

Cleanup Settlement Account

Fiscal Year 2017 Annual Report



Publication and Contact Information

This report is available on the Department of Ecology's website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1709181.html>

For more information contact:

Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: (360) 407-7219

Washington State Department of Ecology - www.ecy.wa.gov
Headquarters, Olympia 360-407-6000
Northwest Regional Office, Bellevue 425-649-7000
Southwest Regional Office, Olympia 360-407-6300
Central Regional Office, Yakima 509-575-2490
Eastern Regional Office, Spokane 509-329-3400

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Report to the Legislature: Activities Funded by the Cleanup Settlement Account

Toxics Cleanup Program
Washington State Department of Ecology
Olympia, Washington

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Purpose of Report

The Cleanup Settlement Account holds funds from legal settlements and court orders, meant for environmental cleanup and restoration work. It is an interest-bearing account that allows the state to use the interest on deposited funds for cleanup activities both in the present, and in the future. The Account funds projects across the state, and ensures settlement funds are linked to specific sites.

Under RCW 70.105D.130(7) the legislature directed that: “The department shall provide the office of financial management and the fiscal committees of the Legislature with a report by October 31st of each year regarding the activity within the cleanup settlement account during the previous fiscal year.”

This is the fifth annual report for this account. This report covers the financial activity from July 1, 2016 through June 30, 2017. It also includes background on each cleanup project and accomplishments through the fiscal year (FY) 2017.

The following cleanup projects are currently funded through the Cleanup Settlement Account:

- B&L Woodwaste (Tacoma), Louisiana Pacific Trust
- Everett Smelter (Snohomish County)
- Golden King Mine (Chelan County)
- Lilyblad (Tacoma)
- Monte Cristo Mine (Snohomish County)
- Tacoma Smelter Plume (Pierce, King and Thurston County)
- Van Stone Mine (Stevens County)
- Harper Estuary (Kitsap County)

The following cleanup projects were funded in past years through the Cleanup Settlement Account:

- BNSF Skykomish Natural Resource Damages (King County)
- City Parcel Site (Spokane County)
- Cholette Mine (Stevens County)

Introduction

Cleanup Settlement Account continues to help protect human health and the environment

This report to the Washington State Legislature describes how the Department of Ecology uses the Cleanup Settlement Account to help cleanup efforts that are important for the state's environment and people.

The mission of the Department of Ecology is to protect, preserve, and enhance Washington's environment. The Department fulfills its mission by promoting the wise management of the state's natural resources for the benefit of current and future generations.

The mission of the Toxics Cleanup Program is to protect human health and the environment by preventing and cleaning up pollution, and supporting sustainable communities and natural resources for the benefit of current and future generations.

Under the Model Toxics Control Act (MTCA), Ecology either oversees cleanup work performed by potentially liable parties or conducts the cleanups and recovers costs for the work. However, cost recovery or cleanup oversight is not feasible when a company declares bankruptcy or does not have the financial means to pay the full cleanup cost.

In response to this problem, the legislature created the Cleanup Settlement Account. The account not only creates a financial reserve, but also allows the state to use the interest on deposited funds for more cleanup activities. Thanks to the Legislature's action, Ecology and the Attorney General's Office can now agree to settlements in which the liable party contributes money for future cleanup work in exchange for settling its liability. Cleanup settlements may also help fund future natural resource restoration work at a particular site. The Cleanup Settlement Account is a valuable tool that helps us work together for a healthier environment, improve the quality of life in our communities, and create a more vibrant economy for current and future generations.

In the future, as projects are funded and the Cleanup Settlement Account funds are spent, we will need to rely on alternative funds to continue to move this work forward. While the Cleanup Settlement Account is an important repository of funds, it is insufficient. We are beginning to plan and look ahead to other funds, like the Model Toxics Control Act accounts, which may be able to help bridge the expected shortfall.

The following pages explain how Ecology administers the account. The report includes background on each cleanup project and accomplishments for the year. Several of these key cleanup projects are in process, while others were funded in the past.

Cleanup Site Overview

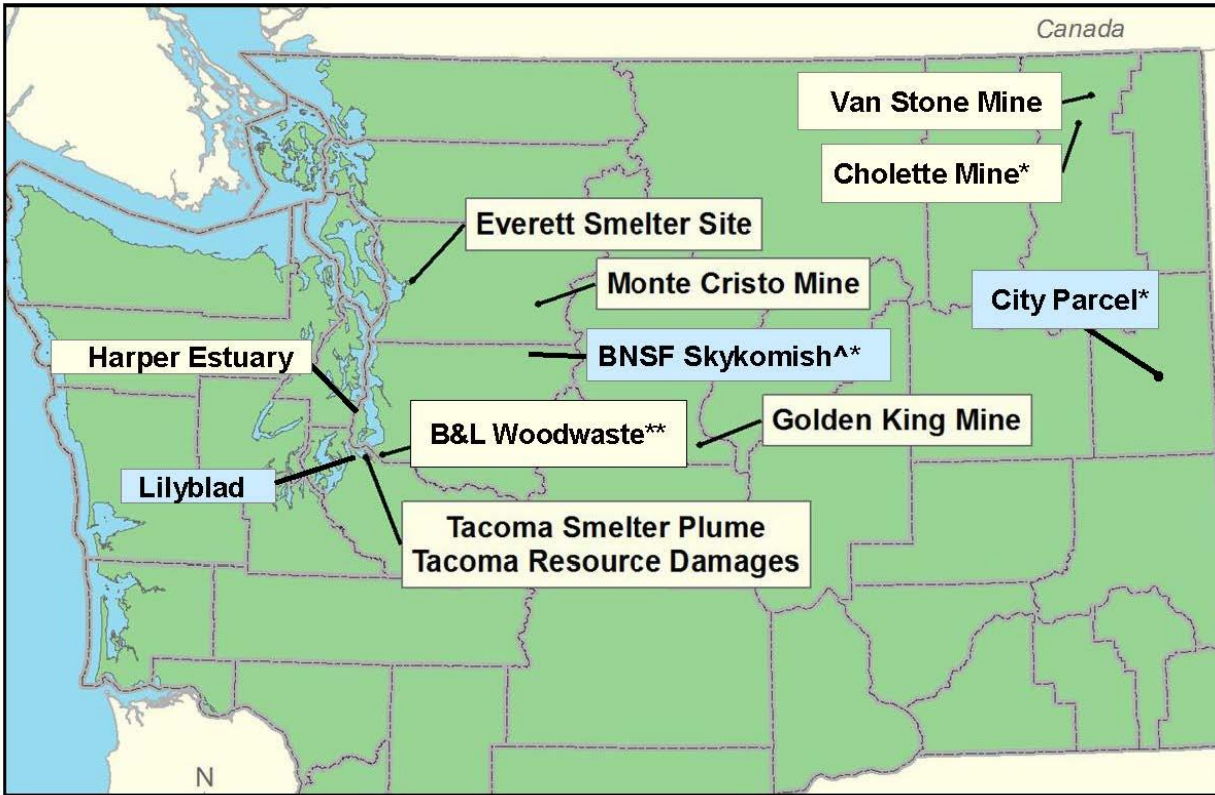


Figure 1: Cleanup Sites

^Ecology used this settlement to fund a portion of the cleanup. If Ecology determines there are future site costs, we will make a budget request from the Model Toxics Control Act accounts.

*Sites not covered in the report; funded in past years by CSA.

**Asarco site but CSA funds not from Asarco bankruptcy.



Cleanup Settlement Account

During the 2008 legislative session, the Legislature passed Senate Bill 6722 that created the Cleanup Settlement Account (CSA). Ecology requested this legislation to create an interest-bearing account in the state treasury to manage money from settlements or court orders in cases of bankruptcy, limited ability to pay, or natural resource damages. This account ensures that settlement funds are linked to specific site cleanup activities or damages to natural resources.

Ecology needed this new account because we anticipated several large settlements. Although large settlements and court orders are rare, they do pose a unique problem for the state. By accepting the settlement funding, the state agrees to manage the funds and use them as intended in the settlement agreement or court order. However, the funds recovered from a bankrupt party, or a party with a limited ability to pay, typically do not cover the entire cost of cleanup. The Cleanup Settlement Account allows the state to retain the earned interest on the funds in this account.

Earning and retaining the interest ensures the state will have more money over time to complete the work. Therefore, it is important to set aside the funds from the settlement for each cleanup. The State Toxics Control Account (STCA) does not retain interest earnings and there is no other appropriate interest-bearing account into which the State can deposit these funds.

Settlement Summary

The following is a summary of settlements, by site, which the State originally deposited into the Cleanup Settlement Account before earning any interest or making any expenditures. Table 2 (see page 5) shows activity in the account after the settlements were deposited.

Table 1: Original Settlement Summary

Settlement	Amount
Burlington Northern Sante Fe - Skykomish Site [^] *	\$ 5,050,000
City Parcel Site*	\$ 270,000
Louisiana Pacific - B & L Woodwaste Site	\$ 1,000,000
Lilyblad Petroleum Site	\$ 800,000
Asarco - Natural Resource Damages**	\$ 8,236,782
Asarco - Tacoma Smelter Plume	\$ 94,554,730
Asarco - Everett Smelter Site	\$ 33,888,476
Asarco - Monte Cristo Mine	\$ 6,471,758
Asarco - Van Stone Mine	\$ 3,530,050
Asarco - Cholette Mine*	\$ 353,005
Asarco - Golden King Mine	\$ 470,673
Asarco Subtotal	\$ 147,505,474
Total Settlement Funding	\$ 154,625,474

[^]Ecology used this settlement to fund a portion of the cleanup. If Ecology determines there are future site costs, a budget request will be made from the Model Toxics Control Act accounts.

*Sites not covered in the report; funded in past years by CSA.

** This includes \$4.1 million for Maury Island Open Space and \$4.1 million for Harper Estuary.

Cleanup settlement account remaining balance

Table 2: Remaining Balance

Cleanup Settlement Site	Fund Balance
Louisiana Pacific - B&L Woodwaste site	\$ 1,091,000*
Lilyblad Petroleum Site	\$ 33,000
Asarco - Natural Resource Damages	\$ 1,692,000
Asarco - Tacoma Smelter Plume	\$ 18,293,000**
Asarco - Everett Smelter Site	\$ 10,430,000**
Asarco - Monte Cristo Mine	\$ 2,937,000
Asarco - Van Stone Mine	\$ 2,196,000
Asarco - Golden King Mine	\$ 484,000*
Remaining Fund Balance June 30, 2017	\$ 37,156,000
Loans Receivable	
State Efficiency and Restructuring Account Loan	\$ 9,918,000
Total Point Ruston Sediment Capping and Shoreline Restoration Loan	\$ 4,842,000
Aquatic Lands Enhancement Account	\$ 2,421,000
State Toxics Control Account	\$ 2,421,000
Local Toxics Control Account	\$ 23,133,000
Actual Loan Receipts for FY 2017	
State Efficiency and Restructuring Account Loan	\$ 5,203,000
Total Point Ruston Sediment Capping and Shoreline Restoration Loan	\$ 1,346,000
Aquatic Lands Enhancement Account	\$ 673,000
State Toxics Control Account	\$ 673,000
Local Toxics Control Account	\$ -
Total Actual Loan Receipts for FY 2017	\$ 6,549,000

* The Cleanup Settlement Account retains interest. Settlements that increased from the last report had no or few expenditures and earned interest.

** The remaining balance reflects the cleanup costs and loans taken from and repaid to the account.

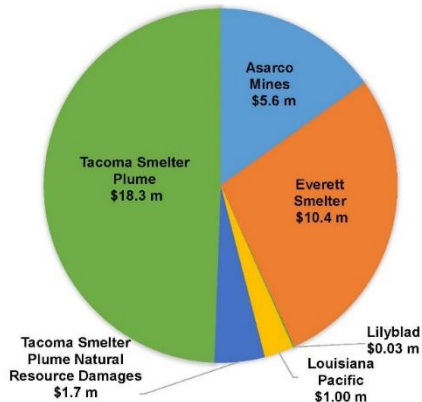


Figure 2: Cleanup Settlement Account Cash (millions), as of June 30, 2017.

Cleanup Settlement Account

Fund transfers: State Efficiency and Restructuring Account (SERA)

Fiscal year 2011 \$39,480,000 transfer

In the 2010 supplemental budget, the Legislature authorized the transfer of \$39.48 million from the Cleanup Settlement Account to the State Efficiency and Restructuring Account (SERA). The Legislature provided a payback provision in the budget. The provision requires that the SERA repays the funds over an eight year period with an interest rate that is five tenths of a percent higher than the interest rate the funds would have earned without the transfer.

2017-19 biennium repayment appropriations

Loan Receivable FY 2018	\$5,000,000
Outstanding Loan as of June 30, 2017	\$9,918,000
Loan Receivable FY 2019	\$5,002,000

Repayments: Point Ruston sediment capping and shoreline restoration

Fiscal year 2012 \$7,200,000 appropriation

In the 2012 supplemental budget, the Legislature appropriated \$7.2 million from the Cleanup Settlement Account to the Washington Department of Natural Resources (DNR) for the Point Ruston Sediment Capping and Shoreline Restoration project. The funding is to cap sediment and stabilize shorelines on aquatic lands next to the Asarco cleanup site in Commencement Bay.

The funding is restricted, to be used only if DNR enters into agreements with the U.S. Environmental Protection Agency or the land owner, Point Ruston LLC, to fully relieve the state from any further liability or contributions relating to the cleanup of these aquatic lands. This appropriation from the Cleanup Settlement Account is a loan payable over an eight year period. Half will come from the Aquatic Lands Enhancement Account (ALEA) and half from the State Toxics Control Account (STCA). The repayment interest is five-tenths of one percent higher than what the funds would have normally earned on deposits in the state treasury.

2017-19 biennium repayment appropriations

Aquatic Lands Enhancement Account

Loan Receivable FY 2018	\$ 620,000
Outstanding Loan as of June 30, 2017	\$2,421,000
Loan Receivable FY 2019	\$ 620,000

State Toxics Control Account

Loan Receivable FY 2018	\$ 620,000
Outstanding Loan as of June 30, 2017	\$2,421,000
Loan Receivable FY 2019	\$ 620,000

Maintaining positive balances in MTCA accounts

The Capital Budget authorized two loans totaling \$23 million repaid with interest in the 2015-17 biennium budget to balance the MTCA Accounts. The Washington State Treasurer transferred one of these loans for \$13 million from the Cleanup Settlement Account to the Local Toxics Control Account (LTCA) in January 2016. The Washington State Treasurer transferred the second loan of \$10 million from the CSA to the LTCA on June 30, 2017. LTCA must repay the loans with interest in three equal repayments in FY 2020, FY 2021, and FY 2022.

Local Toxics Control Account

There are no repayments appropriated in the 2017-19 biennium.

Outstanding Loan as of June 30, 2017	\$23,133,000
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Asarco Settlement

Asarco's legacy in Washington

Contamination from smelters and mines

The American Smelting and Refining Company (Asarco) was founded in 1899, with refineries and smelters across the United States and Mexico. Asarco operated two smelters and four mines in Washington, leaving a legacy of contamination. The cleanup activities around the smelters and mines in Washington, are funded through the Cleanup Settlement Account.

The *Everett smelter* operated from 1894 to 1912, and a neighborhood was later built over the site. In 1990, Ecology discovered high levels of arsenic and other heavy metals in soil and groundwater.



Figure 3: Asarco Cleanup Sites

The *Tacoma smelter* operated far longer, from 1890 to 1986, and the Town of Ruston grew up around it. Air emissions from the smelter contaminated over 1,000 square miles of soil in the Puget Sound region.

The former *mines* are in remote areas of Chelan, Stevens, and Snohomish counties. Remaining mine tailings pose a threat to local ecosystems, polluting waterways and soil.

The *B&L Woodwaste Landfill* site, on the border of Fife and Milton, has arsenic contamination. Slag from the Asarco plant leached arsenic into groundwater, threatening a nearby wetland.

The 2009 Asarco bankruptcy settlement

Washington becomes part of the nation's largest environmental settlement in history

In 2005, Asarco declared bankruptcy, largely due to environmental liabilities from its nearly 100 cleanup sites across the country. The State of Washington joined the federal government and other states in a suit against Asarco that spanned four years.

In November 2009, Asarco paid out a \$1.79 billion settlement. The settlement covered past and future cleanup costs, as well as interest earned over the four years. Washington's share, deposited into the Cleanup Settlement Account in December of 2009, was \$188.5 million, nearly 90 cents for every dollar claimed.

Years of planning and a vision for cleanup set the stage for a successful settlement

A key to Washington's success is having management plans in place for both smelter sites, and a clear vision for how to manage the risk from "area-wide" arsenic and lead contamination. From 2001-2003, the Area Wide Soil Contamination Task Force developed recommendations that Ecology used as the basis for its management strategies. These include cleaning up soil in the most highly contaminated areas, focusing on protecting children, and providing broad-based education and outreach, all pieces now funded by the settlement.

State of Washington Asarco settlement breakdown

Smelter cleanups comprise the largest cleanup costs

Of the \$188.5 million received by the state, \$22 million went to a trust to pay for the B&L Woodwaste Landfill cleanup, and the remainder went to the two smelter sites and four mine sites (see figure 4).

An additional \$19 million of settlement funds reimbursed the State Toxics Control Account for past cleanup costs for the Everett Smelter and Tacoma Smelter Plume. It also provided \$8.2 million for natural resource damages from the Tacoma smelter.



Photo 1: Asarco 50th anniversary

The majority of the settlement will cover soil cleanup and outreach work for the two smelter sites. Everett cleanup costs are high due to deep, concentrated contamination close to the former smelter property. The Tacoma Smelter Plume contamination is shallower and less concentrated, but covers a much larger area.

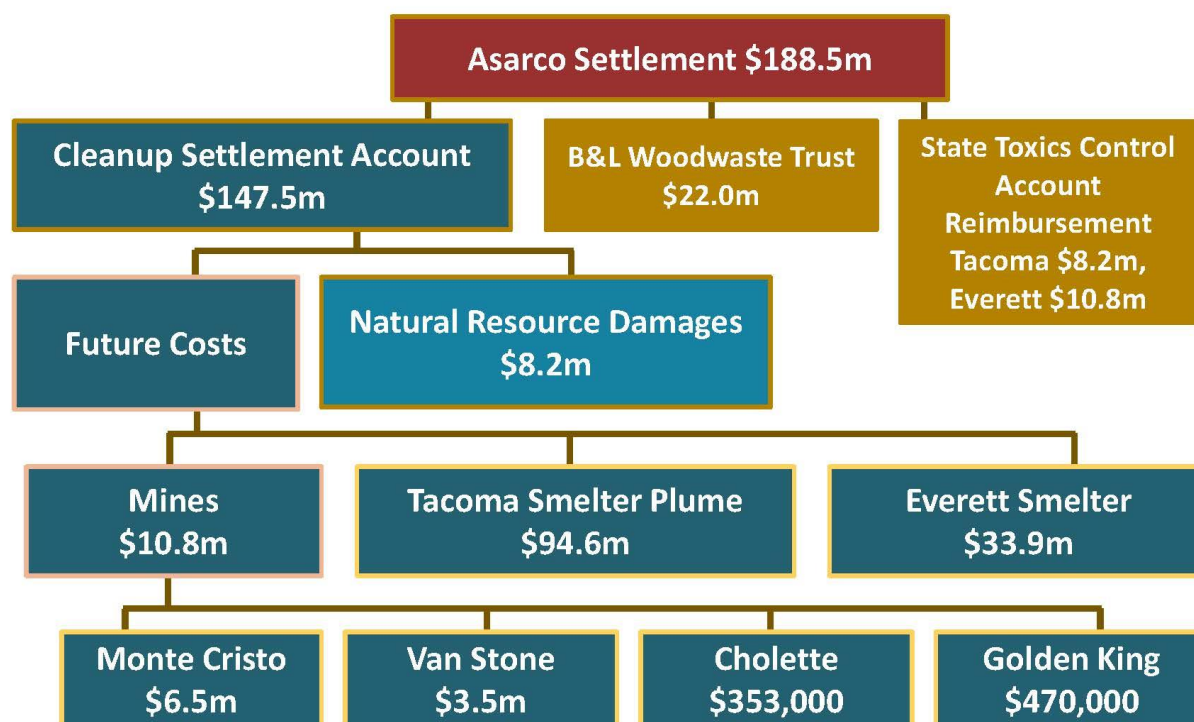


Figure 4: Asarco Settlement breakout

Everett Smelter

Everett smelter at a glance

Total settlement: \$33.9 million

County: Snohomish

Total size: 1.1 square miles

Cleanup focus: Soils and groundwater

The Everett smelter operated from 1894 to 1912 in northeast Everett. Smelter operations caused widespread arsenic and lead contamination of soil and groundwater. Particles from the smokestacks settled on surface soils over a 1.1 square mile area (see figure 5).

Ten-year settlement plan

In 2000, Ecology developed a cleanup plan for the Everett Smelter using public input. On receiving the Asarco settlement, Ecology created a ten-year plan (see figure 6) based on the original cleanup plan and input from the community. The plan addresses two areas impacted by the Everett Smelter operations: the mostly residential uplands area on the west side of the site, and the mostly industrial lowlands area east of East Marine View Drive, bordering the Snohomish River.

Ecology's plan includes:

- **Residential soil sampling and cleanup program:** This voluntary program provides free sampling and cleanup of accessible soils down to 2-3 feet.
- **Education and outreach:** This program serves both the general community and homeowners participating in the cleanup program.
- **Lowlands investigation and cleanup:** Ecology is investigating soil, surface water and groundwater contamination in the lowlands area. Ecology will remove or contain contamination and do long-term monitoring.
- **Park cleanup program:** Ecology will work with the City of Everett to remove accessible contaminated soils from areas of city parks. This program protects children, park workers, and other park users.

Cleanup focuses on those most at risk

The Everett Smelter cleanup protects residents who are most at risk. People who live in the cleanup area are most likely to come into contact with contaminated soil while working or playing in their yards. Children are especially vulnerable. Ecology began sampling and cleanup in areas closest to the former smelter site and will move outwards. We will remove soil with higher levels of contamination first to protect those most at risk.



Figure 5: Everett Smelter site.

Accomplishments through fiscal year 2017

Yard sampling and cleanups continue

We have now cleaned up more than half of the properties in the cleanup area. In FY 17, Ecology finalized plans to remove contaminated soil from 11 more residential properties (approximately 1.6 acres). Construction will take place in fall 2017.

We sampled the soil in the Everett Housing Authority's, "12 Pines community," Pine Street Mobile Home Park, and 79 yards (approximately 20.9 acres of residential property). We added properties that require cleanup to the waiting list. We will clean up these properties as funding becomes available. We expect to finish sampling for the entire cleanup area by the end of fall 2017 (see figure 5).



Photo 2: Ecology staff screening arsenic levels with an XRF tool.

Cleanup options developed for the lowlands area

Ecology held a public comment period and finalized the Cleanup Action Plan in November 2016 for the lowland area, east of East Marine View Drive. Cleanup methods include soil removal, capping, institutional controls and monitored natural attenuation. We are working on a groundwater study to aid in the design of cleanup for the area north of Riverside Road and east of Riverside Drive.

Additional funding is needed to continue with cleanup and sampling

Ecology initially estimated cleanup of the Everett Smelter site to cost around \$64 million. We dedicated \$33.9 million of the 2009 settlement funds to the Everett Smelter cleanup. We will spend the remaining settlement funds over the next two biennia.

City park cleanups postponed

Ecology worked closely with the City of Everett to design a cleanup plan for the Wiggums Hollow Park and the Viola Oursler Overlook. These were planned with funds from Ecology's Cleanup Toxic Sites-Puget Sound capital budget request using MTCA account funding. Due to revenue shortfalls in the MTCA accounts, cleanup has been postponed. We will schedule these cleanups when funding becomes available.

In the next year, we will focus on sampling the remaining properties to determine the areas needing cleanup, and finalizing cleanup plans for the lowlands. As with park projects, the plan for continuing Everett Smelter work is to include cleanup projects in Ecology's *Clean Up Toxic Sites-Puget Sound* capital budget request each biennium. Puget Sound cleanups have traditionally been funded from the Model Toxics Control Act accounts.

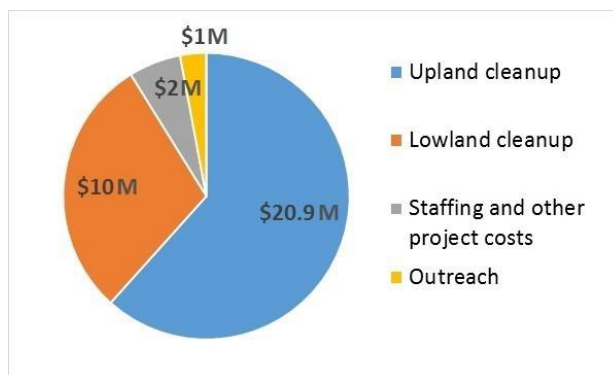


Figure 6: Everett Smelter spending breakdown of settlement money.

Tacoma Smelter Plume

Tacoma Smelter Plume at a glance

Total settlement: \$94.6 million

Counties: Pierce, King, Thurston

Total size: Over 1,000 square miles

Cleanup focus: Surface soils

The Tacoma smelter operated from 1890 to 1986, on the border of north Tacoma and Ruston. Its smokestack emissions dispersed arsenic, lead, and other heavy metals across a 1,000 square mile area now called the Tacoma Smelter Plume.

Settlement spending plan

Using lessons from early cleanup work, Ecology developed a plan for the Asarco settlement (see figure 8). It has four main strategies:

- **Yard cleanups:** Soil sampling and cleanup for existing residential yards in areas of highest contamination (see figure 7).
- **Soil Safety Program:** Continue sampling and cleaning up school, childcare, park, and camp play areas.
- **Outreach and education:** Continue “Dirt Alert” programs at health departments in King, Pierce, and Thurston counties.
- **Technical assistance:** Work with local governments and developers to encourage voluntary cleanup during grading.

Work moves forward but future funds needed

While Ecology developed a spending plan, the current funds earmarked for the Tacoma Smelter Plume will not cover the cost of all planned cleanup activities. We are beginning to plan and look ahead to other possible funds like the Model Toxics Control Act accounts.

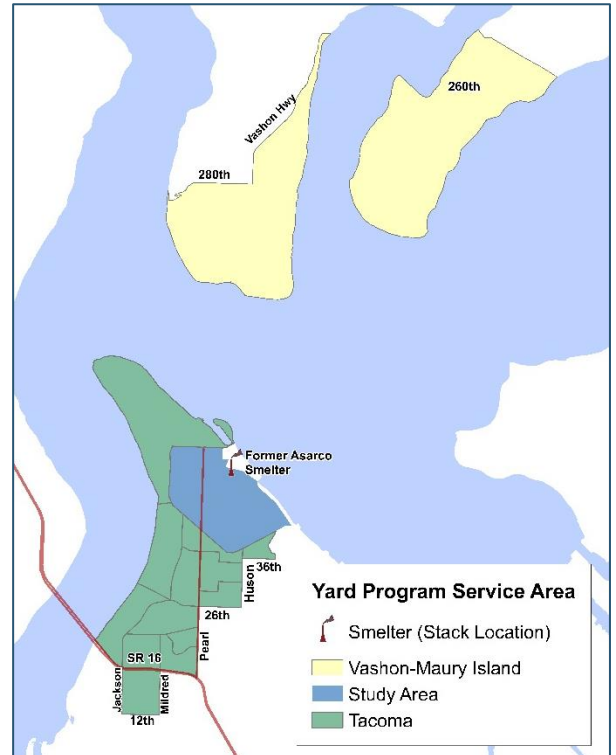


Figure 7: Residential Yard Sampling and Cleanup Program

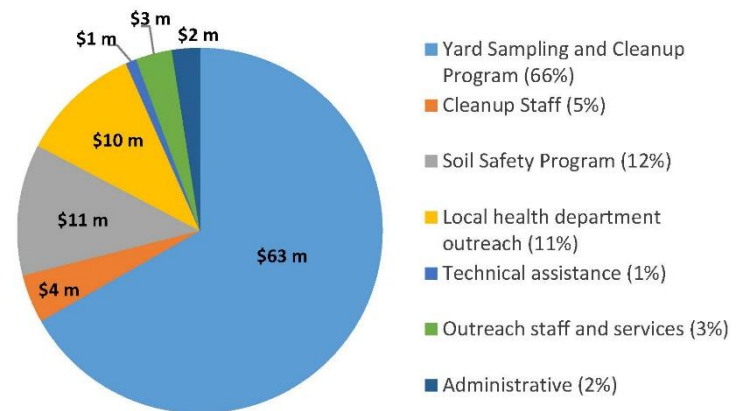


Figure 8: \$94.6m Tacoma Smelter Plume settlement breakdown

Accomplishments through fiscal year 2017

Yard sampling continues

Through FY 2017, we completed sampling on a total of 3,866 yards, with 753 on Vashon-Maury Island and 3,113 in the Tacoma area (see figure 7). We sampled 137 properties in the Study Area to confirm that they qualify for soil replacement.

Around 1,175 yards are slated for soil replacement. This includes 709 yards in the Study Area and 466 more yards that we identified through recent soil sampling efforts. As Ecology continues sampling, we expect to find around 25 more yards that qualify for soil replacement.



Photo 3: Contractors removed the top 18 inches of contaminated soil at a home in Tacoma.

Eighty more yards completed in FY 2017

Ecology has completed soil replacement on a total of 207 yards. In FY 2017, we replaced soil on 80 yards in Tacoma. We also met with 78 more homeowners to discuss soil replacement and re-landscaping plans for 2017 and 2018.

Soil Safety Program continues work in areas where children play

In FY 2017, Ecology assessed and sampled 29 play areas and identified four childcares in need of Soil Safety Actions. Ecology also planned work at one camp and one park on Vashon Island, and one park in Des Moines.

Dirt Alert outreach efforts continue to promote healthy actions

Local health departments in Pierce, King and Thurston Counties have Dirt Alert programs. The program goals are to raise awareness about arsenic and lead, educate the public about reducing soil exposure, and encourage healthy actions to manage risk. During FY 2017, across the three programs, outreach staff tested soil at 213 homes, talked to nearly 10,000 people at events, and reached over 7,000 families through mailings.

New Dirt Alert Videos!

The Tacoma Smelter Plume project has three new [Dirt Alert videos](#) that show simple actions residents can take to keep their family healthy. The public can also pick up some great gardening and landscaping tips for around the home. Not only are these great tips for people who live in the Tacoma Smelter Plume Area, they are great tips for anyone living in areas with possible soil contamination. These tips will help reduce the dirt and dust in homes, lessening the effects of dust-caused illnesses like asthma and allergies.

Gardening: <https://www.youtube.com/watch?v=IV4YUdCHJjE>

Mulching: <https://www.youtube.com/watch?v=EKSU8vWfdOU>

Pets: <https://www.youtube.com/watch?v=j7GXIONzGU>

Other work supported by the Tacoma Smelter Plume project

Ecology's staff provides oversight and technical assistance for other projects funded by appropriations from the Asarco settlement. These projects deal with soils impacted by the former Tacoma smelter. Our role is to ensure contaminated soils are properly managed.

Ruston tunnel

In the 2013-2015 biennium, the Legislature set aside \$400,000 of the Asarco settlement for the closure of the Ruston Tunnel. In April 2017, Ecology and the City of Ruston entered into an interagency agreement to complete this project.

The tunnel connected Ruston Way to Tacoma, under the former Asarco plant (see photo 4). Today, a new road goes around the tunnel and the old tunnel is filled with contaminated soils. The next step is to fill the remaining space to make it stable. The final step is to seal the tunnel.

Point Defiance trail

In 2013-2015, the Legislature also set aside \$5 million of the Asarco settlement for the Point Defiance Trails Project. The Trails Project completes a 7 mile waterfront trail connecting Ruston Way to Point Defiance Park.

Construction is well underway, and Tacoma Metro Parks expects to be completed by December 2017 (see photo 5). To date, they have spent \$4,809,657 out of the \$5 million set aside in the Cleanup Settlement Account.

Part of the funding was used for soil management during trail building, including soil excavation, testing, erosion and sediment control.

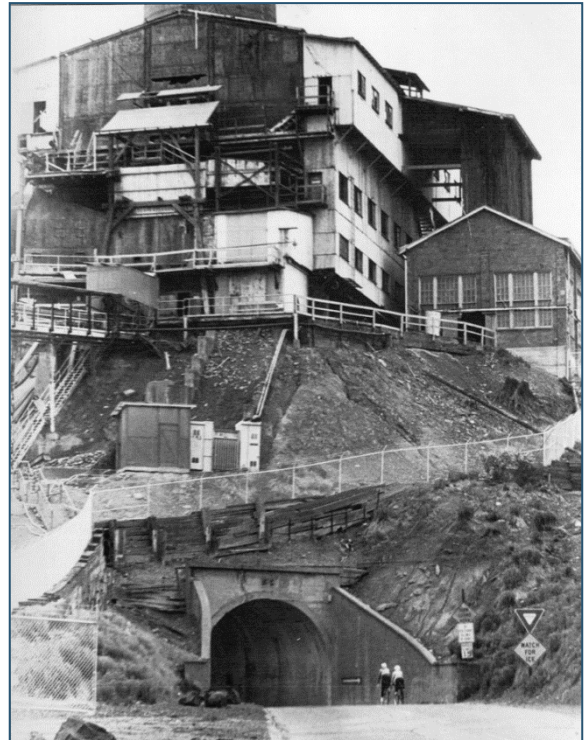


Photo 4: Ruston Tunnel under the former Asarco plant. Photo courtesy of Sherri Forch.



Photo 5: Point Defiance Trails Project during construction. Photo courtesy of Atkinson Construction.

Maury Island Open Space Acquisition

Maury Island Open Space

Funding Source: Tacoma Smelter Plume natural resource damage settlement

County: King

Maury Island is in a highly contaminated area of the Tacoma Smelter Plume (see pages 11-12). Ecology has found high levels of arsenic and lead in forest soils on Vashon-Maury Island. The Maury Island Open Space site, in the King County Parks system, includes 265 acres and about one mile of shoreline (see figure 9). King County is working under Ecology's oversight to clean up arsenic and lead at the site.

King County site acquisition

In the 2010 supplemental budget, the Legislature appropriated \$15 million to assist King County in acquiring the site. The appropriation included:

- \$4.1 million from the Cleanup Settlement Account.
- \$10.9 million from the State Toxics Control Account.

This funding came from the portion of the Asarco bankruptcy settlement that provided compensation for damages to natural resources from the Tacoma Smelter Plume.

Maury Island Open Space Site (Maury Island Natural Area)

The future Maury Island Natural Area includes pure madrone forests and other habitats that support endangered species in Puget Sound, such as chinook salmon, orca, and bull trout. The site's nearly one mile of shoreline is the longest undeveloped stretch of shore in King County. When combined with the County's nearby 320 acre Maury Island Marine Park, the two properties represent the largest public holding of protected marine shoreline in Puget Sound.

King County is addressing soil contamination at the site under Ecology's formal cleanup program. In FY 2013, King County and Ecology entered into a legal agreement that required the county to investigate the site and develop a cleanup plan. King County conducted a Remedial Investigation that sampled soils throughout the site and reported findings in 2014.

Accomplishments through fiscal year 2017

In FY 2017, using data from the Remedial Investigation, King County produced a Feasibility Study that provided a range of cleanup alternatives. King County chose a cleanup option, and submitted a draft Cleanup Action Plan for Ecology's review. Work at the site this year included minor trail work, removal of invasive plant species, and revegetation in areas of the site to prepare for future public use.



Photo 6: View looking south from inside the future Maury Island Natural Area.

Harper Estuary

Harper Estuary

Funding Source: Tacoma Smelter Plume natural resource damage settlement

County: Kitsap

The Harper Brick and Tile Company operated at the site until the 1930s, when it was demolished. In the 2013-2015 and 2015-2017 bienniums, Ecology contracted with Washington Department of Fish and Wildlife (WDFW) to lead restoration efforts for the Harper Estuary restoration project.

State and local governments are partnering on this project to restore tidal processes in the Harper Estuary. The estuary has degraded due to fill, debris, and bulkheads from the abandonment of the Harper Brick and Tile Company factory.



Photo 7: With the removal of brick and fill, salmon habitat is being restored at Harper Estuary.

Accomplishments through fiscal year 2017

Following completion of a restoration design for Harper Estuary, WDFW led the phase one restoration efforts. Key construction efforts that were completed include:

- Removal of nearly 8,000 tons of industrial brick and fill.
- Restoration of over 3 acres of saltmarsh.
- Placement of over 120 pieces of large woody debris in the restored area.
- Reopening approximately 1.3 acres of salmon habitat.
- Funding the purchase of 2.2 acres of private property for placement into public ownership.

Gathering public input

Throughout this process, we gathered feedback from community members and the Suquamish Tribe to help guide restoration efforts. This engagement included sharing progress on restoration plans, discussing public access, setting expectations during construction for road closures and night work, and providing updates on a future bridge to fully connect Harper Estuary and the Puget Sound.

Next steps

Ecology will continue to work with WDFW and Kitsap County to provide funding for ongoing technical assistance and community outreach at Harper Estuary. Anticipated work includes completing surveys and post-construction documentation, supporting public access for pedestrian use and hand launching boats, applying for grants to construct a bridge, and keeping the community informed. Ecology's Washington Conservation Corps will conduct stewardship activities on the site, such as vegetation management and continued brick and debris removal. Remaining funds will be directed toward on-the-ground restoration projects located within the Tacoma Smelter plume (e.g., McNeil Island habitat restoration).

B&L Woodwaste (Louisiana Pacific)

B&L Woodwaste site

Total settlement: \$1.0 million

County: Pierce

Total size: 11 acres + wetlands

Cleanup focus: Groundwater

In the 1970s and 1980s, the B&L Woodwaste landfill received woodwaste, soil, and slag from log sort yards in Commencement Bay. The slag- a byproduct of Asarco's Tacoma smelter- leached arsenic into soils and groundwater. This contamination poses a threat to nearby Hylebos Creek.



Photo 8: The 11-acre landfill with cap and vegetation at the B&L Woodwaste site.

Cleanup liability and funding

Asarco, Murray Pacific, and Louisiana Pacific Corp. were among the parties found liable for cleanup. When Asarco went into bankruptcy in 2005, the other two companies pursued settlements jointly with the state. Most of Murray Pacific's \$22 million settlement is held in a trust that is funding the majority of current cleanup work. The Cleanup Settlement Account holds an additional \$1 million for future work.

Cleanup accomplishments and remaining work

The B&L Woodwaste cleanup has three phases:

- **Phase 1, completed in 1992:** Asarco consolidated the original 18-acre site to an 11-acre landfill. It then installed a cap to minimize rainfall flushing metals and contaminated groundwater out of the landfill.
- **Phase 2, 2008 to early 2013:** Ecology installed a slurry wall around the edge of the landfill. This underground barrier minimizes the flow of contaminated groundwater. We then built a facility to extract and treat groundwater from inside the slurry wall and from the nearby wetlands. Finally, we excavated contaminated sediments from the drainage ditches on three sides of the site.
- **Phase 3, 2015 to the present:** In 2017, as a part of an adaptive management plan to contain and reduce the arsenic plume in groundwater, groundwater will be treated by chemicals outside the landfill on nearby Washington State Department of Transportation property. After treatment, the groundwater treatment system will be shut down, and groundwater will be monitored. The plume reduction/containment operation will be adjusted based on quarterly groundwater monitoring data.

Golden King Mine

Golden King Mine

Total settlement: \$0.5 million

County: Chelan

Total size: 13 acres

Cleanup focus: Soil and stream water quality

The Lovitt/Golden King Mine is located near Wenatchee, on the west side of the Squillchuck Creek Drainage. There are an estimated 450,000 cubic yards of tailings deposited in a tailings impoundment in the bottom of Squillchuck Creek.



Photo 9: Golden King Mine

Table 3: Ten-year spending plan for Golden King mine

Years	Activity
2010-2017	Negotiate access with private land owners
2018-2019	Remedial Investigation and Feasibility Study (contingent on access agreements)
2019-2020	Cleanup Action Plan
2017-2022	Water quality treatment monitoring Institutional controls to protect human health Engineered controls such as capping and slope stabilization

Accomplishments through fiscal year 2017:

While cleanup activities are still planned, work has stalled. This site has experienced seven years of access issues that have delayed work. When access issues are resolved, we plan to move forward with the cleanup activities outlined in Table 3.

Monte Cristo Mine

Monte Cristo Mine

Total settlement: \$6.5 million

County: Snohomish

Total size: Fifty- four mines and one mill

Cleanup focus: Soil, surface water, and sediment

In the summer of 1889, settlers discovered the site and quickly established a town site. In 1893, the railroad was completed to transport ore to the smelter in Everett (see page 10).

Mineral production flourished for a few years until massive floods destroyed rail access in 1897. Mining became intermittent, operated by a number of smaller companies until 1920. The site is located on a mix of private and federal property, including property within the Henry Jackson wilderness area, which is a popular hiking destination.



Photo 10: Monte Cristo Mine

Table 4: Ten-year settlement spending plan for Monte Cristo mine

Years	Activity
2011- 2017	Remedial Investigation and Feasibility Study
2012- 2013	Environmental review, public outreach, and bat habitat and topographic survey
2013-2015	Completed construction of access route and onsite repository
2015	Completed removal of contaminated waste rock to the onsite repository
2015	US Forest Service completed interim cleanup action
2015- 2022	Repository operations and maintenance, water quality treatment investigation and monitoring
2015- 2022	Water quality treatment and sediments monitoring

Accomplishments through fiscal year 2017

In FY 2017, Ecology conducted groundwater sampling in conjunction with the United States Forest Service (USFS). Ecology also continued ongoing monitoring throughout the site. Ecology is monitoring the impact of elevated metals on plants and animal, as well as monitoring sediment and water quality to evaluate the impacts on aquatic organisms.

We are compiling the data gathered for the privately owned mine sites into a memorandum with the USFS, which will be presented in FY 2018. The memorandum will help determine future MTCA actions required at the Monte Cristo Mining Area.

Van Stone Mine

Van Stone Mine

Total settlement: \$3.5 million

County: Stevens

Total size: ~150 acres

Cleanup focus: Soil, sediment, surface water

The Van Stone Mine was the state's largest open-pit mine. It is located about 28 miles northeast of Colville. It operated from 1951 to 1994 under several owners, including Asarco. Around 270,000 tons of ore were extracted from 1.3 million tons of rock. The Upper Tailings Pile has breached twice, with the most recent event occurring in 2012.



Photo 11: Van Stone Mine

Table 5: Ten-year settlement spending plan for Van Stone mine

Years	Activity
2014- 2016	Remedial Investigation and Feasibility Study for soils, sediments, wastes, groundwater, and surface water
2017	Engineering design for cleanup and cover systems at the upper and lower tailings piles and other areas identified during the investigation
2017- 2019	Cleanup and building the cover systems
2019	Start of operations and maintenance for the cover systems

Accomplishments through Fiscal Year 2017

Ecology finalized the settlement-funded sampling work for the Remedial Investigation in 2016. The data was used to complete the Feasibility Study, which was completed in July of 2017.

Additional funding is needed to continue future work

While cleanup is planned, the current funds earmarked for the Van Stone mine site will not cover the cost of cleanup. Over the next two years, the Van Stone mine settlement funds will be used for creating an engineering design for cleanup, and the cost of remediating a small, unpermitted dam at the site. By FY 2019, additional funds outside of the settlement account will be needed to further address site contamination, and continue planned cleanup activities.

Lilyblad Petroleum Insurance Settlement

Lilyblad

Total settlement: \$800,000

County: Pierce

Total area: Two acres

Cleanup focus: Soil, groundwater

From 1978 to 1988, Lilyblad Petroleum, Inc. ran a spent solvent and dangerous waste recycling operation. The business was located at 2244 Port of Tacoma Road.

Since then, Lilyblad has dissolved and Pacific Functional Fluids now operates the facility. Soil and groundwater at the site are contaminated with petroleum and chlorinated solvents.



Photo 12: Worker installing a new remedial well at the former Lilyblad property.

Multiple funding sources for cleanup work

In 2009, Old Republic Insurance Company paid \$800,000 on an excess liability policy held by Lilyblad Petroleum. This funding paid for part of the cleanup work. Over the years, the cleanup site has received funding from multiple sources, including the Old Republic Settlement, the State Toxics Control Account, the Cleanup Settlement Account, and the Environmental Stewardship Legacy Account.

Accomplishments through fiscal year 2017

In 2008, Ecology started drilling wells, and installed, and started a pump and treatment system for contaminated groundwater at the site. In 2012, we had a 50 percent reduction in the system to the northern part of the Lilyblad property. These wells continued pumping to maintain hydraulic control and prevent migration of contaminated groundwater toward the Blair Waterway.

The most recent accomplishments include:

- **July 2013- June 2015:** By December 2013, full scale operation of dual phase extraction wells resumed on the Lilyblad property. In the summer of 2015, Ecology did site-wide groundwater and soil sampling to evaluate the progress of the treatment.
- **July 2015- June 2016:** Due to iron fouling, the pump and treatment system shut down periodically for maintenance. Site monitoring showed the extent of contamination decreased in the southern area of the site.
- **July 2016- June 2017:** Annual soil samples have shown a decrease in contaminants in the outer portions of the contaminated site. The extraction and treatment of groundwater and soil vapor continues to contain the plume within the site. Most efforts are focused in the source areas. To date an approximate 40,000 pounds of contaminants have been removed.

Conclusion

Conclusion

In FY 2017, work continued on many of the cleanup projects funded by the Cleanup Settlement Account. One key example is the sampling and cleanup work underway within the Everett Smelter and Tacoma Smelter Plume sites. In FY 2017, Ecology finalized plans to remove soil on 11 yards in the Everett Smelter site, and cleaned up 80 yards in the Tacoma Smelter Plume site.

The Cleanup Settlement Account also moved forward work at former mine sites like the Monte Cristo Mine and the Van Stone Mine. Contaminants are being contained at former industrial sites like Lilyblad. Estuaries and shorelines are being restored, such as at Harper Estuary. In FY 2017, WDFW led the first phase of restoration activities at Harper Estuary. Restoration efforts included reopening 1.3 acres of salmon habitat through the removal of nearly 8,000 tons of industrial brick and fill. The Cleanup Settlement Account makes this work possible and moves this work forward.

Cleanup Settlement Account moves important work forward but future funds needed

At the end of FY 2017, the remaining balance in the Cleanup Settlement Account was \$37,156,000. The loans outstanding to the account total \$37,893,000. This total of \$75 million will not be enough to complete all cleanup activities.

In the future, sites like the Everett Smelter, Tacoma Smelter Plume, and Van Stone Mine will need to rely on funds other than the Cleanup Settlement Account to fund cleanup. Historically, Ecology has requested and the Legislature has funded cleanup projects from the Model Toxics Control Act accounts. Right now, those accounts are insufficient to fund projects already authorized by the Legislature, including cleanup projects. Large funding needs for environmental work, a drop in revenue to the MTCA accounts, and legislative appropriations have contributed to the revenue shortfall.

Every year, more contaminated sites are identified than can be cleaned up. Since 2000, nearly 4,500 sites have been reported (264 yearly average) and almost 3,350 sites have completed cleanup (185 yearly average). This growing backlog of contaminated sites needing cleanup, coupled with ongoing cleanups of existing sites (like the former Asarco sites), will require that priorities be set and solutions identified to fund Washington's cleanup work. The funding may come from the MTCA accounts, bond appropriations, or other funding sources.

The Cleanup Settlement Account moves forward important cleanup projects by cleaning up pollution, supporting sustainable communities, and enhancing natural resources for the benefit of current and future generations. With sound management plans in place, and additional funding in the future, the cleanup work made possible through the Cleanup Settlement Account will continue for many more years.

Cleanup Settlement Account Fiscal Year 2017

Contributors

Toxics Cleanup Program

Marian Abbett
Celina Abercrombie
Brendan Dowling
Michael Feldcamp
Stacy Galleher
Amy Hargrove
Mohsen Kourehdar
Jeff Lewis
Cris Matthews
Brad Petrovich
Joanna Richards
Ha Tran
Amelia White
Angie Wirkkala

Lead Author and Editor:

Crescent Calimpong

Cleanup Site Information

Cleanup site search page: <https://fortress.wa.gov/ecy/gsp/SiteSearchPage.aspx>

Everett Smelter website: http://www.ecy.wa.gov/programs/tcp/sites_brochure/asarco/es_main.html

Tacoma Smelter Plume website: <http://www.ecy.wa.gov/toxics/tacoma-smelter.html>

Toxics Cleanup Program Information

Contact: Angie Wirkkala, Supervisor, Financial Services Unit
P.O. Box 47600, Olympia, WA 98504-7600
(360) 407-7219, Angie.Wirkkala@ecy.wa.gov

Program website <http://www.ecy.wa.gov/programs/tcp/cleanup.html>

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Washington State Department of Ecology

Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600