this as an outreach tool, especially in the high zone of the plume.

5.4 Requiring Soil Sampling Before Sale

Written and verbal comments both supported and opposed requiring soil sampling before a property is sold. Such a requirement would likely take changing state law, which could be difficult. We plan to evaluate this as part of Phase Two and address it in the future.

Some suggested that the cost of sampling would place an unfair burden on sellers. Currently, the Tacoma-Pierce County Health Department offers free home soil testing as an outreach tool. Ecology plans to start a similar program for parts of King County. If sampling became a requirement, there could be a way to assist homeowners with the cost.

5.5 Use of Maps and Databases in Real Estate Transactions

Several commenters had ideas for how to share soil contamination data with the public. For example, use county geographic information systems (GIS) to make arsenic and lead data available online. The plan is to offer local governments and their customers access to Ecology's database of sampling and cleanup information.

Over the past six months, we heard many comments about the Tacoma Smelter Plume map. Some feel that the arsenic level color coding targets certain areas of the plume. They also would like to see the data points used to create the map. Some voiced concern that some areas did not have enough soil samples to accurately determine the zones.

A new, improved map will be ready around the end of 2012. It will use more sampling data and show the probability of an area having a certain level of arsenic. Ecology will also look at areas where more sampling will better inform the map. The current map shows an upper estimate of arsenic levels. While this may appear alarming, we feel it is important to let people know how high levels *could* be in their area.

For a simpler map, the Soil Safety Program Service Area map (map on page 9) shows the area Ecology and health departments are most concerned about. Within this boundary, there is a higher likelihood that yards could have arsenic over cleanup level of 20 ppm. This is also where we focus more of our outreach programs.

6. Phase Two Actions – Streamlining Cleanup

Chapter Seven of the Interim Action Plan outlines ideas for "Phase Two" actions. These include streamlining the cleanup process by providing local technical assistance and certifying consultants to do soil sampling and cleanup. We received one comment noting that consultants did not need a special certification, as they should be able to use model remedies. Over the next year or two, we will gather feedback on the model remedies to see if training is needed.

7. Working With Other Government Agencies

Chapter Seven of the Interim Action Plan outlines ideas for "Phase Two" actions. These include working with other agencies to address contamination during development and redevelopment projects on their lands. We received comments from local governments and other stakeholders throughout the plume:

- **Do not shift the cost of soil safety to the local level through unfunded mandates.** This comment also relates to Section 4.2 and cleanup during development. We can lessen the costs by continuing free technical assistance to local governments. For example, Ecology is providing technical assistance to property owners about how to sample their soil. We review soil sampling results and provide recommendations to the local governments.
- **Settlement funds going to governments should not be used for cleanup of public properties.** The concern is that this will draw money away from residential and play area cleanups. Under the current plan, Ecology does not plan to pay for cleanup of public properties except for the existing child play areas.
- **Ecology should help cities and towns develop best management practices (BMPs) and specs for their capital improvement projects.** Ecology will work with any jurisdiction wanting to incorporate soil safety into public works projects.
- **The creation of a "hazard zone" may deter development and redevelopment.** We understand the concern with the term "hazard zone." Local governments will help shape any future map overlays, including how we present it to the public.
- **However, there is still a need to institutionalize soil information and provide overlays for local planning.** Local governments and the public will have access to Ecology's database of soil sampling and cleanup data starting later in the summer of 2012. This database is searchable by address and has mapping functions. We hope that local governments will incorporate the soil mapping function into their local GIS systems.

8. Education and Outreach

We heard many good ideas for expanding our outreach efforts, and will consider them all.

8.1 Places where children play

Ecology and local health departments do provide outreach to schools, childcares, park districts, YMCAs, and Boys & Girls Clubs, especially those participating in the Soil Safety Program.

8.2 Ethnically-diverse and non-English populations

Reaching ethnic and non-English-speaking communities is an important part of our outreach programs. The health departments have targeted eight of the most common

languages spoken in Pierce and King Counties besides English. They have also come up with culturally-sensitive ways of reaching people.

Pierce County has a special outreach program for the Slavic community, designed based on feedback from surveys and focus groups. Information about gardening was very important, since so many families use community gardens. The outreach message about taking off shoes was less important, as most families reported that it was already a common practice. As suggested, we will also contact the Korean Women's Association.

King County has done radio and newspaper advertising in Spanish, Korean, Vietnamese, and Cantonese, and has some materials available in Amharic, Cambodian, and Somali. They have also worked with community groups to provide outreach at fairs, festivals, and meetings.

8.3 Places to give out information

One new idea could reach a very large number of households—sending information in utility bill or property tax statement inserts. Some suggested giving out information through churches, charity organizations, homeowner's associations, garden stores, doctor's offices, and pharmacies.

We have already tried some of these ideas. For example, Thurston County stocks home and garden stores with brochures, and King County has provided outreach through doctors. We have had positive feedback, especially from parents with young children, who learned about the issue from their doctors. In the future, we will try doing outreach through these other avenues.

8.4 Groups and industries to include or partner with

We heard suggestions to work on outreach with garden clubs, Master Builder groups, Chambers of Commerce, FutureWise, businesses, contractors, real estate agents, and developers. Some of these groups have been involved in Tacoma Smelter Plume outreach and we hope to build more relationships in the future.

Next steps include outreach to builders and developers about the Tacoma Smelter Plume Model Remedies and voluntary cleanup. See Section 5 for more about our plans with the real estate industry.

8.5 Start a stakeholder advisory group

Ecology, the Tacoma-Pierce County Health Department, and EPA are planning to reconvene a Ruston and North Tacoma area advisory group. The purpose is to help plan outreach for residents living in the Superfund cleanup area—the one square mile closest to the former smelter. We also plan to have focus groups during the yard cleanup program design (later in 2012). Some longer-term advisory groups may arise out of the focus group process.

8.6 Measuring the success of outreach

Ecology measures the success of outreach through the number of people reached and surveys on awareness and behavior change. Every three months we look at how many

people we are reaching through our different methods. This includes broad-based outreach like television ads and mailings, and personal interactions like home soil testing visits or classroom presentations.

Tacoma-Pierce County Health Department and Public Health—Seattle & King County have done surveys in different communities within the plume. These surveys ask about awareness of the issue, how people find information, and whether they have changed their behaviors, like taking off shoes or vacuuming more. We will continue to do these surveys to look at trends over time.

9. Health Risks

Many people asked questions about the health risks from arsenic and lead, and whether our cleanup levels and action levels were protective enough or too protective.

9.1 Eating food grown in contaminated soil

Most plants, with the exception of leafy greens, take up very little arsenic and lead into their edible parts. The main concern is accidentally eating contaminated dust or dirt stuck to the outside of the vegetables, fruits, nuts, and berries. We recommend washing produce well before eating. Use a scrub brush to remove dirt from root vegetables, in particular.

We also recommend gardening in raised beds. Make sure the soil you bring in is not contaminated--ask your soil supplier if they test for arsenic and lead. Also, make sure that you are not using wood treated with arsenic (known as CCA wood).

9.2 Action levels, cleanup levels, and risk to human health

Ecology set an action level of 100 parts per million (ppm) for arsenic for yard cleanups. Arsenic over 100 ppm in residential yards poses an unacceptable risk and needs cleanup. We estimate that being exposed to 100 ppm arsenic in soils may increase cancer risk by as much as **150 cases in one million people**.

Our cleanup level is 20 ppm for arsenic. This means anywhere we do cleanup, the levels must get below 20 ppm. The additional cancer risk at **20 ppm is 30 in one million**. For more about how we set the action level and cleanup level, including for lead, please see our fact sheet at: http://www.ecy.wa.gov/biblio/1109095.html.

One commenter suggested that a better understanding of the risks at lower levels of arsenic might help Ecology get more compensation. The $94 million in funding we have is from a bankruptcy settlement, so we have no way of getting more compensation. However, our agency is always looking at new science to help inform our cleanup work.

9.3 Linking Tacoma Smelter Plume contamination to health effects

A common question was whether Ecology could do a study to "prove" a link between Tacoma Smelter Plume contamination and health effects in the local population. It was also suggested that we look beyond cancer outcomes and study heart disease and diabetes, which are also linked to arsenic exposure.

Regardless of what health studies show, Ecology has a legal obligation to protect the public. In the Tacoma Smelter Plume the risks may be small relative to our ability to measure them in health studies. However, the risks are large enough to be of concern in terms of public health goals and state cleanup law. The risks may also be unacceptable for many people.

We know that even low doses of arsenic and lead are toxic to humans. We also know that children are at greater risk. Studies of communities living near smelters and other sources of metals, especially lead, show a link between soil contamination and human exposure. Therefore, we can assume that Tacoma Smelter Plume contamination poses a threat to human health.

Several health studies looked at health outcomes in parts of the Tacoma Smelter Plume. However, they were unable to determine whether or not smelter contamination contributed to health problems in people who lived in the area. The main reasons[3] are:

- **Health studies are often not good at measuring small effects.** In many cases, health studies are not good at measuring the effects of environmental contamination. They may be able to find large increases in illness, but are often unable to detect the smaller increases that risk assessments predict will occur from the contamination.

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[3] A 2001 study by Public Health – Seattle & King County discusses some of these issues in more detail: "Review of Available Data on Types of Cancer Related to Arsenic Exposure: Vashon-Maury Island, Washington State and Washington State Counties 1980-1998." http://www.kingcounty.gov/healthservices/health/news/2001/~/media/health/publichealth/documents/toxic/vmicancerreport.ashx

The comparison of cancer rates among Vashon-Maury Island (VMI), King County, and Washington State is summarized on page 2: "When comparing rates, no statistically significant differences were found between VMI and the state as a whole or King County."

The report went on to discuss limitations of the study (page 3, emphasis added):

> However, limitations in the study datasets--especially the small number of health events on VMI and the lack of information on detailed exposure to arsenic--limit the conclusions that can be drawn about excess risk. In general, the smaller the number of deaths or cases involved in the comparison areas, the larger the observed differences need to be to rule out random variation as a cause of the difference. In addition, the lack of detailed exposure information means that true "exposed" and "unexposed" populations cannot be assembled for comparison. ***Thus, although this analysis probably rules out a very large increase in cancer risk to the population of VMI, the study is not sensitive enough to detect a smaller increase in risk.***

- **Past exposures can be especially hard to estimate.** In contaminated areas, studies look at groups of people to see whether exposure to contamination has caused more illness. A study's ability to determine this depends how well people's exposure has been measured and how carefully their illnesses have been diagnosed and counted. The less accurate the measurement, the harder it is to show a connection. It is also more likely that no connection will be found, even if one really exists.
- **Health effects can take decades to show up.** Cancers caused by arsenic don't normally show up until 30 to 40 years after exposure has begun. If we find a cancer by arsenic today, the exposure may have started more than 30 years ago.
- **People moving in and out of an area make it hard to see an effect.** Many people living in the area 30 years ago have moved away, so a study would not be able count any of their contaminant-related cancers. Many new people have moved into the area during the past 30 years. It is too soon for them to have observable cancers caused by the contamination. Therefore, it is very hard for a health study to show arsenic-related health effects.
- **Arsenic-related health effects have many possible causes.** Illnesses linked to arsenic, such as cancer and heart disease, can be caused by many things not related to the contamination. These include diet, smoking, and exposure to other chemicals. A health study must rule out the effects of these factors. Otherwise, you cannot tell how much arsenic contributed to the illnesses.

9.4 Concern about illnesses in a neighborhood

We heard from several people concerned about possible disease or cancer clusters in their neighborhoods. They asked if there could be a link to soil arsenic and lead, and if the Washington Department of Health (DOH) could do a study.

We discussed some of problems with doing a health study in the last response. A good health study would likely be expensive, intrusive, and take many years in order to provide answers. DOH would need to find many people who had lived in the area at least 30 years ago. They would need to allow researchers to assess their diets, lifestyles, and environmental exposures to many chemicals, including Tacoma Smelter Plume arsenic and lead, throughout their lives. Even then, the results might not be conclusive.

For more information about community health studies, please visit:
http://communityhealthstudies.org/

9.5 Should I get tested for arsenic and lead?

Many health agencies recommend blood lead testing for children, since there are many sources of exposure, regardless of where they live. Elevated test results let families know to check the child's environment for possible sources of exposure, including soil. Adults can also have a blood lead test. Your doctor can provide more information about how to get tested. They can also help you to interpret the results using national guidelines.

Health agencies do not typically recommend arsenic testing. First, the results vary greatly depending on how recently you were exposed to arsenic. Certain foods, like rice and fish, can increase your arsenic levels for a short time and make it difficult to interpret the test results. Second, there are no clear guidelines for what a "normal" arsenic level is, and what level is a health concern.

If you have arsenic test results and need help understanding them, please contact Jim White at the Washington Department of Health, (360) 236-3192 or Jim.W.White@doh.wa.gov.

9.6 What is the risk to pets?

Arsenic poses a larger risk to humans than most animals, including dogs and cats. However, pets can bring contaminated soil into the home on their fur and paws. We recommend regularly bathing outdoor pets and wiping their paws before coming inside. Vacuuming regularly and damp dusting helps reduce any contamination that does make it inside the home.

Responses to Technical Comments

10. Model Remedies and Guidance

Commenters suggested some changes to the Model Remedies and offered edits to make the guidance clearer. They also had advice on how to encourage people to use the model remedies. We made some change to the Model Remedies and we incorporated many of the clarification edits in the final version of the guidance (noted below). We are also working on outreach materials for local planning offices, to help property owners decide if they should use the model remedies.

10.1 Major edits to the Model Remedies in Chapter 11

Ecology received more than 20 comments asking about using x-ray fluorescence spectroscopy (XRF) for soil sampling. XRF is a device that can provide quick test results in the field. Some samples still need to be sent to a lab for comparison, but most of the sampling can be done on site. The Model Remedies now allow the use of EPA Method 6200 for XRF.

We are removing "institutional controls only" from the Model Remedies. We had hoped to provide guidance on how to determine whether habitat should be left in place with institutional controls. In some cases, there is more value in preserving a natural area, than in destroying habitat just to clean up the soil. Unfortunately, we do not have this guidance yet. Therefore, projects must do a separate disproportionate cost analysis to get Ecology approval to leave contamination in place.

10.2 Major edits to the Model Remedies Guidance

Forest duff can sometimes have high levels of arsenic and lead. These materials should not be mulched or reused. Instead, they should go to a landfill along with any contaminated soils. As a result, we added guidance on forest duff sampling, which is very similar to soil sampling.

Several commenters made the point that mixing may be the best cleanup option in areas where soil is expensive to remove or bring in. For example, Vashon Island has the added cost of ferry transport. For soils with less than 40 parts per million arsenic, where soil transport is difficult or expensive, one should consider mixing as a remedy. The benefits, in some cases, may outweigh the cost of mixing machinery, labor, and extra soil sampling.

10.3 Edits not made

Comments suggested sampling the top two inches of soil to get a better idea of the highest levels of arsenic and lead, and because people are most likely to be exposed to the top layer. We opted to keep the first sampling interval at six inches for two reasons:

1. Most areas have some disturbance of the soil surface, which means that contamination is likely deeper than the top two inches.

2. Cleanup decisions still require data at least down to 12 inches. Requiring a two inch deep sample would add to the cost and time, without providing much additional data to help in planning cleanup.

There was also a request to require 6-12 inch samples at every tenth sample location. The guidance requires a 6-12 inch sample at every fourth location. With every tenth location, many decision units would have only one depth sample. This makes it harder to find out if there is contamination in the 6-12 inch range.

10.4 Cleanups must get local government permits

Independent cleanup projects must get all applicable local permits. The guidance does not specify these requirements because the Tacoma Smelter Plume covers so many jurisdictions. **We noted the need for local permits in the guidance disclaimer, the introduction, and the "Planning for Cleanup" chapter.**

Cleanup done by Ecology or under Ecology's formal cleanup program only need to meet the substantive requirements of local permits.

10.5 Maintaining institutional controls

One commenter had concerns about long-term protectiveness where land use may change over time. The two non-permanent model remedies—capping and consolidation and capping—require institutional controls.

For Ecology-managed cleanups, we plan to mostly use permanent remedies. For the yards we cap, we will provide homeowners with binders that explain where the cap is and how to maintain it. As part of our periodic review process, at least every five years, we will check on many of these yards to make sure the cap is in good shape. Future owners will be able to find this information through a public database.

For cleanups needing formal Ecology approval, we require an environmental covenant to enforce the institutional controls. Any change in land use that affects the remedy will require Ecology approval. For independent cleanups, Ecology has no way to enforce institutional controls.

10.6 Open space

As noted in 10.2, we are removing "institutional controls only" from the Model Remedies for now. Within the next year, we hope to have guidance for dealing with open space. In the meantime, land owners are encouraged to enter the Voluntary Cleanup Program for technical assistance. This program is free for sites with only Tacoma Smelter Plume contamination.

10.7 Cap thickness

The Model Remedies require a thicker cap when arsenic and lead levels are higher. The purpose is to provide extra protection in case a land owner neglects to maintain the cap. This is important where contamination poses a greater risk to human health.

10.8 Phytoremediation

Around 2005-2007, Ecology did a pilot study on whether Chinese brake ferns could clean up Tacoma Smelter Plume contamination. Although the ferns do take up arsenic and other metals, they do not grow well in this climate. Also, the ferns themselves become hazardous waste. Arsenic levels in the fronds were high enough to seriously harm a child if they accidentally ate one.

11. Evaluation of Cleanup Options

We received one letter with several comments and questions about the way we selected the overall cleanup approach. We have addressed them below. For more detail, please see the November 12th letter from Michael Meyer.

11.1 Do not use No Action as a baseline for comparing remedies

Mr. Meyer is correct that Ecology should not use No Action for a baseline. We should use the most permanent remedy that is practicable. WAC 173-340-350(8)(c)(ii)(A). We deleted this reference because we used the "Preferred Option"--Alternative B-Phased Prioritized Action—as the baseline. We can use a No Action alternative for comparison—this is often done at other cleanup sites—but it cannot be the baseline alternative.

Alternative C- All Properties Sampled and Remediated could be seen as the most permanent remedy. However, we do not have to use it as the baseline because it is not practicable.

11.2 Why did Ecology assume there is not enough funding to clean up the whole plume?

Mr. Meyer is correct that Ecology did not document the cost to clean up the entire plume through a disproportionate cost analysis. To clean up the whole plume may cost billions of dollars. There are potentially over 700,000 properties impacted by the Tacoma Smelter Plume. At an average of $30,000 to cleanup a standard lot, this translates into $20 billion. Clearly this is disproportionate.

11.3 Model Remedies Feasibility Study Disproportionate Cost Analysis is not rigorous enough.

The purpose of the Feasibility Study for the model remedies was to develop several model remedy options for property cleanup, depending on the circumstances. We compared costs among alternatives to demonstrate relative costs (Appendix C, Table 6-1). A disproportionate cost analysis is not needed because Ecology is not recommending that only one remedy be used.

11.4 Selection of Remediation Levels

For a quantitative evaluation of remediation levels see the Appendix D: Cleanup Levels, Action Levels and Human Health Risk.

12. Waste Disposal

Tacoma-Pierce County Health Department suggested an edit to Section 9.3.4 Solid and Hazardous Waste Management. **In response, we are updating this section to note other landfill types that may be able to accept contaminated soils.**

13. State Environmental Policy Act (SEPA) Checklist

Clarification: This SEPA checklist covers most Interim Action Plan activities, including Ecology's proposed yard cleanups. Certain Soil Safety Program cleanups, especially larger park projects, may still require SEPAs as part of local permitting requirement. Independent cleanups and Voluntary Cleanup Program projects must still meet any applicable SEPA requirements.

Ecology received comments on three topics:

1. **Soil volume going through transfer stations.** While landfills may be able to handle the volume of soils, transfer stations may not be able to. **We will work with local waste management staff during the yard cleanup program design to better understand and reduce the impacts of soil disposal.**

2. **Reducing the impacts of truck traffic.** As requested, **we will try to schedule cleanup work to avoid peak traffic hours.** This is especially important for trucks carrying soil to and from the site, and for ferry travel.

3. **Impacts to recreational uses.** Commenters noted that widespread use of institutional controls could restrict recreational uses. As stated in the SEPA Checklist, we do not expect the proposal to displace recreational uses. For those park and camp play areas in the Soil Safety Program, the cleanup work only temporarily limits access. Institutional controls like signage are encouraged, and mainly consist of signage, not fencing.

14. Health and Safety Requirements

Commenters asked Ecology to clarify several issues related to health and safety regulations. What are the requirements when hiring subcontractors for cleanup or any other site work involving soil excavation by yard maintenance, construction, or utility workers? Also, do landscape maintenance workers need to be HAZWOPER trained and is that really practical?

Washington State Department of Labor and Industries laws and regulations govern health and safety at worksites. Employers must ensure workers' safety. The Inorganic Arsenic Rule (Chapter 296-848 WAC) governs work within the Tacoma Smelter Plume and other areas with soil arsenic contamination.

Ecology will continue to refer to Labor and Industries worker safety regulations and guidance for area-wide soil contamination. We will work with Labor and Industries to answer these questions and possibly create guidance for employers. The goal is for employers to inform subcontractors and workers about health and safety measures related to Tacoma Smelter Plume contamination.

Appendix A: Comment Letters

Tacoma Smelter Plume
Public Comment Form

DEPARTMENT OF ECOLOGY
State of Washington

This form is for commenting on the draft Interim Action Plan (cleanup plan). In early 2012, we will publish a Responsiveness Summary that lists all comments and responds to common questions and concerns. You can submit comments tonight or mail them to Cynthia Walker, TCP-SWRO, PO Box 47775, Olympia, 98504-7775 by **December 20, 2011**. Send e-mail comments to Cynthia.Walker@ecy.wa.gov.

NAME: MIKE MONAHAN

ADDRESS: 6102 N PARK AV

CITY: TACOMA ZIP: 98407

COMMENTS

(Please use back side of this form if you need more room)

Is it possible to provide access to a "dump area" for folks who are cleaning up their contaminated yards on their own (ie - a place that does not cost a lot of $$ to get rid of the "dirty" dirt)

Thanks,

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Public Comment Form

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NAME: Marie H. Jurich (Mrs. George M.)

ADDRESS: 7231 S. 15th St.

CITY: Tacoma, WA ZIP: 98465-1501

COMMENTS

(Please use back side of this form if you need more room)

We had our soil tested & found we had a level of 218 of arsenic & 360 of lead (11 times the minimum) (18 times the minimum) design into your could you program a way towards testing remediate the soil in ~~home~~ first with very high content not just area by area?

Our house is a 3-bedroom rambler & would be ideal for a young family (if the soil is remediated.)

— Marie H. Jurich

→

Our home is behind the gymnasium of St. Charles Borromeo school. Dust blowing into their property.

From: John Zinza
Date: November 3, 2011
To: Cynthia Walker
Subject: Comments, Draft Interim Action Plan

John is currently on Tacoma Smelter Plume staff

Plan Key Comments Areas:
Should we encourage or require sampling and cleanup during development?

Comment: I believe there should be a sampling requirement during development. The requirement to sample could be determined via a criteria based matrix that covered information about type of development, volume of soils to be removed, etc.

My rational for requiring sampling is based on protecting the worker, and taking appropriate dust control measures. I don't believe that just informing the worker of the hazards of arsenic is enough. Sampling results will provide the developer and the worker with the basis to take appropriate personal protection actions as necessary. The details of this requirement could be worked out by implementing a pilot program with state agencies that have construction projects within the Tacoma Smelter Plume. This same rational applies to dust control. Sample results can be the basis for determining the extent and degree of dust control and monitoring above and beyond BMPs for erosion and sediment control.

How can we help educate home buyers?

Property disclosure: The property disclosure form you referred to is impressive since it covers just about everything a potential property owner should know. I recently filled the form out and can recall the environmental section with the yes or no or I don't know responses. It really left me with an impression to make sure I disclosed everything I knew. Potential home buyers need to be able to make informed decisions about a property purchase. This is one tool to make it happen.

County Parcel Systems: GIS parcel information systems such as the King County Parcel Viewer Interactive Property Research Tool are incredible tools in researching a property. The tool let's you zoom into a parcel and you can obtain a property report, including searches and reports on King County Department of Development and Environmental Services permits and activities. The King County Department of Assessments has a place for Environmental information in the parcel data base. Since there is a place for environmental information there is a responsibility to populate it correctly. This could be done through a permit process.

Chamber of Commerce: One of the challenges will be to educate people that are contemplating moving to the area. A great place to receive information on an area is through the local Chamber of Commerce who commonly offer a relocation package. A relocation package could have an informative brochure about the arsenic dangers in the area and what is being done about the problem. It will be important to put a positive view on the brochure about the historical background on the smelter and what it meant to the area and to the nation. The brochure could also provide web addresses for additional information including how to research a property prior to renting or purchase.

From: Marshall Hampton
Date: November 5, 2011
To: Cynthia Walker
Subject: Cleanup

Can we include a removal by homeowner option where the homeowner removes the contaminated soil by themselves or a homeowner paid contractor, places it in a container provided by the program and is hulled off to a disposal site by the program, at no additional cost to the homeowner?

Tacoma Smelter Plume
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NAME: Emma Newby

ADDRESS: 13617 SW 235th St.

CITY: Vashon ZIP: 98070

need email - renewby@centurytel.net

COMMENTS

(Please use back side of this form if you need more room)

If I want to do a voluntary clean-up, I need to sample my soil, so where can I send it and what the cost?
(I am not in the high toxicity)

Good idea to oblige Real Estate to declare contamination!

Help + education from Garden Club

Tacoma Smelter Plume
Public Comment Form

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State of Washington

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NAME: JONATHAN KATZ - REP. FOR MORNINGSIDE FARM ON VASHON.

ADDRESS: 5391 PAR FORE DRIVE SE

CITY: PORT ORCHARD ZIP: 98367

COMMENTS

(Please use back side of this form if you need more room)

IF WE VOLUNTARILY DO ALL RESEARCH REQUIRED + SAMPLING? CAN'T WE GET PRIORITY ON THE HELP WITH ACTUAL CLEAN-UP.. SEEMS IF WE SPEND THE RESEARCH + SAMPLING MONEY WE SHOULD RECEIVE HELP. ESPECIALLY IF WE RUN A CAMP WITH SMALL CHILDREN.

From: Lynda Brothers
Date: November 10, 2011
To: Cynthia Walker
Subject: Comment on smelter

I found the on line interactive map to be inadequate as was the entire web site. This so-called plume is spread all over the PR pieces and internet yet by the Department's own comments it is based on very few sample locations. Nonetheless those locations are not shown clearly anywhere. In fact, more than just inadequate communication, I think the map and web site borders on irresponsible! Ecology has put out a plume map without showing precisely where you have samples; and as such the map can easily impact property values and/or real estate transactions. And it can do so irrationally and without sufficient basis. This is really a waste of resources. Please provide quality, meaningful work not some watered down pablum aimed at a sixth grader.

Secondly, I'm not impressed that Ecology calls this public comment on a "clean up plan" – I could not find any meaningful "cleanup." This is comment on a Public relations campaign which as stated above is based on completely insufficient data is some areas. All in all, I think the Department should be doing a more comprehensive and precise job rather than spending time and money on a PR piece that fails to provide necessary information for a reader to evaluate the work being considered.

Thanks.

Tacoma Smelter Plume
Public Comment Form

DEPARTMENT OF ECOLOGY
State of Washington

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NAME: ROBERT BLANCHET

ADDRESS: 21524 TRAMP HARBOR RD

CITY: VASHON ZIP: 98070

COMMENTS

(Please use back side of this form if you need more room)

THANK YOU FOR ALL YOUR GOOD INFORMATION -

2 COMMENTS -

I FEEL THAT WITH YOUR VERY LIMITED RESOURCES YOUR FOCUS SHOULD BE DIRECTED TOWARDS =

- SAMPLING SOILS, TO GET A MORE DETAILED PICTURE OF THE ACTUAL EXTENT OF THE CONTAMINATION.
- A HEALTH SURVEY
- EDUCATION
- ~~HELP (2 PROPERTY~~

From: Carl Sells
Date: November 11, 2011
To: Cynthia Walker
Subject: Asarco Cleanup

The state required remediation above 20 PPM is going to impact almost every property on the island. Long term implications that individual property owners will be responsible for remediation that is not covered by the Asarco funds, which only kick in at 100 PPM, is going to kill our property values. Most property owners will not have the resources to do the remediation. No one will want to buy property on the island. No lender will want to finance on the island. No company will want to expose their employees to the pollution by locating here and no one will want to raise their children here. The state is going to create a wasteland.

Yesterday I met with the major real estate brokers on the island and gave them a copy of the map you provided of the "high arsenic" portion of our island. We discussed the short and long term implications of the project and the impact on the market in general. It may be a good time for you to do a follow-up with all of the island real estate professionals. I'm sure you will get a good turnout. I'm sorry to say that the response was very negative on the projected impact on our market. I also met with the director of the Chamber of Commerce and the major supplier for island contractors. The response there was the same.

In the past couple of years the island has lost two major employers, K-2 and SBC. That resulted in the direct loss of more than a thousand jobs and the loss of possibly three hundred more ancillary jobs. This project has the potential of creating many jobs for island contractors and personnel. King County has just presented a plan that limits the maintenance of our roads and may leave us with mostly gravel. But, I see this as an island killer.

I hope that I am seeing this incorrectly. Perhaps you are aware of other views that are not so pessimistic and have a ray of hope. I and other islanders need to understand that the island will not become uninhabitable. Can you give us a glimmer of hope?

From: Michael Meyer
Date: November 12, 2011
To: Cynthia Walker
Subject: Comment on smelter

Thank you for the opportunity to comment on the Draft Interim Cleanup Action Plan for the Tacoma Smelter Plume. I appreciate that Ecology has taken the lead on addressing the worst of the contamination from this site, rather than using enforcement authority to require property owners to perform cleanups. After an initial read of the plan, it appears that Ecology's approach is reasonable. However, I am concerned that Ecology's evaluation of remediation levels and alternatives for the cleanup appears to be based primarily on narrative descriptions of what seems "reasonable." For example, I don't see a quantitative evaluation that supports the selection of the remediation levels for the Interim Action. Just the fact that the RLs are nice round numbers ("100 ppm" for arsenic) suggests that some qualitative assessment was

performed, or that the numbers were based on "gut feel." This doesn't seem sufficiently rigorous for such an important and large site.

Regarding the alternatives evaluated, in section 1.5, first bullet, Ecology states that the No Action alternative was used as a baseline for comparing other options. This concerns me, and undermines the credibility of the conclusions in the Interim Action Plan. The feasibility study process under MTCA does not utilize the concept of the "No Action" alternative as a baseline for comparison to other alternatives. Instead, the No Action alternative is used under CERCLA. MTCA is more conservative and requires (WAC 173-340-360[3][e][ii][B]) that "the most practicable permanent solution evaluated in the feasibility study shall be the baseline cleanup action alternative against which cleanup action alternatives are compared." All other alternatives are then compared against the baseline alternative. If an alternative is selected that is less permanent than the baseline alternative, the disproportionate cost analysis process under MTCA must be used to show that the incremental costs of the baseline alternative "exceed the incremental degree of benefits achieved by the alternative." The FS for the model remedies in Appendix C uses a brief narrative to serve as the disproportionate cost analysis. This narrative is not quantitative, and is not rigorous enough to meet the MTCA standards. The IA Plan should strictly adhere to MTCA so that it is credible and defensible, and we can be reasonably certain that the best decisions are being made.

Section 2.7 - Ecology asserts that there are not enough settlements funds to clean up the whole plume. What is the basis for this assertion? A disproportionate cost analysis is required to establish this. Even though this sounds plausible, some quantitative backup is required. I don't see any cost estimate for performing complete cleanup for use in comparisons to other alternatives.

Section 6.1.3, "In many cases, grading, digging, and construction will lead to soil cleanup." This implies that Ecology will not require any special handling or disposal of soil on properties within the TSP. Is this correct? Or will development of undeveloped land now require the developer to precharacterize soil at the site and potentially use special handling and disposal techniques for soil at addtitional cost? Will Ecology provide assistance to developers in this regard? Phase II plans appear to lean towards requiring cleanup during development, but don't discuss soil handling and disposal and confirmation, just pre-construction sampling.

Section 6.2.3 - Ecology's "decision unit" process relies on the existing land use pattern at each property. How will land use or engineering controls be used to ensure that exposures do not increase as land use patterns on individual properties change over time (e.g., homeowner construction of new play area within a previously forested portion of a property)?

Section 6.4.3 and 6.4.5 - Under capping scenarios, how will Ecology maintain and inspect institutional controls (i.e., "confimational monitoring" under section 11.4.2) that ensure the cap remains in place and effect in perpetuity on thousands of individual properties? It appears that Ecology is leaving this up to the property owner, but doesn't Ecology have an on-going obligation to maintain and inspect ICs if they are a key cleanup action component? Thank you.

Tacoma Smelter Plume
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DEPARTMENT OF ECOLOGY
State of Washington

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NAME: CARL HALSAN

ADDRESS: PO BOX 1497

CITY: GIG HARBOR ZIP: 98335

COMMENTS

(Please use back side of this form if you need more room)

I'M WORKING ON A VACANT SINGLE FAMILY LOT WHERE I'M PROPOSING A FILL & GRADE PROJECT TO BRING THE SITE UP TO STREET LEVEL IN PREPARATION FOR A NEW SFR. IF THE CITY REQUIRES US TO CLEAN THE SOILS SHOULDN'T WE BE ABLE TO BE REIMBURSED? ARE WE PENALIZED FOR NOT HAVING A HOME ON THE SITE NOW? IF WE BUILD A HOUSE W/O GRADING OR FILLING, THEN TEST THE SOILS, THE CLEAN UP WOULD BE PAID FOR. IS THAT THE GAME WE'RE FORCED TO PLAY?

Tacoma Smelter Plume
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NAME: Marc Amrine

ADDRESS: City of Lakewood

CITY: _____ ZIP: _____

COMMENTS

(Please use back side of this form if you need more room)

You probably should contact the following agencies:

1) Pierce Co Master Builders Assoc (MBA)
   Shawn Huey and Tiffany Spier
2) Snohomish / King County Master Builders Assoc.
3) Real Estate Industry
4) All Chambers of Commerce
5) Future Wise
6) School Districts (Private & Public)

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NAME: TODD TORSET

ADDRESS: 21720 NE 136th Pl

CITY: Woodinville, WA ZIP: 98077

COMMENTS

(Please use back side of this form if you need more room)

I own a walk-in cabin we use a lot on Vashon (27903 SW Summerhurst Walk Vashon, WA 98070). My question is how will a site like this be handled since it is a walk-in (park in parking lot and walk down to house). Our particular lot does have a road on the plot map which has never been developed so there is potential to get access. The other question regarding our site it is sloped so I'm curious how steep a slope can be and still be cleaned up. More on back.

- I'm also curious if accessed value of how will be effected by being in the high zone. I had no idea of this issue when I purchased this property 4 years ago.
- Also the path we and our neighbors walk in on is county property. Will this be covered by the clean up?

From: Kristin Lynett
Date: November 16, 2011
To: Cynthia Walker
Subject: Tacoma Clean up Comments

I would like to see that beneficial surface water techniques are incorporated into the restoration of cleaned up properties. Instead of replacing with grass or other low infiltration vegetation, residents should be encouraged to build rain gardens or other native vegetation.

As heavy equipment would already be on site excavating the contaminated soil, the cost of digging a rain garden would be greatly reduced.

I would encourage Ecology to be flexible in defining “replacement”, and allow for more beneficial restoration techniques and costs. I would encourage Ecology to work with the City’s Surfacewater Division to educate residents on programs and techniques and opportunities to lower their stormwater rates.

Thanks for the opportunity to comment.
Kristi Lynett

Sustainability Manager
Office of Sustainability
City of Tacoma
kristin.lynett@cityoftacoma.org
(253) 591-5571
www.cityoftacoma.org/sustainability

University Place
WASHINGTON

December 15, 2011

Cynthia Walker
Project Manager
Toxics Cleanup Program, SWRO
P.O. Box 47775
Olympia, WA 98504-7775

RE: Draft Interim Action Plan – Tacoma Smelter Plume

Dear Ms. Walker:

The City of University Place has reviewed the Draft Interim Action Plan for the Tacoma Smelter Plume and has the following questions and comments:

1. It is our understanding that the State of Washington received $188 million in the Asarco Settlement of which $111 million was to address the smelter plume. In the Executive Summary of the Draft Interim Action Plan for the Tacoma Smelter Plume and elsewhere in the document, it states the amount of money set aside to address the smelter plume is $94 million. Where is the $17 million difference being allocated?

2. During the Phase One Yard Sampling and Cleanup Program funds should be made available to local government to provide additional public notice. Notice at the local level includes the City newsletter, City Website, UPTV and other means of public notification. Direct mailing and/or going door to door should be considered in areas of high contamination (100 ppm Arsenic).

3. Section 6.1 indicates that Ecology would take action in order of geographic proximity to the former Asarco Smelter (Ruston/ North Tacoma Study Area). However, it is our understanding that soil sampling has shown that proximity to the Asarco Smelter is not the only factor that determines where higher levels of contamination are likely to occur. Wind direction and topography are also factors that need to be considered. Rather than taking action in order of geographic proximity to the former Asarco Smelter, Ecology should allow any property owner in the High Arsenic zone to take advantage of the program on a first come, first served basis. Is there a possibility that funds would run out before properties in University Place could take advantage of the program?

4. Ecology does not propose to sample or cleanup non-residential properties even within the Arsenic high zone. However, there may be uses inside this area including private clubs (Tacoma Rifle and Revolver Club) where large numbers of people gather and recreate. If it is the intent to cleanup sites with the highest level of contamination where people tend to gather such as parks and camps, then Ecology may want to consider funding sampling and cleanup of these private or commercial types of land uses.

5. According to the Draft Action Plan when a property is tested and the results indicate moderate contamination a record will be created indicating the results and the status of the cleanup. Property owners may be reluctant to have their property tested if there is a chance they would be responsible for cleanup costs needed to obtain a No Further Action determination from Ecology. Creating a record indicating contamination of a property that would be publically available and may adversely affect the value of the property is an action most property owners would avoid.

University Place City Hall
3715 Bridgeport Way West
University Place, WA 98466
Tel 253.566.5656
Fax 253.566.5658
www.CityofUP.com

To overcome this obstacle to testing Ecology may want to consider one or more of the following actions:

a. Paying for all or a portion of cleanup of all properties where testing indicates action is needed, including those properties with moderate contamination.

b. Tiering the amount of financial assistance to the level of contamination. For example, on properties where the average arsenic is 100 ppm or more Arsenic, Ecology would pay for 100% of the cleanup cost. On properties with an average arsenic up to 80 ppm. Arsenic, Ecology would pay for 80% of the cleanup cost.

c. Increase the level of contamination at which Ecology issues a No Further Action determination.

d. Pay for cleanup of properties on a first come, first served basis regardless of level of contamination.

e. Pass legislation protecting testing results from public disclosure.

6. Table 6.2 indicates a number of parcels in four jurisdictions but does not indicate the significance of these parcels. Are these the estimated number of parcels in the Arsenic high zone?

7. Regarding Sections 6.4.3 and 6.4.4, the City's municipal code includes landscaping and significant tree preservation requirements. Prior to any cleanup action, Ecology, the landowner and/or the contractor should contact the City to determine what landscaping is required and which if any significant trees can be removed.

8. Phase Two proposes to require public agencies, private developers and private property owners to cleanup sites contaminated by others, effectively transferring the liability for the contamination. The contamination caused by others now becomes the responsibility of the property owner without the benefit of settlement funds. While we can't comment for other public agencies, the City of University Place and many of its residents will be unable to afford cleanup costs without significant financial assistance!

9. Instituting sampling and cleanup outreach, review, requirement, monitoring and enforcement at the local level requires time and resources from local government. Currently, local government is only allowed to recover costs associated with permit review and issuance. All other costs including customer service, outreach and enforcement must be borne by the City's General Fund. One hundred percent grants should be available to affected cities to pay for the costs of instituting the action plan at the local level. Mandating local government to designate a hazard zone, require sampling and cleanup and enforcement would place a huge burden on local governments already strapped for funds.

10. Section 7.3 indicates the voluntary cleanup program would be fee-based. Property owners would need to pay to obtain a No Further Action determination. Fees for this determination may deter some property owners.

11. Section 7.4.1 proposes to require local governments to conduct sampling and clean up on facilities managed by local government when soil is moved. Local governments construct and maintain numerous public facilities including roads and utility systems. Requiring cleanup in conjunction with public construction and maintenance projects could make them cost prohibitive and significantly affects the ability to provide facilities and services to a growing population. The benefits of cleanup must be weighed against the benefits of providing public facilities and services in a cost effective and timely manner.

12. Section 8.5 Enforcement states that Ecology will not enforce against residential land owners in the Tacoma Smelter Plume. However, the Draft Interim Plan includes proposals to mandate local government to require sampling and cleanup in conjunction with development projects. If both are true, Ecology would in effect be transferring enforcement responsibility to local government without the benefit of funding. Local government would also take the brunt of any citizen discontent.

13. Is the public record of sampled properties included in Chapter 6 the same record listed in Chapter 8.3?

14. Chapter 11. How would Ecology prevent fraud in cases where a property owner requests a No Further Action determination of a property in the moderate zone where sampling is performed by the property owner?

Thank you for the opportunity to comment on the Draft Interim Action Plan – Tacoma Smelter Plume. Should you have any questions regarding our comments or questions please do not hesitate to contact me at (253) 460-2519 or at DSwindale@cityofup.com.

Sincerely,

David Swindale, AICP
Director, Planning and Development Services

Copy: Exec

From: Charles Bell
Date: December 15, 2011
To: Cynthia Walker
Subject: Comment on Asarco Smelter Draft Interim Action Plan

Dear Ms. Walker,

Thank you for undertaking action to develop an interim cleanup plan for the Asarco Smelter in Tacoma. The sampling and cleanup should occur quickly (it is significantly overdue) and should be done using neighborhood teams with XRF scanners (cost effective mobile devices that give results on the spot) and urge Ecology to:

- Stop the delay. The settlement agreement was made in 2009. The residents should not have to wait more than another year to have their yards sampled.

- Be cost effective and swift sampling. Create neighborhood teams with the Health Departments of King and Pierce County to sample efficiently with XRF scanners.

- Be cost effective and swift remediation. On a neighborhood scale, bring in clean topsoil for affected properties and so the cleanups block by block in order to minimize cost and disturbance to the residents.

Thank you for this opportunity to comment.

[This comment was submitted by 21 other commenters.]

14432 SE Eastgate Way, Suite 100
Bellevue, Washington 98007
tel: 425 519-8300
fax: 425 746-0197

December 16, 2011

Ms. Cynthia Walker
Washington Department of Ecology
Toxics Cleanup Program
P.O. Box 4775
Olympia, Washington

VIA email: Cynthia.Walker@ecy.wa.gov

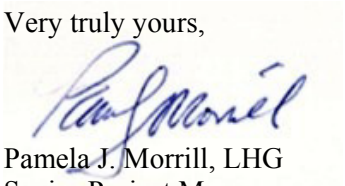
Subject: Comments
Draft Interim Action Plan for the
Tacoma Smelter Plume

Dear Ms. Walker:

This letter presents Camp Dresser and McKee Inc.'s (CDM) comments on the proposed Draft Interim Action Plan for the Tacoma Smelter Plume. CDM's comments are attached to this letter. General comments are presented first, followed by specific comments.

Thank you for the opportunity to review and comment upon the proposed plan.

Very truly yours,



Pamela J. Morrill, LHG
Senior Project Manager
Camp Dresser & McKee Inc.

Attachment

General Comments

Alternative Cleanup Methods

CDM recognizes the need to have a simplified approach for conducting site remediation on relatively routine sites. However, guidance often becomes prescriptive and CDM is concerned that the document does not discuss other options under MTCA that may be appropriate for some sites. For example, the model remedy is not practical for large open space properties (i.e., forest land and fields). Development of site-specific risk-based remediation levels based on the land use would be practical, appropriate and protective for large open space areas where human exposure is minimal.

Organic Surface Layer

CDM notes that the guidance document specifies removing organic detritus (i.e., grass, leaves, sticks, forest duff) before collecting surface soil samples. While this is an appropriate approach for urban and other areas where this cover of detritus is recent, it is not necessarily appropriate for sampling conducted in natural areas. Because the metals were an airborne deposition any surface that has been undisturbed during and after the Tacoma Smelter fallout could be contaminated. Thus, forest duff in forest land is impacted by arsenic and lead. CDM has sampled forest duff within the Tacoma Smelter Plume and confirmed this. Arsenic concentrations in forest duff tend to be similar to the surface soil and lead concentrations tend to be similar or higher. Lead, being a cation, tends to adsorb preferentially to the organic matter.

Health and Safety

The document overlooks the practical and potential legal implications of applying the Inorganic Arsenic Rule to work that involves exposure to soils in the Tacoma Smelter Plume and other areas with soil arsenic contamination. The Inorganic Arsenic Rule infers that anyone that may have any exposure to soils within the impacted area must follow the Rule. This Rule seemingly applies to everyone living and working within the Tacoma Smelter Plume fallout area including not only remediation contractors, but also such personnel as yard maintenance laborers, construction workers, and utility workers.

Specific Comments

1) Page 22 – Section 2.4.2 Extended Footprint Study

The fourth paragraph, last sentence reads “Depth profiles show higher levels of arsenic and lead in the top two inches of soil than in the 2-6 inch range.” This would generally be the case for undisturbed soils. However, this begs the question, why is Ecology specifying a 0-6 inch depth interval for site characterization and confirmation analyses? The 0-6 inch sample interval is appropriate when sampling disturbed areas (i.e., areas that have undergone some form of soil mixing). However, for soils in areas

that that have been relatively undisturbed over time, such as forests, the 0-2 inch interval would show the greatest concentrations. Since the majority of exposure by children and adults alike will occur from exposed surface soil the 0-2 inch interval should be equally appropriate for both disturbed and undisturbed soils.

2) Page 39 – Section 4.3.3 Consistent with Public Concerns

The last paragraph, second sentence states that "Right now, local planning offices must decide whether to require soil sampling and cleanup as part of the development process." CDM does not believe that local planning departments are currently equipped to make such decisions. Ecology should expect to assist local planning departments in developing an implementation plan.

3) Page 40 –Section 4.3.4 Considerations Based on SEPA Evaluation

The first bullet states that traffic impacts can be lessened by "planning truck routes to reduce miles driven, informing neighbors, and avoiding using large trucks on small streets." These measures are obvious – contractors will most likely implement all of these measures to the extent possible in order to maximize profitability (i.e., no one would use a longer route unless the shorter route had such a high volume of traffic and/or stop lights that it made the shorter route ultimately less economical). A more meaningful suggestion would be to consider altering work hours to avoid peak traffic periods. Also, remedial activities that involve soil disposal on Vashon and Maury Islands will involve utilizing the ferry transportation system. The SEPA should consider alternatives to lessen the impacts on the ferry system for remedial actions conducted on the islands.

The second bullet states that a "manageable volume of soil will go to local landfills because the program will run ten years or longer." This statement should probably be modified to state "local and regional landfill" as most of the soil will likely be trucked to local transfer stations where it will then be railroaded over to eastern Washington. Also, CDM questions the practicality of this statement. While the regional landfills should be able to handle the volume of soil, typically the pinch point occurs at the transfer stations. Very often soil excavation and disposal jobs are held up because the transfer station cannot keep up with the incoming soil volume, whether as a result of weather related or other railroad shut downs, or because of incoming soil volume being greater than the station's handling capacity.

4) Page 43 – Section 5.1 Introduction to the Four Main Phase One Actions

The word "and" is a typo and should be removed from this sentence.

5) Page 60 – Table 7.1 Phase Two – Proposed Actions by Land use and Estimated Contamination

Under the land use category of "property development with a focus on residential", land within the High Zone average arsenic concentrations will be evaluated at least every two years for funding to address contamination. Properties in the Moderate Zone could be cleaned up at the agency's expense, but based on how it is worded, the High Zone properties will be given the higher priority for funding. Similar to Comment #2, some type of reporting requirement should be instituted as a part of the development or purchase and sale process. Ecology should assist in developing such reporting requirements.

6) Page 63 – Section 7.3 Phase Two Scoping: Streamlined Approaches for Approving Cleanup Actions

The last bullet states that Ecology may "Certify contractors and consultants to do soil sampling and cleanup that meets Tacoma Smelter Plume Model Remedies guidelines." Alternatively, CDM recommends that Ecology develops guidelines that a landowner can use in making informed decisions on hiring consultants and contractors and perhaps a roster of consultants who perform this type of work. Any competent contractor and environmental consultant should be able to implement a TSP model remedy cleanup without having to obtain a special certification.

7) Page 73 Section 9.3.6 Health and Safety

This document is unclear regarding the average landowner's requirements regarding compliance with health and safety regulations. The Inorganic Arsenic Rule does not provide clear direction in this regard. This section should describe the landowner's obligation when hiring subcontractors to conduct remedial actions, as well as any site work that involves moving arsenic contaminated soil, such as for landscaping or site grading.

8) Page 84 Section 11.5 1. Characterization Sampling

Sample Depth: – Again, please define the logic of sampling the 0-6 inch interval for characterization sampling as opposed to a shallower (i.e., 0-2 inch) interval.

Sampling Protocol: – The last sentence specifies clearing grass, leaves, or other debris from the ground surface prior to sampling. CDM agrees that it is necessary to remove recently deposited organics (i.e., leaves, beauty bark), grass, and other debris (i.e., rocks). However, the sampling protocol completely leaves out one appropriate media for sampling, which is forest duff. Considering that the arsenic and lead exist because of airborne deposition and many forested areas have not been disturbed during much or all of the period of the Asarco fallout, the forest duff, and in particular the

lower layers of the forest duff, contain arsenic and lead concentrations similar to surface soils. Lead in particular preferentially partitions to organics. CDM has verified the presence of arsenic and lead in the duff in older undisturbed forests within the Tacoma Smelter Plume.

9) Page 86 Section 11.5.3 Stockpile Sampling

Suggest changing "stockpile sampling is required to "stockpile sampling may be required" . Stockpile sampling is not necessarily required for the excavation with offsite disposal if the site characterization sampling was sufficient for the waste profiling and acceptance by the landfill. Also, stockpile sampling should not necessarily be required for consolidation and capping if site characterization data were sufficient to profile the material.

10) Page 88 Table 11.5 Summary of Model Remedy Options and Considerations

The way that the mixing action is presented "Mix the top 6-12" contaminated soils with imported or deeper, clean soil," indicates that the soil mixing can occur at depths greater than 12". For example, the 0- 12 inch interval could be mixed with the 12-18" soil interval. Is this the intention?

What is the logic in requiring a thicker cap when arsenic and lead concentrations are greater. All caps should be constructed and maintained such that they are competent regardless of the arsenic/lead concentrations. Because risk is a function of both concentration and exposure, if the arsenic/lead contaminated soil becomes exposed there will not be a control over the exposure.

11) Page 89 – Section 11.6.1 Capping In Place

See the prior comment. A cap should be designed with the expected level of use in mind (i.e., high/low traffic and traffic type – foot, motorized, etc), not on the concentration of arsenic.

12) Page 92 – Section 11.6.5, Institutional Controls Only, last paragraph

Bark will break down and will not hold up under heavy use. Practically speaking, only heavily used walking paths/trails should need to be covered with a physical barrier. A risk-based approach should be one option for large open space areas with miles of trails and relatively infrequent use.

13) Page 93- Section 11.8 Model Remedies Best Management Practices

This seems to imply that routine site workers, such as the average landscape maintenance worker, will need to be HAZWOPER trained. This is impractical, not implementable, and a huge financial burden for companies and homeowners. CDM suggests that the implications of this section be reviewed by legal counsel.

14) References

Please check the links. The one for the Science Advisory Board, 2006 does not work.

Appendix B - Tacoma Smelter Plume Model Remedies Guidance

15) Page 8 – Decision Units, Second Paragraph

The document indicates that one could "cap a community green belt." This doesn't make sense if the purpose of the green belt is to leave an area natural – capping would destroy the native environment.

16) Page 10 – Sample Depths, first bullet

See Comment 1 regarding the sample interval.

Refer to comment #8. Removal of the organic layer over the surface of the soil does not always make sense. It makes sense if the surface layer is gravel, grass, or organic matter in disturbed areas, such as planter beds. It does not make sense if it is the organic layer is relatively undisturbed forest duff. Sampling this material has proven that it contains arsenic and lead at levels similar to soil.

17) Page 12, Soil sampling steps

#5 – Regardless of the depth interval is to be sampled, it should be specified that an even amount of soil should be collected across that depth interval. Too frequently samples are collected from a cone shaped hole, which will bias the data higher. A hand auger works well.

#7 Do not overlook the need to wash the soil mixing bowl. "Safely dispose of the dirty water" is not adequate guidance.

18) Page 17, Excavation and Disposal Process

#2 Prevent contaminated soils and dust from escaping the site -Soil and dust do not "escape. "

Whenever possible, a better alternative to wheel washing is to avoid having trucks drive onto contaminated areas.

19) Page 19, Worksheet – Planning for Excavation and Removal

Item 7 – Soil disposal is typically by the ton, not the cubic yard.

Item 9 – Equipment costs, confirmation sampling and testing of clean imported fill are not included in this tally.

20) Page 22 – XRF Note

The XRF should be allowed for compliance sampling if conducted in accordance with EPA Method 6200. The XRF is proven to produce valid data that is correlative with laboratory data, particularly if the data take into an account an appropriate adjustment factor.

21) Page 24 - B. Mixing with deeper soils (undisturbed areas)

The guidance is silent on how the forest duff, which contains lead and arsenic is to be dealt with. Also, implementing soil mixing on large expanses of forests and other undeveloped lands is not only infeasible, but will cause greater harm than benefit. As an example, consider the practicality of attempting to conduct soil mixing around tree roots and blow downs (trees, branches and other large detritus), as well as the resulting annihilation of the understory on forested lands.

22) Page 26 – Chapter Five: Capping in Place

Last paragraph that starts with "Important" – Ecology notes a preference for excavation and disposal during residential development. Consider a "green remediation" alternative, which would be soil mixing. Development possibly presents an excellent opportunity for soil mixing. Typically, soil that is excavated from the areas of foundations is much deeper than the depth of contamination. These soils could be mixed with the top soils, likely achieving the <20 ppm cleanup level for arsenic.

23) Page 27 – Soil Caps

There are some words missing from this paragraph.

24) Page 27 – Hard Caps

It is not practical to lay a hard cap over a surface soil as the organic layer will need to be stripped of prior to laying the hard cap. Otherwise, the hard cap (e.g., driveway) will settle, crack, and eventually fail.

25) Page 31 Process for consolidation and capping

#7 - Soils do not "escape" during transport. An alternative word might be "spilled."

26) Page 32 Worksheet: Planning for Consolidation and Capping

#3 b – Suggest two separate lines, one for soil fill and a second for other types of fill (i.e., beauty bark/gravel

27) Page 36 – Human Costs, Loss of human use

An alternative to fencing off a large, natural environment or developing expensive remediated trail systems is implementation of a risk assessment. The public's use of these areas is typically infrequent, of relatively short duration, and non-invasive. Thus, the exposure, and therefore the risk of adverse human health effects is generally low. Ecology should consider allowing site-specific risk assessments for such areas.

28) Page 39 - Sampling Process

#6 – See comment #17

29) Page 43 - Sampling Process

#3 - Note that the soil aliquots should be of approximately equal volume when collecting the composite sample.

Appendix C - Golder Associates Feasibility Study

30) Section 3.2 Remediation Levels

Golder noted that concentrations of 100 mg/kg for arsenic and 500 mg/kg for lead would not pose a threat to groundwater. This is inconsistent with the reference (SAB, 2006) and this Draft Interim Action Plan, which state that arsenic concentrations of up to 200 mg/kg and lead concentrations up to 1,000 mg/kg are protective of groundwater.

Appendix E: SEPA Checklist

31) General

Is this SEPA checklist intended to cover only Ecology conducted cleanups, or is it intended to also cover cleanups conducted by the public. If it is the latter, then the SEPA should have greater consideration of the additional remedial actions completed by the public and the implementation of remedial actions by the public.

32) Page 15, #12 - Recreation

Recreational uses will be highly impacted if this interim remedial action plan mandates institutional controls (i.e., fencing off) or remediation of miles of trails (unaffordable) on large expanses of natural open space properties.

From: Mark Slack
Date: December 17, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume

Re: Public Comment

The work being done is essential and this comment is not a complaint.

An unfortunate consequence of good public education is an adverse impact on property values for many homeowners. To recover those values, a prudent homeowner will want to participate in the Soil Sampling and Cleanup Program. For qualified parcels (>100 ppm), determining the implementation priority will be difficult. From the Open House event on Vashon (November 9th), I gleaned that the current thinking was to start remediation in SW Tacoma and proceed north -- indicating that Vashon property owners may not see relief for many years.

When you establish prioritization guidelines, please provide an appeal mechanism for any homeowner who has intention to sell. Specifically, if I want to sell my property that lies within the highest arsenic zone, I'd like to be able to request expedited sampling, and if that sampling confirms contamination in excess of the threshold, I don't want to have to wait years for remediation.

To ensure that such provisions are not abused, monetary claw-back provisions could be defined in the event the homeowner does not sell within a specified period of time, say three years. Alternately, a steep Priority Adjustment Fee could deter abuse and have the added benefit of making sparse funds go further.

City of Tacoma
Community and Economic Development Department

December 19, 2011

Ms. Cynthia Walker
Southwest Regional Office, Toxics Cleanup Program
Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

RE: City of Tacoma comments regarding the *Draft Interim Action Plan for the Tacoma Smelter Plume* (October, 2011)

Dear Ms. Walker:

Thank you for the opportunity to comment on the above-noted Action Plan. We appreciate the work that your staff and the Department of Ecology (Ecology) have done to pursue a settlement and funding for removal of toxic soils in our community. Thank you also for communicating with staff and the City Council regarding the Action Plan. We have coordinated among staff to offer the following comments and suggestions.

Background: City of Tacoma *Comprehensive Plan*

As a GMA-planning City, Tacoma uses its *Comprehensive Plan* goals and policies to guide the development of regulatory codes, and to provide a framework for decision-making.

As you are aware, the City of Tacoma has adopted *Comprehensive Plan* policies to pursue partnerships and collaboration with other governmental agencies to prevent or eliminate environmental contamination. We have been using these policies for at least the last five years to support use of SEPA Substantive Authority to require cleanup as mitigation for new development projects. We intend to continue that cooperation as the Action Plan is put into place.

In addition, the City has also adopted *Comprehensive Plan* policies consistent with Pierce County's County-Wide Planning Policies which place a strong emphasis on infill development. For Tacoma, this means that we intend to accommodate additional population through additional dwelling units on under-developed lots, and, more so, through new development on undeveloped lots throughout the City. The overwhelming majority of these properties are small, fitting within a range of 2-8 residential lots.

The Environmental Policy Element of the *Comprehensive Plan* emphasizes environmental quality, including water quality, with a strong preference for Low Impact Development techniques to manage surface water runoff.

Finally, the City has adopted an Urban Forest Policy Element which has as its goal establishing and protecting a citywide tree canopy of at least thirty percent. The City intends to lead by example, increasing the canopy coverage on public lands and forming partnerships with

property owners to plant trees. Overall emphasis is placed upon tree cover in residential and open space areas.

Comments and Recommendations: Phase I

1. The City has been using SEPA Substantive Authority to implement the recommendations of Ecology regarding voluntary cleanup at the time of site development. The area affected by the Asarco plume is nearly one-half the City. Because of concerns about adequate traffic study and mitigation, the City's SEPA threshold for residential development has been set at 4 units – thus meaning that very small developments may be required to complete a cleanup at their site. In other jurisdictions a development as large as 20 units may be beneath the SEPA threshold. While the City agrees that sites of all sizes should be cleaned up to protect human health, it also recognizes that the cost burden can be overwhelming, thus creating a disincentive for infill development.
    - Ecology should consider providing cleanup services or funds to new developments beneath a certain size threshold. In the alternative, consider cost-sharing with new development, perhaps on a sliding scale based upon the size of the development and/or anticipated costs of cleanup.
    - A similar consideration might be made for small non-residential development, e.g., day care facilities or churches, which may not have the resources to adequately address soil contamination.
2. The City will coordinate with Ecology when conducting public works projects in areas of high potential contamination. Ecology should continue to provide technical assistance to City staff to develop BMPs for public works projects, and we would encourage the following:
    - Develop standardized specification language and SEPA language for City Capital Improvement projects within City Right-of-Way, detailing the Phase 1 and Phase 2 minimum soil testing requirements, minimum disposal requirements, and minimum soil handling requirements relative to the specific concentration areas as noted on the draft Ecology ASARCO Clean-Up Plan.
    - Develop standardized Best Management Practices (BMPs) that can be associated to the specific concentration areas as noted on the draft Ecology ASARCO Clean-Up-Plan. The BMPs would be utilized on the majority of City infrastructure projects.
3. Please note that independent cleanups are not exempt from City of Tacoma permitting requirements, and property owners should be advised of this. Independent cleanups involving 50 cubic yards or more of grading activity would require a grading permit from the City at a cost of approximately $300 or more. Independent cleanups shall comply with all applicable requirements contained in the City of Tacoma Surface Water Management Manual, Tacoma Municipal Code 12.08 and the Public Works Design Manual in effect at time of construction permitting. The Interim Action Plan does not vest independent cleanup projects for surface water requirements.
4. As the residential cleanup plan is further refined, ensure that there is equity in application of cleanup standards for independent cleanups. Simply put, it makes sense, when working with a private developer on voluntary cleanup, Ecology asks the question "What would we require of ourselves if we were the ones completing the cleanup?" and apply those standards for the developer. For instance if Ecology determines that it will not clean up an undeveloped portion of a large residential lot, such as a forested hillside, it should not

require a developer to clean a similar portion of its site – even if that site may be accessible to future residents. Education about reducing exposure can be provided in that case.

5. As the detailed yard sampling and cleanup program is developed, continue to consult with local planning, permitting, and surface water staff for review. Of special concern are compliance with the City's Surface Water Management Manual, the Public Works Design Manual, and other local codes and policies. Compliance with local codes is important in all jurisdictions.
6. The detailed yard sampling and cleanup program shall include Best Management Practices (BMPs) to prevent construction activities from adversely impacting downstream resources and on-site stormwater flows. Identify methods for implementing BMPs both with Ecology contracts and when working with homeowners who will be completing their own cleanups. All projects shall comply with Minimum Requirement #2 of the Surface Water Management Manual and other applicable City codes and requirements.
7. When restoring yards, consider using Low Impact Development (LID) techniques to improve stormwater conditions. Ecology may want to consider offering the option of cost-sharing with the property owner to implement the LID. Stormwater improvements shall meet the requirements of the City's Surface Water Management Manual, the Public Works Design Manual, and other local codes and policies.
8. In most areas of the City, property owners are responsible for maintaining the area between their property line and the roadway. This area includes the planting strip, sidewalk, parking strip, etc., and is commonly used as part of the residential yard (frequently for gardens). If a residential property is cleaned up, this area should be included in the work despite being within the right-of-way.
9. Ensure that any trees which are removed as part of a cleanup action are replaced with equivalent species, or a species which will have an equal or larger crown width. Consider working with property owners (with cost-sharing) to increase the yard area used for tree growth – again, working with City staff expertise for residential trees. When restoring or improving yards, work with land owners to ensure survival of landscaping. It is especially important that work around mature trees within their drip-line (known as the critical root zone) is limited, or preferably, avoided entirely. Additionally, work in areas with known pathogens (e.g., root rot) and susceptible mature trees should be avoided.
10. As the residential cleanup program is implemented, please work with City staff to maintain records of cleaned/tested areas using GIS systems.
11. Please consider adding publicly-owned land to the testing and cleanup program. Prioritize soil testing and soil removal and disposal funding for public right-of-way and capital projects which improve public streets, planting strips, medians, and landscaping abutting public streets and sidewalks; and for projects which improve public lands and facilities. In addition, make funding available for open space and other public vacant and improved lands programmed for community recreational purposes e.g., community gardens, parks, etc. Work with City staff to establish reasonable best practices for capping contaminated soil on public and private lands and in right-of-way. Work with solid waste purveyors to ensure efficient soil disposal processes, which facilitate reasonable soil disposal costs for public and private projects.

Comments and Recommendations: Phase II

1. Thank you for providing the model remedies guidance. It is helpful in developing internal practices for City projects and in educating our staff and residents.
2. We have heard concerns from property owners regarding sites which are tested but which are not cleaned up under Ecology's program (sites which exceed 20 ppm arsenic threshold but less than 100 ppm). The concern is that once a property is "tagged" as having contaminated soil, it will decrease in property value or be unsellable or undevelopable. Prior to implementing any disclosure/reporting standards for real estate transactions, ensure that appropriate educational materials are available so prospective buyers are fully aware of the implications of and safety practices for elevated arsenic levels. We would encourage further study of ways to provide financial assistance (partial payment, low-cost financing) for property owners completing private cleanups.
3. Continue to work with planning, permitting, public works, and intergovernmental staff from all cities as code requirements for cleanup are developed. The City of Tacoma is – in policy and practice – strongly supportive of its single-family housing stock and emphasizes ease in permitting and review for single-family homeowners. Single family homes are the majority of our land use, and a large proportion of our permit applications. Any requirements for cleanup associated with residential building permits (such as garages or retaining walls) must carefully balance cost and effort of cleanup with the benefits of improvements to residential properties. While, again, we agree that all properties should be cleaned up, there is concern with the costs associated.
4. Continue to work with city staff to provide informational materials to residential property owners. The City of Tacoma provides several "tip sheets" regarding different development projects which could be easily adapted to include information on soils and soil safety.

Again, thank you for all of your work with what is a broad and difficult topic. We appreciate your communication with staff as well as the technical assistance you have provided, and we look forward to a continued partnership. If you have any questions or if you need any assistance from our staff, please contact Shirley Schultz in Building and Land Use Services at 253-591-5121, or Calvin Taylor in Environmental Services at 253-593-7711 who can coordinate any necessary response.

Sincerely,

Peter Huffman
Assistant Director

cc: Rey Arellano, Interim City Manager
Ryan Petty, Community and Economic Dev. Director
Dick McKinley, Public Works Director
Geoff Smyth, Environmental Services, Science and Engineering
Jeffrey Jenkins, Facilities Management
Kurtis Kingsolver, Public Works Interim Assistant Director

December 19, 2011

Cynthia Walker, Project Manager
Toxics Cleanup Program, SWRO
PO Box 47775
Olympia, WA 98504-7775
Via email: Cynthia.Walker@ecy.wa.gov

RE: Draft Interim Action Plan for the Tacoma Smelter Plume

Dear Cynthia,

Thank you for the opportunity to provide comments on the *Draft Interim Action Plan for the Tacoma Smelter Plume* dated October 2011, and associated documents.

People for Puget Sound is a nonprofit, citizens' organization whose mission is to protect and restore the health of Puget Sound and the Northwest Straits.

Background
The Asarco Smelter operated in Tacoma for almost 100 years producing copper. Unfortunately, the air plume of contamination from this facility deposited arsenic, cadmium and lead in a large area (over 1000 square miles) with levels above cleanup targets in areas from Thurston County, to Vashon Island, to the Magnolia neighborhood in Seattle and east of I-5 in King County. It is the largest contamination area in the state. The 1 square mile area right around the smelter site is a Superfund site (designated in 1983) and has been largely cleaned up by USEPA.

In the larger plume footprint, Ecology has sampled the yards of 1000 daycares and schools in the broader plume area and has cleaned up 100 of those. Across the footprint of the plume, the contamination is quite variable – some parcels will have high levels and adjacent parcels will not, depending on wind patterns, slope and amount of land disturbance. This is why it is important to sample residential yards.

As noted in the plan, these chemical are toxic and persistent. Arsenic contributes to cardiovascular disease, diabetes, and certain cancers. Lead can cause developmental delays and behavioral problems in children. It is imperative that these chemicals get cleaned up.

Ecology is using a 2009 $94 million settlement from Asarco to conduct sampling in residential yards, implement remediation and conduct education and outreach. Ecology believes that the plume is too large to clean up every property with this amount of funding, so they are doing partial cleanup (i.e., an "interim action").

People For Puget Sound supports a thorough cleanup of the contaminated area. We recommend the most permanent remedy (removal of soil and replacement with clean soil for ALL contaminated parcels) because this is protective of human and wildlife health and in the long-run it is most cost effective to do the job right at the beginning than to come back again and again to do more cleanups. If Ecology cannot clean up all of the parcels with the given amount of funding, then a prioritized and cost-effective approach is 2nd best.

Our comments follow:

1. **Stop the delay.** The settlement agreement was made in 2009. It is great that Ecology is creating this interim cleanup plan, but People For Puget Sound thinks that the sampling and cleanup should occur quickly (it is significantly overdue). The residents should not have to wait another year to have their yards sampled. It should not take a year to get the sampling started.

2. **Quick and comprehensive sampling**. Sampling should be done using neighborhood teams with XRF scanners (cost effective mobile devices that give results on the spot). Specifically we recommend that Ecology create neighborhood teams with the Health Departments of King and Pierce and Thurston Counties to sample efficiently with XRF scanners. These teams can provide immediate feedback to parcel owners and can effectively work block-by-block for maximum speed and cost-savings.

3. **Cost effective and swift remediation**. On a neighborhood scale, bring in clean topsoil for affected properties and so the cleanups block-by-block in order to minimize cost and disturbance to the residents.

4. **Improve the cleanup target.** Ecology has determined a cleanup target for yards for arsenic at 20 parts per million (ppm) and lead at 250 ppm and is only planning to clean up yards at an even higher target level (average arsenic over 100 ppm or single arsenic sample over 200 ppm average lead above 500 ppm or single lead sample above 1000 ppm). Unfortunately, these levels are above the state's human health standards. We recommend that the sampling (above) be conducted swiftly and in a cost-effective manner so that the $94 million go further – get the cleanups done for the existing cleanup target levels, and then use remaining funds to cleanup properties that are below the cleanup targets but above human health standards.

Thank you for your consideration. You can reach me at (206) 382-7007 (X172) or htrim@pugetsound.org.

Sincerely,

Heather Trim
Director of Policy

From: Evonne Agnello
Date: December 21, 2011
To: Cynthia Walker
Subject: Asarco cleanup needed in my yard

Re: Input sought on Asarco Cleanup

As the attached 3 pages show *[not included in this Responsiveness Summary]*, the soil in yard was tested by the Pierce County Health Department in 2003 and shown to have 48.4 ppm arsenic in my back yard, which is wooded and next to the 4th hole on the Highlands Golf Course and 29.1 ppm arsenic in my front yard.

While my back yard arsenic is more than twice the state background level for arsenic of 20 ppm, I see from the map in the Tacoma Weekly that anything less than 100 is considered moderate. I think that's wrong.

There are children in my neighborhood and they play in this contaminated area. There are also, of course, hundreds of people of all ages who golf in this area and shuffle through my trees looking for golf balls.

It seems if Asarco is to take full responsibility for correcting the horrendous environmental wrath it's plant has wrought on Puget Sound -- and there is no reason why it should not -- then I ask that my yard, both front and back be properly cleaned at their expense.

Thank you.

CARL D. TEITGE
815 N. Stadium Way
Tacoma, WA 98403
(253) 383-9001
(253) 572-5530 Fax
Cell 253-377-0492
teitge@comcast.net

December 20, 2011

Department of Ecology
Cynthia Walker
PO Box 4775
Olympia WA 98504-7775
Cynthia.Walker@ecy.wa.gov

Re: Department of Ecology Tacoma Smelter Plume Clean Up Plan Public Comment

Dear Dept. of Ecology:

I have read much of the information that has been published in the local newspapers, published by DOE and I attended the DOE meeting at Curtis High School in November, 2011, which discussed DOE's arsenic and lead standards.

DOE has already been imposing in Tacoma in 2011 through SEPA its new arsenic and lead standards on citizens who did not cause the pollution. The property owners in Tacoma that have had to comply with the new DOE standards have already faced enormous economic hardship. The DOE has not offered to use its clean-up funds to offset these private owner mitigation expenses. The new DOE standards applied to the entire plume area could be devastating to all property owners, residential, business, municipal and charitable. This can happen whenever DOE decides it will impose its will on property not covered now by SEPA reviews.

The DOE experience in Tacoma in 2011 has shown that the impact of the new standards and DOE regulation is economically harsh. The Asarco and the EPA funded mitigation in the Tacoma Smelter Plume area did not cost the property owner any money and did not threaten their property use or values. This has dramatically changed. DOE regulation is excessively expensive, unfunded to the property owners and creates a toxic label on 1,000 square miles of property.

It is time for the DOE to provide the citizens in the Tacoma Smelter Plume area the hash facts of their new economic reality. It is time for the DOE to announce that all previous mitigation is being superseded by the DOE. DOE needs to tell property owners that relied on EPA Super Fund mitigation that it no longer matters. There is a new regulator, DOE, with new rules. It is time for the DOE to publish that the funds available to DOE will not fund all of the mitigation at the levels DOE has set. If there is not a likelihood of future mitigation funding DOE should state that. If DOE now considers all of the property in the plume area toxic it should announce that to the public.

Has DOE done any cost analysis, or SEPA, of the economic impact that the imposition of the new standards, clean up and testing plans will have? If not, is DOE planning on doing this cost analysis? Shouldn't DOE perform this economic impact analysis and a SEPA itself before proceeding forward with these new standards, any sampling and any clean up?

Does DOE have any specific scientific evidence of past health problems caused to residents by arsenic or lead in the plume area to justify the dramatic change from the Environmental Protection Agency standards for arsenic and lead? If there is additional scientific evidence is it only laboratory work or educated guess work? Is there any scientific study specific to the current residents who have lived and used their property in the plume area which has already been cleaned up to the EPA standard? What is the likelihood that a fully landscaped residence with less than 230 ppm arsenic in the yard will somehow cause a person to get cancer or any of the other of the diseases DOE has listed? Where are the scientific studies specific to the generations of residents who have lived under the plume and used their yards and breathed the arsenic and lead as it was dropping on them (at a time the toxins were well above current the EPA 230 ppm standard)?

DOE has recognized in its literature that many of the health problems that can be caused by arsenic are not in fact expected to be caused by arsenic but will be due to other factors such as diet, genes, life style, pre-existing illness, and other chemicals. The DOE recognizes at the same time arsenic can increase the risk of developing these illnesses and feels it is likely (but not proven) to contribute to some of the cases. The DOE also recognizes that most arsenic only stays in the body a short period of time. The number of potential health risks for cancer listed by DOE in its literature as 1 in 1,000,000, 30 in 1,000,000 or 1 in 2,000 do not seem to be relevant or related to any study (especially of the use of this plume area) and are only guesses.

Has DOE attempted to quantify the specific health benefits to the residents of the plume area vs. the dramatic economic hardship that the new DOE regulations will bring?

EPA is currently winding down the yard clean up to the 1993 EPA 230 ppm standard. Does DOE know the cost of Super Fund mitigation? Shouldn't these costs be disclosed to the public to help it understand the potential cost of the DOE program which appears will greatly exceed the EPA mitigation?

In 1993 the United States Environmental Protection Agency set up a 950 acre Super Fund site for the area surrounding the Asarco Smelter. EPA set the maximum safe level of arsenic in the soil at 230 parts per million and lead at a maximum of 500 parts per million. These were the acceptable limits. EPA literature indicates it has been cleaning up property that had levels that only could have potentially caused health problems. There has never been a statement that the existing levels of arsenic or lead were causing health problems or have now caused health problems. What has changed?

Many of the properties in this plume area were sampled and cleaned up to these maximum EPA standards. Many sites were sampled and very minimal areas on them were cleaned. There were many other sites that were sampled but not clean up. By new DOE standards all of these properties are now contaminated. How does DOE justify this wasted effort?

What new information caused DOE in 2003 to declare that there are now 1,000 square miles of Asarco contamination not 1.5 square miles? This is an increase of 660 times. This includes 7,000 developed lots and 2,000 undeveloped lots.

DOE is also setting new standards for mitigation for arsenic of 20 ppm and 250 ppm for lead. The new standard for arsenic is approximately 12 times greater than the EPA safe standards of 230 ppm and 500 ppm. What specifically is this change based upon? The new DOE standard is barely above 7 ppm which is the approximate amount of arsenic naturally occurring in soils.

The DOE received $188 million in the bankruptcy settlement with Asarco. One-half of this, $94 million, is apparently dedicated to the Tacoma Asarco clean up. The other $94 million is apparently dedicated to Everett and other sites. Of the $94 million only $64 million is slated for clean up.

From the recent DOE experience in Tacoma with SEPA projects the amount of $64 million is dramatically inadequate to cover the true cost of mitigation.

There are three sites in the Tacoma Plume area that have recently come under DOE's SEPA jurisdiction. I do not have all of the specifics of these sites but do have some knowledge. Rabbi Zellerman came to the DOE meeting in University Place. He had a SEPA required DOE mitigation on an approximate 7,000 square foot residential site to build a religious building. The cost of the remediation was over $19,000. The cost of soil removal for dump fees alone was $28 per ton. The Highland Golf Course requested a preliminary plat for 8 lots and came under SEPA. DOE is requiring removal of arsenic and lead to 20 ppm and 250 ppm. The lots are about 6,000 square feet. DOE wants the each site totally decontaminated. A 6,000 square foot lot has 6,000 cubic feet of soil in 1 foot of depth. Divided by 27 is a cubic yard. Removing 1 foot of soil on a 6,000 square foot lot equals approximately 222 yards. 222 yards times 1.3 (to quantify tons) equals approximately 290 tons. The dump fee of $28 per ton equals $8,000 per foot of soil removed. This is without the cost of permits, scientific studies, dust containment, loading, trucking, return of soil, testing of returned soil, compaction and other related costs which add at least another $8,000 per foot of depth removed. If two feet of soil need to be removed that is approximately $32,000 per building lot. The soils must be removed rather than mixed, partially removed or buried. There is really no way to know how deep the soil removal will be before a DOE letter of "NO Further Action" is granted. Sales of the golf course lots are almost impossible because DOE may well require the digging to start and not stop until 20 ppm is reached. No one wants that risk. A commercial project at 37th and Vassault required SEPA DOE approval. The rumor is that this was done at a cost of around $300,000. DOE allowed capping because it was a commercial project. Capping is much cheaper.

The decontamination cost on these three sites, a total of approximately 10 acres, could easily exceed $500,000. This is about 0.0000156 of the 1,000 square miles but almost 130th of the total DOE clean-up budget of $64,000,000.

DOE wants to come up with a plan in early 2012 for decontamination of sites expanding out from the smelter. All sites exceeding 20 ppm will not be decontaminated. The sites with less than 100 ppm will not be touched. Sites above 100 ppm will be decontaminated to a 20 ppm and 250 ppm standard. This is the same as the SEPA

sites.

Why would a site with 101 ppm be decontaminated to 20 ppm when a site next door may be at 99 ppm but not decontaminated at all? Will the 99 ppm property be devalued? Is it labeled toxic? Will the bank finance it?

Does DOE have a maximum depth to which it will remove contaminated soil? What if the depth turns out to be 5 feet to get to 20 ppm? Most residents will never dig to 5 feet or even 1 foot depth on their property in a lifetime. If done it would likely be a short term exposure. Is there a more rational way to look at risk? If at a 1-foot depth the soil is at 50 ppm is this not safe? Where is the science to say 50 ppm is a serious health risk?

Will all property be identified by DOE as toxic if it exceeds 20 ppm? If it is identified as toxic what is the affect? Can a house be sold? Can it be sold without the new owner tacking on toxic liability? Can it be occupied? Can it be bank financed? If the houses can't be financed there will be no purchases. The prices of property will dramatically drop. There will be huge suffering not just site specific but community wide. What happens to state, city, school district and other entities' tax revenues?

Apparently, the DOE plans to begin clean up in 2013. This plan will continue for 10 years. What happens to the houses that are not slated to be cleaned up until years 2 to 10? Do they get a toxic label? Will the banks finance a toxic property that will only be cleaned up in the future if the DOE still has money available? State budgets are not reliable now. DOE only has $94,000,000. DOE has not presented a plan of where the extra clean-up money will come from.

Why does DOE take any of this money for administration?

If clean up is really necessary, since there is money in the bank now, why spread the mitigation over 10 years when the costs will escalate? More property can be decontaminated when the costs are less. Put construction trades to work now.

The DOE is offering sampling and wants voluntary clean up at the property owner's expense. There are no funds to pay for this clean up. After the sampling will DOE label a site above 20 ppm toxic? Can a home owner afford a $30,000 clean up?

At this time I do not think that DOE has any good numbers on what a site will take to decontaminate arsenic to 20 ppm. I believe that the 2011 SEPA sites required more than 2 feet of soil removal. I have reviewed several properties in the plume area. At 12-18 inches of depth of soil after the EPA decontamination, the tested arsenic levels were from 99 ppm to 156 ppm with a mean of 108. DOE does not know how deep a 20+ ppm decontamination must go? The EPA only went a few inches in most cases.

If an occupied site exceeds more that 12 inches of soil removal there are very expensive problems to resolve that magnify with each additional inch of depth. When are the building foundations, rock walls, trees, shrubs, sidewalks, curbs, roads and the neighboring properties undermined? What is the real cost on an occupied site? Has DOE at this time sampled several sites in the plume area and received bids for the removal to 20 ppm and the restoration of the site?

What happens to the properties that are skipped over because they are a distance from the Asarco smelter but over 20 ppm? Are they listed as contaminated?

Has DOE considered what happens to whole communities if they are labeled toxic and there are not enough funds to complete a clean up? Does a community recover from this? Is the DOE considering this in setting clean-up ppm levels?

Very Truly Yours,

Carl D. Teitge

From: Todd Hunsdorfer
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume Draft Interim Action Plan Comments_City of Kent

RE: Tacoma Smelter Plume Draft Interim Action Plan Comments

Dear Ms. Walker,

The city of Kent appreciates the opportunity to comment on the Tacoma Smelter Plume Interim Action Plan (IAP), and is looking forward to continued dialogue about the cleanup.

In response to this iteration of the IAP the city of Kent has the following comments:

- The City feels it is inappropriate to require private landowners to clean up properties contaminated by Asarco. Chapter 6 places the burden on private residential property owners to clean up properties that fall into the moderate category, which includes sites that exceed state cleanup standards for arsenic.

- The City agrees that when the land use is designated as "Property development with a focus on residential" (Table 7.1), cleanup should be *encouraged*. However, the City feels strongly that, where cleanup will be required, funding should be provided by the Department of Ecology to do the required cleanup. Private property owners should not be required to clean up contamination caused by Asarco.

- In Section 7.4.1, titled "Proposed Actions for Properties Managed by Other Agencies" Ecology proposes a set of actions for working with other agencies, one of which includes requiring, through state law, soil sampling and cleanup for projects involving soil moving at facilities managed by state agencies and local governments. The city of Kent is concerned with the administrative burden and cost of requiring soil sampling and cleanup in these instances.

The city of Kent is anticipating and would like to participate in an additional comment period for Phase II of the IAP, once the public and neighboring jurisdictions have had an opportunity to express their initial concerns.

The city is thankful for your consideration of these comments. For any additional clarification on these comments please contact Todd Hunsdorfer, Environmental Conservation Technician, at (253) 856-5537, or thunsdorfer@kentwa.gov.

Todd Hunsdorfer, *Environmental Conservation Tech II*
Environmental Engineering | Public Works Department
220 Fourth Avenue South, Kent, WA 98032
Phone **253-856-5537** | Cell **253-740-0224**
thunsdorfer@KentWA.gov
www.KentWA.gov

From: Deborah Johnson
Date: December 20, 2011
To: Cynthia Walker
Subject: Comment letter - Draft Interim Action Plan for the Tacoma Smelter Plume

Dear Ms. Walker:

This e-mail constitutes the City of Lakewood's comments on the proposed Interim Action Plan for the Tacoma Smelter [Asarco] Plume.

Our comments focus on the Phase Two Actions delineated in Chapter 7. Generally, we believe these actions shift responsibility and cost associated with plume cleanup to the local level and to individual developers.
We note from the explanatory language in Section 7.1 that additional input will be requested on these proposed actions in or around 2014. In terms of the bulleted issues upon which you are seeking specific feedback, we do not believe the Phase Two actions are feasible. The City of Lakewood does not currently have funding, work programming, or expertise to undertake such a regulatory program, nor are we likely to begin such a program in the foreseeable future. As currently framed, the proposed actions constitute an unfunded mandate upon local governments.

Economic development is the Lakewood City Council's top priority. We are concerned that the creation of a hazard zone as proposed will not only affect property values for existing land uses, but could also act as a deterrent to new development or redevelopment. As one of the designated regional centers under the Puget Sound Regional Council's VISION 2040 plan, Lakewood is expected to add significant new growth, not just in terms of population but also jobs. The City's comprehensive plan under the state Growth Management Act is largely predicated on redevelopment and infill, which could be negatively influenced not just by the mere presence of a hazard zone, but also the prospect of cleanup costs associated with land development in the city. The proposal to require seller sampling of soils could also negatively impact real estate values and dampen investor interest in property acquisition. As a whole, these proposed regulatory actions further press on a real estate and development industry that is already significant hampered by the current economy and could significantly deter investment in our community.

The requested feedback points also ask whether "local governments have legal issues with the actions." At this time, the City of Lakewood has not undertaken specific legal review of this proposal; however, we are obviously concerned about costs associated with environmental cleanup caused by a land use that is not even located within our city being passed on to us. Further, we would point out that the contamination actually occurred prior to the City's incorporation, which further obfuscates any responsibility the City may or may not have in terms of cleanup. We reserve the right to engage legal review and/or undertake legal action at a later date as the plume plan becomes more fully formed and is forwarded for additional review and comment.

Thank you for considering our comments. Please place me on the mailing list for any subsequent notices related to the plume plan. If you have any questions or need additional information, please contact me at 253.983.7770 or e-mail <djohnson@cityoflakewood.us>.

Deborah Johnson
Senior Planner
Lakewood Community Development Dept.
6000 Main Street SW
Lakewood, WA 98499-5027
Voice: 253.983.7770
Fax: 253.512.2268

From: Doug Fortner
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume

Re: Tacoma Smelter Plume – Draft Interim Action Plan

Dear Ms Walker:

Thank you for the opportunity to comment on the proposed Tacoma Smelter Plume Draft Interim Action Plan.

The Town's primary concern is that the Department's actions not increase the Town's costs. The Town does not have the resources, either financially or in personnel, to absorb additional unfunded mandates from the State. The suggestion that local governments create a Tacoma Smelter Plume "hazard zone" raises the concern that the State is attempting to shift the cost of cleanup to the local level. More information on this idea is needed before the Town can provide a detailed critique.

The Town has been reluctant to require contractors to expend additional resources on testing soils without explicit authority or direction from the State. The proposals for the State to require soil sampling and cleanup for all grading permits within the region, develop a General Construction Permit and revise the SEPA checklist to include questions about soil contamination would give the Town the unquestioned ability to require sampling.

The Town looks forward to providing more comments as the Department refines the Interim Plan.

Regards,

Doug Fortner
Town Planner, Town of Steilacoom

From: James Perry
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter comments

Ms Walker,

I was very disappointed I was unable to attend your November meeting on Vashon Island. I've owned a home and resided in Burton since about 1974. I live on the bluff above the Burton beach, facing Tacoma. I gardened both vegetables and flowers in the native soil until the early 1990's. I became concerned and switched to container gardening with store-bought soil. I have many fruit and nut trees on my 3/4 acre lot. Are the fruits and nuts safe to eat? We always wash off any edibles the slugs, birds, and other critters may have peed on. Are vegetables grown in native soil safe to eat? We understand that native soil has to be washed off our bodies and clothing.

I would be willing to let the EPA clean up the higher use areas of my yard. I think current residences should have priority for testing and clean-up over undeveloped property. Development on Vashon is now zoned. Development in the highly contaminated area is severely restricted due to access to existing potable water.

Whole property clean-up versus high-use areas: Low use areas with ornamental trees should be a lower priority. Residential properties, especially large acreage, that have undeveloped woodlands should be very low priority. Undeveloped property should have the lowest priority, especially if water availability or zoning would limit development.

Where to start: Start with the most highly contaminated areas. Start from the smelter site and work outward. Test areas generally known to be contaminated as you outward.

Your Power Point doesn't go into detail how site clean-ups are to be done. When you excavate, do you replace any of the lost topsoil? Nobody wants a yard like a strip mine pit or trees and a house setting on little mounds of dirt. Who would do the replacement "gardening"? How would small and dwarf trees be dealt with? Do we existing shrubs get replanted. How deep could the moderately contaminated soil go? Could we vegetable garden in the native or replacement soil after mitigation?

What will the role be of phytoremediation? How can we get Chinese Brake Ferns? Do they actually work at removing the evil chemicals?

Education: I think anybody who's lived in the contaminated areas of Vashon and Maury Islands and Tacoma for a significant time are moderately well informed. You cover hygeine and dust control issues, but gloss over gardening and food crop issues. People who are moving into the zone or developing property, should have obligatory education by realtors. The real estate disclosure form should be changed to include lead and arsenic contamination.

The main emphasis should be on cleaning up existing play areas and residences. Sites that are proposed to be developed in the "plume area" should have to have a soil test just like they have

to get a percolation test. Change the state law to require soil sampling prior to sale in known contaminated areas.

Your free soil sampling should be expanded to residences in the highly contaminated zone. It would expand your database and help clarify the extent of contamination and how much work needs to be done.

I recently retired. I've had skin cancer, high blood pressure, and am pre-diabetic, so please hurry up!

Thank you,

From: Jessica Knickerbocker
Date: December 20, 2011
To: Cynthia Walker
Subject: Interim Action Plan comments

Good Evening Cynthia,

Thank you for the opportunity to comment on the plan. I have a number of question, concerns, comments and suggestions. Please bare with me this plan could have a negative impact on my family, my 2 year old daughter, and my largest investment, my home. On the other hand I also see this plan with some significant improvements could greatly improve nearly 1/2 of Tacoma.

To begin with I am very disappointed in the way that Ecology is approaching this cleanup. I challenge you and your staff to take a step back and take another good look at the big picture. The very first sentence regarding the plan overview states. "The plume is too large to clean up all soils. " Right there it appears that you have already given up. And maybe this sentence is true, but this should not be the very first sentence without any justification for this conclusion. How has Ecology determined that this area is too large? It is also stated that "If you live inside this area you could be at risk. Arsenic and lead are toxic." And goes on to explain risks to Children. If people living in these areas are truly as risk then no matter how far the risk extends Ecology has a responsibility to find a way to clean it up to an acceptable level. I would also like to point out that at the Public meeting I attended on this plan both the Health Department and Ecology stated that there is "no statistical evidence that supports that people living in these areas are at any additional risk than those living in Cincinnati OH" or anywhere else in the world. The message needs to be clear, fair and consistent.
To answer your specific questions:

Should Ecology spend the settlement mainly on soil sampling and cleanup (page 1 figure)?

Yes! However, it was stated at the public meeting that if your yard is to be cleaned up then your landscaping would be replaced in kind or better than what is there today. I do not agree with

this approach, Ecology should focus the money on the *cleanup* and stabilization of each yard. Fancy, expensive landscaping should be the responsibility of the homeowner. Now I do think that Ecology should offer enhanced landscaping options so yards could be restored to what they were. From a constructibility standpoint it only makes sense for this to be done with the cleanup. Ecology could credit to the homeowner for the cost of the sod not needed. This option would extend to the homeowner the benefit of expected cheaper bid prices. I also think Ecology should offer homeowners the option to have their yards to be landscaped with a sustainable landscaping to improve stormwater and reduce water consumption. Again at the cost to the homeowner. It would be a shame to not at least make this education available when yards are already tore up.

Should we focus on yards in the most contaminated zone (page 3) and play areas? Yes, of course. Sites that may cause recontamination to other sites should also be evaluated and stabilized.

How can we improve our outreach and reach people in the less contaminated areas? 1. If you want to test and find the most contaminated sites you should not threaten to educate potential home buyers. If you are going to test all sites and then put big red arrows pointing to contaminated sites on Govme and not clean them up to the 20 ppm, then I do not know why anyone would allow you on their property. 2. You should attend Tacoma neighborhood council meetings and also outreach to existing HOAs, churches, philanthropic organizations, and schools. All of my neighbors and the Chair of West End Neighborhood Council (West End is entirely within the "high" zone) had no idea about this plan. 3. Have you considered a stakeholder advisory group? Property owners, businesses, contractors, real estate agents, developers.... 4. You also need to educate folks about how they could clean up their own yards. Available contractors, permit requirements, disposal requirements and options.

Should we encourage or require sampling and cleanup during development? Absolutely, this is the best time to do it. Development and Redevelopment if they are disturbing the soil. Plus, these sites during construction are recontaminating the rest of our yards. Requiring sites to be brought up to code is standard across many industries, building code, traffic mitigation, stormwater impacts, etc.

How can we help educate homebuyers? If you do not clean up to the state clean up levels then you need to be very clear what the risks are to homebuyers. You can't publicly state that their is no statistical evidence to support a risk, but then turn around and tell potential buyers not to buy here. Hands down I would not have bought my house in Tacoma. That being said as an environmental engineer with a decent amount of working knowledge of the Smelter Plume and it's risk I am not concerned for my families health. My fear is never being able to sell my house! Do you want to turn 1/2 of Tacoma into a park or something with no people living here? Please evaluate the risks of these properties and then put yourselves in the shoes of these homeowners and potential home buyers. I will write every elected official that represents me to stop this if you proceed along these line. I will also put my house up for sale.

What other ideas should we look at for Phase Two? You need to offer a mechanism to facilitate all of the properties testing over the state levels to be cleaned up! Provide a program

where homeowners in the 21-100 range could pay a portion to have their yard cleaned up at a reduced rate. Money is a big deal especially now. But in addition to this burden who has the time or experience to find an experienced contractor at a decent price? And lets say I wanted to do it myself. The public meeting I went to the message was that we were to take the dirt to the Tacoma Landfill in bags? Really? Contractors can take it to the landfill for free right now with the capping that is going on. Ecology needs to partner with the City of Tacoma, I think this could also extend Ecology dollars.

You also need to provide financing for homeowners to pay these costs over time. No interest loans? You have 10 years to spend the money so you could use the money to offer financing. Tacoma also has an Local Improvement District program, which I realized is geared toward the public ROW. But could it be extended to these private yards? This is a financing tool which is added on to people's taxes. Could legislation be passed to allow this? Seems like a good enough reason to me.

Conclusion

Thank you in advance for your consideration. Ecology has a great opportunity to have a positive impact on a large number of residents in the South Sound. Please let me know if you have any questions? I would be happy to help in anyway that I can.

Thank you,

King County
Parks and Recreation Division
Department of Natural Resources and Parks
King Street Center, KSC-NR-0700
201 South Jackson Street
Seattle, WA 98104-3855
206.296.8687 Fax 206.296.8686
TTY Relay: 711

December 20, 2011

Cynthia Walker
Tacoma Smelter Plume Project Manager
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Ms. Walker:

Thank you for the opportunity to comment on the Washington State Department of Ecology's Public Review Draft of the Interim Action Plan for the Tacoma Smelter Plume (October 2011). We are sending this letter to document submittal of our comments to you via email today as requested in your public comment instructions.

The King County Parks and Recreation Division of the Department and Natural Resources Department, owns and manages many different kinds of park sites within the TSP area, including developed parks with recreation facilities, passive recreation sites with open space areas and natural areas managed for habitat conservation. In addition, our future plans include acquiring more natural areas and open space lands within the Tacoma Smelter Plume area and in and developing passive recreation amenities on some of those sites, especially on Vashon and Maury Islands. Therefore, the Interim Action Plan contains very significant guidance that affects both the present and future management of our park lands.

If you have any questions about our comments, please contact Connie Blumen, Natural Resource Lands Program Manager, at connie.blumen@kingcounty.gov, by phone at 206-263-6371 or by mail at the address listed on this letterhead.

Sincerely,

Kevin Brown

cc: Connie Blumen, Natural Resource Lands Program Manager, Parks and Recreation Division, Department of Natural Resources and Parks (DNRP)
Jim Neely, Program Manager IV, Solid Waste Division, DNRP
Jim Chan, Director, Building Services Division, Department of Development and Environmental Services

King County Department of Natural Resources and Parks

Parks and Recreation Division

Comments on the Asarco Tacoma Smelter Plume: Draft Interim Action Plan for the Tacoma Smelter Plume; Washington Department of Ecology; October 2011

General Comments on the Draft Interim Action Plan, Focus Areas

Phase One

We generally agree with the four major proposed actions for Phase One—offering free yard cleanups, continuing the Soil Safety Program, providing outreach/education and offering technical assistance. King County Parks has, and will continue to benefit from the sampling and clean up of play areas within our park system. In addition, we have worked with Ecology to develop soil safety message signage and obtain informational brochures to provide park users. We look forward to working with Ecology on more opportunities to provide public education via our park interpretive kiosks, brochures, planning meetings and volunteer stewardship events.

Phase Two

Because numerous King County park sites are located within the Tacoma Smelter Plume (TSP) area and King County is proposing to acquire new lands and develop existing parks within this area, we are very interested in learning more about Ecology's plans to address contaminated soils during site development and real estate sales. We understand those proposals will be addressed in Phase Two of the Interim Action n Plan. Those proposed actions will affect how we plan for and manage our existing lands as well as our proposed acquisition strategies.

The plan also identifies that Phase Two may include developing ways to streamline approaches for Ecology determinations and approvals of cleanup actions. We welcome the opportunity to be involved further in those discussions. We feel that efforts to decrease the time and costs associated with the process could allow us more resources to complete cleanup activities. We would encourage any streamlining to take into consideration the need to retain opportunities for public participation.

Other potential Phase Two focus areas identified in the plan are evaluating properties managed or regulated by government agencies and identifying if there is adequate funding to address properties not included in Phase One. While we support the goal to continue with cleanups, we are concerned about the availability of sufficient resources (budget and staff) to carry out this work. In addition, we would like Ecology to consider the use of settlement funds to support public land acquisitions and cleanup of highly contaminated land for conservation and restoration purposes. .

General Comment on Cleanup of Parks and Camps

King County owns and manages many different kinds of park sites within the TSP area, including developed parks with active recreation facilities, passive recreation sites with open space areas and natural area for habitat preservation. The Interim Action Plan uses the terms "parks", "natural areas" and "open space lands" throughout the document and appendices. It would be helpful to have definitions for these terms to be certain all land management agencies are interpreting the use of germs correctly and to help clarify Ecology's proposals for these lands.

The plan is not always clear on the extent of cleanup recommended for parks and camps. For example in the Executive Summary and on page 15 of the Interim Action Plan (IAP), it appears clear that the application of the Model Remedies at parks and camps is focused on the play areas within these properties. For example, page 15, item 2 states: "Continue the Soil Safety Program for *play areas* (emphasis added) at licensed childcares, schools, parks, camps, and multi-family public housing. However, on page 32, Table 3.2, pages 45, 52, 59, and 60) the entire property appears to be included under both Phase 1 and 2 actions.

King County recommends that the Phase 1 and 2 actions within parks and camps be limited to the areas identified in the Feasibility Study (page 19, Appendix C). These include areas of parks and camps that are either 1) highly developed or 2) include high use trails through nature areas. This classification would cover areas that could frequently expose humans to arsenic and lead, such as play areas, ball fields, camp sites, and picnic areas.

Page 11 – Section 1.1: Purpose of the Interim Action Plan is to Manage Risk and Do Cleanup (Scope)

The summary of the scope does not include cleanup actions at existing parks, camps and open space, while these activities are addressed under the plan. "Controlling significant exposure to arsenic and lead in existing parks, camps and open space" should be included in this summary.

Page 12, – Section 1.2, The Interim Action Plan Only Applies to the Tacoma Smelter Plume; and
Page 13 – Section 1.3.2, Item 2: Alternative Cleanup Approaches (Use of Other Approaches)

Section 1.2 states "This plan selects action levels, cleanup levels, and cleanup methods based on the unique nature of the contamination"; Section 1.3.2 states that "Land owners may use the TSP Model Remedies to clean up their own properties." The Model Remedies focus on the protection of young children at residential properties and play areas, and as such may not be entirely applicable to other types of land uses, such as open space. Applicability of other cleanup approaches should be recognized, such as those identified in site-specific remedial investigations and feasibility studies, or application of industrial use cleanup levels, where appropriate.

Page 65 – Section 7.5 (Typo)

"This will help Ecology decide if it is practical to clean up play just high use areas or the whole property." This should read- This will help Ecology decide if it is practical to clean up just high use play areas or the whole property.

Page 30 – Table 3-1: Soil Safety Action Levels (Use of Other Action Levels)

The table lists Soil Safety Program Action Levels, which are based on Method A cleanup levels. A footnote should be added noting that other cleanup levels may be appropriate based on site specific remedial investigations and feasibility studies, should the landowner elect to use this approach. As discussed in comment 2, landowners should have the option of applying Modified Method B or industrial cleanup levels, as permitted under MTCA.

Page 83 – 11.5.1 Characterization Sampling (Samples at Depth)

Collecting 6-12 inch depth samples at 25% of surface sample locations is unnecessary in decision units that have not experienced significant disturbances to the soil profile. A provision should be added that allows for lower percentage of samples from 6 to 12 inches within decision units where there is no indication of historical disturbance of the soil profile. For example, 10% would likely be sufficient, with a set minimum number of samples to establish some degree of confidence on the mean (e.g., 8 sample minimum).

Page 83-84 – 11.5.1 Characterization Sampling and 11.5.2 Compliance Sampling (Analytical Method)

Use of field portable XRF should be allowed, provided that it complies with EPA Method 6200. This method includes development of a site-specific calibration curve based on a set number of laboratory-analyzed duplicates, along with other quality assurance provisions.

Page 84-85 – 11.5.2 Compliance Sampling (Approach)

"Further excavation or mixing will require a second round of sampling." Recommend that a caveat be added that allows for the sampling area to be limited to the area within the decision unit requiring additional remediation. For example if one acre of a 20 acre decision unit requires further remediation only the one acre area needs to be resampled, not the entire 20 acres.

Page 88 – Table 11.5 Summary of Model Remedy Options and Considerations (Mixing)

The remedy options table lists mixing as an alternative when arsenic concentrations are less than 40ppm. This is inconsistent with the Science Advisory Board reference (SAB, 2006) which states that arsenic concentrations of up to 200 mg/kg and lead concentrations up to 1,000 mg/kg are protective of groundwater. In addition, under Chapter 5 of the Model Remedies (page 26) excavation is listed as the preferred cleanup option. We recommend that the preference for excavation and landfill disposal be reevaluated in light of the environmental benefits associated with soil mixing. Like excavation, soil mixing provides a 'permanent' solution, and there is the added benefit of not needing to excavate and transport soils to a landfill. This alternative appears to have less environmental impact than

excavation/disposal and is less costly, particularly when applied to the Maury Island/Vashon area, where soils must be barged or shipped via ferry to the mainland.

Page 88 – Table 11.5 Summary of Model Remedy Options and Considerations; and Page 90, Section 11.6.2 Capping In Place (Caps)

The reasoning for requiring a 12-inch cap with higher arsenic/lead concentrations is not apparent. Caps should be constructed and maintained to prevent exposure regardless of the arsenic/lead concentrations. In addition, construction of a 12-inch cap is often not feasible without excavating, which would defeat the purpose. Consideration should also be given to allowing use of gravel caps. A properly designed gravel cap may provide better long-term protection than a soil and landscape material cap, depending on the type of use (e.g., trails).

Page 88 – Table 11.5 Summary of Model Remedy Options and Considerations (Institutional Controls)

Under institutional controls, the specified action is "restrict access with fencing, signage and other measures." This implies that fencing is a required element in institutional controls. As noted on page 34 of the Model Remedies Guidance, fencing may not be practical on public access properties such as parks. Recommend that this be reworded to say "restrict access with measures such as fencing and signage."

Page 92 – Section 11.6.5 Institutional Controls Only (Institutional Controls)

Paving walking paths with bark is not very cost effective as it rapidly deteriorates and is more subject to disturbance than is gravel. Suggest that the plan not recommend use of bark as a control on trails. Conversely, as discussed above, gravel caps should be considered as a Model Remedy versus only as an institutional control only. As noted in Section 11.6.2 (page 90) any type of capping in place is a non-permanent remedy.

Page 93 – 11.8 Model Remedies Best Management Practices (HAZWOPPER)

It would be helpful if the Department of Labor and Industries addressed specifically the type(s) of workers covered under the HAZWOPER standard in the TSP area. Developing safety plans, conducting monitoring, and providing 24-hours of training for workers who will likely only be exposed to minimal skin contact hazards, such as landscape maintenance employees, does not seem warranted.

Appendix B - Tacoma Smelter Plume Model Remedies Guidance

Page 8 – Decision Units and Page 9, Figure 1 (Capping Green Belt)

Capping a community green belt would likely destroy the native environment. A more realistic example should be used, such as capping trails within a community green belt.

Page 8 – Decision Units, Second Paragraph and Page 9, Figure 1 (Forested Land)

The figure states 'Cleanup required' for forested land >20 ppm. It is likely that a disproportionate analysis for most forested areas would indicate that cleanup is not required; recommend rewording to 'Cleanup actions' or similar.

Page 10 – Sample Depths (Samples at Depth)

See comment above regarding number of samples needed at deeper levels.

Page 15 – Table 2 Model Remedy Options (Mixing)

See comment above regarding mixing.

Page 22 – XRF (Analytical Method)

See comment above regarding use of XRF

Appendix E, SEPA, Mitigated DNS, Page 15, #12 - Recreation

We disagree with the checklist conclusion that the proposal will not displace any recreational uses. Those uses could be significantly affected if institutional controls, such as fencing, are mandated or remediation of trails on natural areas and open space lands are required. Public funding for cleanup of recreational areas is extremely limited. Therefore, shutting down trails and recreational areas may occur as a result of cleanup mandates until such funding becomes available.

From: Pamela Badger
Date: December 20, 2011
To: Cynthia Walker
Subject: Ecology News Release: Plan focuses on cleaning up properties within Tacoma Smelter Plume

Thank you for the opportunity to review and comment on the draft cleanup plan for the Tacoma Smelter Plume. The King County Solid Waste Division has the following comments:

King County Code Title 10.08.020.C specifies that solid waste generated in King County must be disposed in a facility designated by King County.

> **10.08.020 System of disposal.**
> A. Under the authority provided by the King County Charter and RCW 36.58.040, a system is hereby established for disposal of all solid waste either generated, collected or disposed, in unincorporated King County. Additionally, this system shall include all solid waste either generated or collected, or both, in any other jurisdictions with which a solid waste interlocal agreement exists.
> B. It is unlawful for any person to dispose of county solid waste except at solid waste facilities and in a manner authorized under this title.
> C. Unless specifically authorized by a King County ordinance, it is unlawful for any person to deliver any county solid waste to a place other than a disposal facility designated by the county to receive the particular waste.
> D. It is unlawful for any person to deliver county solid waste other than unauthorized waste as determined by the division director to any facility for final disposal other than the county-designated disposal facility, unless the division director has provided prior written authorization for the disposal for public health, safety, welfare or planning purposes and the disposal is consistent with the adopted King County comprehensive solid waste management plan.

The contaminated soil described in the Draft Cleanup Plan will be considered “Special Waste” as defined by King County. If the facility designated by King County is a King County owned facility, this material must go through our Waste Clearance Process. Contaminated soil must receive a clearance from the Department of Health – Seattle and King County (SKCDPH). To obtain a clearance application to submit to SKCDPH, use the following link:

http://your.kingcounty.gov/solidwaste/facilities/documents/Waste_characterization-form.pdf

The Division encourages Ecology to promote the use of soil mixing as a remediation measure, to the maximum extent feasible and as described. This cleanup method minimizes generation of solid waste and supports waste minimization goals of Ecology and the Division. This alternative is particularly applicable to Vashon/Maury Island given the need for shipping soils via ferry.

If you have any questions or comments, please do not hesitate to contact me.

Pamela Badger
King County Solid Waste Division
Environmental Programs Managing Supervisor
pamela.badger@kingcounty.gov
(206) 296-8441 fax (206) 296-8431

From: Kristine Anderson and Richard Hamm
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume Cleanup Plan Comments

Ms Walker,

My husband and I bought our home and have lived in the High Arsenic zone since 1986. We were made aware of potential contamination in the soil when representatives of the EPA knocked on our door about 1991, when our son was around one. We determined from that visit that we could no longer allow him to play in the dirt and worried that the pears from a tree in our yard were safe for him to eat until we had our soil (and canned pears) tested. We continue to feel restricted from full use of our property as we would like to because of the high arsenic and lead levels that have been found in the testing of our yard samples. Although our son is 22 now and lives most of the year away from home, but we would still like the ability to safely garden in the back yard, maybe raise a few chickens and be able to landscape our hilly front yard.

In the past we had a couple inches of soil over the back yard removed and hauled to a dumpsite at the Asarco property at our own expense. The site has been closed so this option is no longer available; we would need to haul it to the Tacoma landfill; or to Graham when the Tacoma landfill is closed. The expense of safe and proper disposal has prohibited us from removing contaminated dirt. Although neighbors adjacent our property have had soil in their yards replaced we found out that our yard was ineligible for cleanup because we had taken our backyard dirt to the Asarco dump site.

Currently, we would like replace dirt in the front yard - ideally replaced by others, as has been done for our neighbors. If that is not available for our property in the near future, we at least would like to have access to a site that is closer to dispose of the Asarco-contaminated soil at no cost.

I think that it would be worth considering in the Cleanup Plan to provide several locations convenient to residences located in the High and Moderate Arsenic zones where contaminated soil could be dumped at no cost to these homeowners. From there, the State could contract to haul it more efficiently for proper disposal. This would encourage sampling and help facilitate cleanup on a broader scale which will be good for our neighborhood development in the future.

I do believe that Ecology should spend the settlement money mainly on soil sampling and cleanup, focusing on yards in the most contaminated zone and play areas.

Thank you for this opportunity to comment.

CHB

CITIZENS FOR A HEALTHY BAY

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December 20, 2011

Ms. Cynthia Walker, Project Manager
Washington State Dept. of Ecology
Toxics Cleanup Program, SWRO
PO Box 47775
Olympia, WA 98504-7775
E-mail: Cynthia.Walker@ecy.wa.gov

Re: Draft Interim Action Plan for the Tacoma Smelter Plume

Dear Ms. Walker:

The purpose of this letter is to convey comments by Citizens for a Healthy Bay (CHB) in response to the Draft Interim Action Plan for the Tacoma Smelter Plume (the Plan).

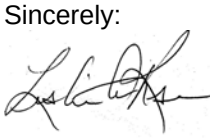
In general, CHB supports the preferred action alternative selected by Ecology that gives priority and emphasis to cleaning up soils in play areas at schools, child care centers, parks, camps, and multi-family public housing and residential yards in the worst areas of the plume. Ecology estimates that there are 20,000 parcels located in the high risk area of the Tacoma Smelter Plume that, under the draft interim action plan, must be addressed with funding from the $94 million Asarco Settlement – or $4,700 per parcel. CHB recognizes that places tremendous constraints on Ecology's ability to cleanup and manage the 1,000 mi^2 Tacoma Smelter Plume area. As such, long term and integrated outreach and public awareness are important components of the action plan. CHB encourages Ecology to create working partnerships with non-traditional community resources including schools, churches, homeowner associations and other community centers.

CHB's comments are consistent with the spirit and intent of Chapter 70.105D RCW, *Hazardous Waste Cleanup–Model Toxics Control Act*, and Chapter 173-340 WAC, *Model Toxics Control Act Cleanup Regulation*. The Model Toxics Control Action contains policies that state, in part, each person has a fundamental and inalienable right to a healthful environment and it is essential that sites be cleaned up well and that cleanup standards and cleanup actions be established that protect human health and the environment.

CHB is a community based, non-profit environmental organization representing the community stakeholders in the Commencement Bay Nearshore/Tideflats Superfund problem area and Tacoma as well as south central Puget Sound and the Puyallup River Watershed. Our membership includes citizens and other stakeholders located in the Tacoma Smelter Plume problem areas which are directly impacted by contaminated soils.

Thank you for your consideration of our remarks and for including them into the site administrative record.

Sincerely:



Leslie Ann Rose
Senior Policy Analyst

Draft Interim Action Plan for the Tacoma Smelter Plume
Comments by Citizens for a Healthy Bay

December 20, 2011
Ms. Cynthia Walker, Project Manager

Comment 1: The State's MTCA cleanup level is 20 ppm but the cleanup action level is 100 ppm. The inconsistency between the two levels is confusing to the general public whose sole concern is to whether their property's soils are safe or unsafe. The document needs to clarify the human health risk for soils greater than 20 ppm but less than 100 ppm and Ecology's basis for selecting a cleanup action level greater than the State's MTCA cleanup level.

Comment 2: The cleanup action level is 100 ppm but the results of sample analysis are subject to some uncertainty. The cleanup action level under the plan should be restated as + or – the 95% upper confidence level of the sampling and analysis results.

Comment 3: What is the depth of compliance for the Ruston/North Tacoma Soils Study Area and Vashon Island properties? The point of compliance for the Tacoma Smelter Plume is stated as being a maximum of 15 feet below ground surface which is reasonable for undeveloped properties but not practical for homes or other developed properties. The final plan must specify the maximum depth to which Ecology will excavate and replace residential soils exceeding 100 ppm arsenic.

Comment 4: What measures will Ecology use to measure the success of outreach and education activities under the Phase One interim action? The draft report concludes that existing outreach tools have been successful as up to 50 percent of people surveyed by the Tacoma-Pierce County Health Department reported seeing a television ad about the Tacoma Smelter Plume. What methods did Ecology use to establish that raising the public's awareness to the problem resulted in changes to behavior and/or that people living within impacted communities are incorporating recommended *healthy habits* into their daily lives?

Comment 5: What outreach tools are being used to raise awareness within ethnic and cultural communities, especially those for whom English is a second language? Identify and partner with established groups such as the Korean Women's Association that are already serving these populations to develop and disseminate outreach and education information appropriate for each community.

Comment 6: To improve outreach to those living is the less contaminated areas as well as those moving into these areas; Ecology should work with local entities to develop and distribute inserts that can be included into utility bills, property tax statements, etc. Identify existing community resources such as neighborhood councils, community groups, organizations, homeowner associations, civic groups, garden clubs, community gardens, environmental organizations, etc. to expand Ecology's outreach and education efforts. Ecology may wish to evaluate non-traditional outreach resources such as home and garden stores, physicians' offices, pharmacies, even veterinary offices. Park districts, schools, Boys and Girls Clubs, YMCAs, etc. located within the problem area are excellent places from which to disseminate outreach materials.

Comment 7: Ecology should convene a Regional Citizens Advisory Committee to assist with development and delivery strategies for outreach and education as well as other problem area issues and public concerns.

Comment 8: Consistent with the spirit and intent of Chapter 70.105D RCW and Chapter 173-340 WAC, Ecology must **require**, not merely encourage, soil sampling and cleanup during property development or redevelopment within both the high and moderate risk areas. This is especially true for sites developed for residential uses, child care areas, play areas, etc. Soil sampling, analysis and cleanup are also important to protect on-site worker health and safety, both during site development and future maintenance and operations activities such as utility workers.

Comment 9: As a prospective purchaser, homebuyers have a reasonable expectation that they will be fully informed about the property, including any environmental concerns. Furthermore, such disclosure needs to be made early. It is imperative that real estate disclosure form 17 include arsenic and lead contamination from the Tacoma Smelter Plume and that soil sampling be **required** prior to the sale of property located within the footprint of the plume. CHB receives approximately 1 call a month from someone concerned about the safety of their home. In general, the callers are people who recently purchased a home within the problem area but were not made aware of the potential risks from soils contaminated by lead and arsenic and did not know about the Tacoma Smelter Plume soil contamination area. CHB assists callers by providing the background and context of the potential problem, advising them of actions taken to date as well as planned future actions and providing them with contacts and informational resources – information that ideally should have been provided to them as part of the real estate transaction.

Comment 10: Buying a home is one of the most significant decisions and often the largest investment that people make. The first, best source of information for a prospective purchaser is their real estate agent or agency. By working with real estate agencies and professional organizations, Ecology can develop educational and informational tools to help agents know the risks from contaminated soils and work with prospective sellers and purchasers to determine the status of the property in question. Agencies must be accountable to ensure that agents make full disclosure to prospective buyers.

Comment 11: To the greatest extent possible, Ecology's Soil Safety and Soil Cleanup Programs should be institutionalized to insure that human health for those living, working and playing within the footprint of the problem area continue to be protected in perpetuity. Overlays added to municipal planning databases are an excellent long-term tool and Ecology must work with local entities to implement overlays to be used for planning, land use and permitting activities. The City of Tacoma designed and applied just such an overlay after the Superfund cleanup action in the Thea Foss Waterway which affords a quick and easy notification to permit administrators and others when a land use or shoreline permit is submitted for approval. CHB continues to work with the City of Tacoma and all other stakeholders to encourage development of an expanded overlay that captures all known sites of potential contamination.

Comment 12: The final draft plan must specify that lump-sum payouts from settlement funds to local, county or state governmental entities will not be made for cleanup of public properties regardless of the current or future use especially in any instance where properties known to be contaminated were purchased after the date of the settlement. Governmental entities strapped by budget considerations may consider settlement funds as source of funding for popular projects. Settlement funds must be carefully managed to provide sufficient funding for cleanup of play areas and residential properties as well as community outreach and education efforts. Lump sum payments to governmental entities or others would disproportionally target discreet sites within the expanded plume area at the expense of play areas and residential properties.

From: Marilyn Dunstan
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume

The health risks for lower arsenic dose ranges need to be better understood in order to obtain the greater amount of compensation for damages needed resulting from the Tacoma Smelter Plume emissions. Costs associated with externalities such as air toxics from production need to be determined so that those impacted are recompensed and so that product pricing appropriate reflects these externalities. If product pricing does not include the cost of externalities such as air pollution, these products are underpriced and over utililized unless abatement measures are taken.

A population study of arsenic exposure for the greater plume area versus area health experience would go a long way in helping to outline some of the costs associated with the Tacoma Smelter Plume emissions. It could very well establish higher settlement costs which could go to compensated the effected public. Going beyond cancers to such illnesses as heart disease and diabetes and getting some measure of added risk versus exposure would help. Testing should be mandatory; this is the only way that a significant amount of credible data could be compiled to support a full scale study. Government-paid technicians should collect soil samples; the idea of residents doing this and mailing in potentially hazardous material does not make sense to me. However, the cooperation of the affected public would need to be won; politically anything else would not fly.

The public can be informed by maps showing the dispersal of the plume. However, I would like to know if any contaminated dirt, sand and gravel was hauled from heavily contaminated areas (e.g. Tacoma, Maury Island) to other areas that show on the maps as not having as significant a contamination. The hauling of contaminated dirt, sand and/or gravel via trucks or barges has the potential to create islands of hot spots throughout the area. The Tacoma Smelter has a long history. If such movement of contaminated product was done, residents need to know about it.

Additional funds could be obtained from ASARCO though settlement, or perhaps a tax on copper containing products could help provide funds.

Thanks

From: Stephanie Jewett
Date: December 22, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume Cleanup Plan

Cynthia: As promised *[see following e-mail from December 20, 2011]*, a couple more comments in response to the suggested reading guide questions for Planning and Permit Offices –

Chapter 11 and Appendix B (model remedies):

1) **Would you use the guidance? Why or why not?**
   The majority of the time the City of Burien's development review process starts at the counter. Developers, real estate agents, builders and property owners come to our front counter asking questions about the city's development regulations and review processes as they apply to a particular site. This is the best opportunity for our planning staff to provide information about the Tacoma Smelter Plume and help facilitate cleanup. While I would consider providing the draft model remedies Appendix B to professional developers pursuing larger scale developments like subdivisions, multi-family housing, commercial or institutional uses, this document would likely be too technical and overwhelming to present to those interested in smaller scale projects, like a single-family home owner who is looking into expanding their home.

   A better tool for our planning staff for this type of contact would be a simple one to two page handout from Ecology that includes –

   - What is the Tacoma Smelter Plume
   - A map of arsenic levels specific to our jurisdiction
   - Info about how to sample your soil and select an analytical lab
   - One or two paragraphs explaining effective cleanup options (excavation and removal, mixing, capping in place and consolidation and capping).
   - Who to contact at Ecology for more information
   - Web site link to the Model Remedies Guidance

2) **Should Ecology focus most of its resources on cleaning up yards and play areas, rather than new developments?**

The City of Burien is primarily built out so new development mainly consists of redevelopment of existing developed property. Also, given the current economic climate, the City is not experiencing much new development relative to previous years. Given these two factors I would expect that focusing resources on financially helping property owners clean up yards and play areas would result in a greater area being cleaned up rather than waiting for new development. Also, any required additional development costs (such as sampling and removal/capping) would likely be seen as an obstacle to new development in the current economic climate.

Thank you for the opportunity to comment and feel free to contact me if you have any follow-up questions,

Stephanie Jewett, AICP
Planner
City of Burien
206-439-3152
Email: stephaniej@burienwa.gov
Web: www.burienwa.gov

From: Stephanie Jewett
Date: December 20, 2011
To: Cynthia Walker
Subject: Tacoma Smelter Plume Cleanup Plan

Cynthia:

Thank you for the opportunity to review and comment on the Tacoma Smelter Plume Cleanup Plan. While the Tacoma Smelter Plume Model Remedies Guidance document provides resources for sampling (like selecting a lab and working with a consultant), providing free soil sampling/analysis to potential developers within the Tacoma Smelter Plume would be an additional resource that would go a long way in helping the City facilitate sampling, education and potentially clean-up during the development review process. Besides this one initial comment, the City of Burien would like to continue to work with Elizabeth Weldin as Ecology develops the soil sampling and cleanup guidance document and provide input about how we can best work with the Department of Ecology on this issue.

Thank you,

Stephanie Jewett, AICP
Planner
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206-439-3152
Email: stephaniej@burienwa.gov
Web: www.burienwa.gov

Draft Interim Action Plan Comments

From

The Tacoma-Pierce County Health Department

December 14, 2011

Revised December 22, 2011

Chapter 5 – Phase One Actions

5.1, Page 43

Opening sentence: "Ecology and chose a phased approach to addressing the Tacoma Smelter Plume (Chapter 4)."

Consider re-writing sentence as; Ecology has chosen a phased approach to addressing the Tacoma Smelter Plume (Chapter 4).

5.2, Page 44

Second point – "…multi-family housing," should read multi-family housing play areas,…

5.5, Page 46

May consider adding a point to proposed actions that state, Ecology will provide any revised maps showing contamination zones based upon new data sets.

Also may consider including the Local Health Jurisdiction (LHJ) as an agency able to offer outreach and education to local planning departments.

6.1, Page 49

Second paragraph, Map Zone – Consider placing a disclaimer in this paragraph, explaining that the Map Zones may change due to the on-going work of Dr. Goovaerts.

6.1, Page 49 continued

Fourth paragraph, consider addressing properties that are found to have high levels of arsenic and/or lead through the Tacoma-Pierce County Health Department's (TPCHD) Residential Soil Testing Program. Citizens that already know that they have high elevations requested that they be included in the first phase of Ecology's Clean-up Program. This should not just be for home

owners who take their own soils in for testing. Details of this can be spelled out in the sampling design plan, but at least mention that TPCHD and Ecology can work together towards helping this small set of property owners.

Fifth paragraph, consider revising land use order to read:

1. Existing private multi-family housing in the Ruston/North Tacoma, or Asarco Study Area.
2. Existing single-family homes in the Ruston/North Tacoma, or Asarco Study Area.
3. Existing private multi-family housing outside of the Asarco Study Area, but within Ecology's mapped high zone.
4. Existing single family homes outside of the Asarco Study Area, but within Ecology's mapped high zone.

6.1, Page 50, Table 6.2

Bottom of page, star comment states, "*Ecology will see if arsenic contamination over 100 ppm remains on properties." May consider clarification to why Ecology would leave known elevations on ones property, i.e., elevations at 12 inches depths, etc….

6.1.3, Page 52

Top of page, should clarify that clean-up are for areas with an average of arsenic over 20 ppm or lead over 250 ppm.

6.3.1, Page 53

Bottom of page, include the EPA Database as a reference source.

6.4.4, Page 56

Top of page, Sampling – Consider utilizing environmental health staff from local health agency(s). When multiple sites are being remediated within a county, local personnel are available to assist.

6.4.5, Page 57

Top of page, Ecology may want to consider having their working partners assist in the evaluation of the effectiveness of institutional controls, i.e. review the draft report.

7.1, Table 7.1, Page 60

Second row of Table 7.1 – "Explore requiring sampling and cleanup prior to sale." Expound on the term 'Explore…" Consider listing out steps to how this will be conducted, i.e. Attorney General's review, sensing degree of political will to support, and public comments. Emphasize that this is merely a proposal.

9.3.4, Page 73

Top of page, first paragraph, specify permitted landfill types. Soils can go to MSWLF and potentially some limited purpose landfills. Only some, not all, landfills are permitted under the Subtitle D Law 94-580. Washington Administrative Code (WAC) 350 and 351 captures landfills that serve MW and specific waste streams. Using the, Subtitle D landfill, term is too generic. The Toxic Cleanup Program may consider consulting with Ecology's Solid Waste Staff to ensure policy properly adheres to both state and federal codes.

1.2, Page 12

Paragraph at top of page; explain that if arsenic is found to be low, and lead is elevated, Ecology will still take cleanup actions.

2.2.2, Page 20

Last paragraph on page, include that the TPCHD also participates in fairs and festivals such as Home Shows and Health fairs.