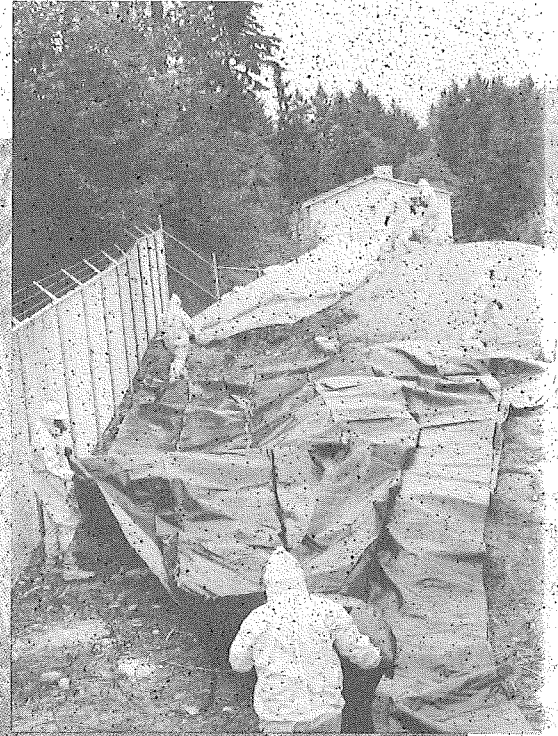


# Model Toxics Control Act

## 1992 Annual Report

Ecology Publication no. 92-100



January 1993

# Department of Ecology Mission Statement

The mission of the Department of Ecology is to protect, preserve and enhance Washington's environment and promote the wise management of our air, land and water for the benefit of current and future generations.

To accomplish this mission, Ecology will:

- Recognize its most valuable asset is its dedicated and committed employees and it will provide necessary support, training and professional development.
- Promote prevention and conservation as the most effective ways to preserve our natural resources and protect the environment.
- Enforce environmental laws and regulations in a fair and firm manner.
- Provide public education programs to promote wise use of our natural resources and encourage environmental protection.
- Offer information, technical and financial assistance to help the public, governments, businesses and industries comply with environmental laws and regulations.
- Promote recognition that compliance with environmental laws and regulations is compatible with a sound economy.
- Promote meaningful public involvement in the development of rules, regulations and new initiatives.
- Provide leadership in addressing emerging problems and strive to bring public agencies and diverse interest groups together to address environmental issues.
- Use an integrated approach to resolve environmental issues.
- Place special emphasis on educating and working with youth to create a strong environmental ethic.
- Help state agencies set an example in environmental protection.
- Work with executive and legislative branches to promote sound environmental policy.

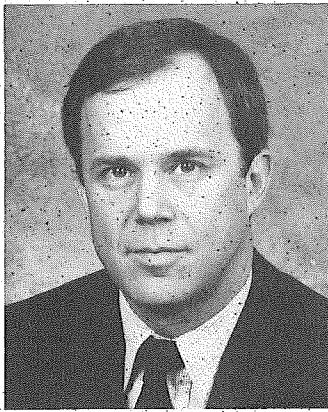
*(Adopted 1988)*

# Table of Contents

<b>Executive Summary</b> .....	2
<b>Where We Stand (Progress Report)</b> .....	4
<b>Site Highlights</b> .....	6
<b>Independent Cleanups/Leaking Underground Storage Tanks</b> .....	10
<b>Puget Sound: Ecology Urban Bay Action Teams</b> .....	11
<b>Technical and Administrative Issues</b> .....	12
<b>Public Participation</b> .....	13
<b>Prevention</b> .....	14
<b>Protecting Washington's Water Resource</b> .....	16
<b>Department of Health</b> .....	18
<b>Hazardous Waste Emergencies</b> .....	19
<b>Model Toxics Control Act Financial Analysis</b> .....	20
<b>Local Government Grants</b> .....	22
<b>Grants Status Report</b> .....	23
<b>Hazardous Sites List</b> .....	26

# Executive Summary

## A Message from the Director



Fred Olson

The Model Toxics Control Act is indeed a model for the future of environmental regulation and cleanup. Its goals are clear and its implementation is based on collaboration, education and assistance backed up by enforcement only when necessary. This has led to an impressive amount of positive action.

Ecology's Toxics Cleanup Program gained maturity during fiscal year 1992, with an increasing number of sites moving out of the study phase and into actual construction of cleanup facilities and/or excavation of contaminants.

Of particular interest are Ecology's Urban Bay Action Teams, whose coordinators cut across traditional lines of authority to focus both state and local resources on seven fragile bays in Puget Sound. Sources of toxic pollution in those bays are being

stopped, contaminated sites are being cleaned up, and local citizens are taking responsibility for a cherished natural resource right where they live and work.

But the programs funded through the Toxics Accounts don't just clean up hazardous waste mistakes of the past. They're an active resource to help businesses, local governments and individuals do the right thing environmentally.

For example, Ecology staff is visiting 900 auto repair shops — not to penalize small business owners, but to give advice on how they can work cleaner. Other staff made 250 visits to firms that generate hazardous wastes to help them reduce waste, recycle, and save money on disposal costs.

Other state agencies are doing their part as well. The Department of Health advises citizens on health risks at hazardous waste sites. More than 700 toxic spill scenes handled by Ecology usually were reached first by local firefighters who received hazardous materials training from the Department of Community Development. The Department of Natural Resources is looking after toxic contamination on state land, and the newly-established Office of Marine Safety is working to reduce the threat of a devastating oil spill to the state's water resources.

Our goal is to identify what is needed to make environmental regulations work best, then deliver service to those who need it.

Financially-strapped local governments are among those most in need. In fiscal year 1992, Ecology gave more than \$22 million dollars in Local Toxics Account grant money to local governments to help them clean up toxic sites and prevent new ones. Every qualified request received Ecology assistance. Thanks to new Coordinated Prevention Grants, local governments receive financial help when they work together and take a regional approach to solving hazardous waste problems.

When the people of Washington approved Initiative 97 four years ago, they sought to preserve their state's quality of life. The effort they set in motion now has solid momentum and is contributing to the vitality, strength and livability of this state.

Fred Olson, Acting Director  
Washington State  
Department of Ecology

## Toxics Cleanup Program Overview



Carol Fleskes

Fiscal year 1992 ended for the Toxics Cleanup Program with a strong record of success and some stiff challenges ahead in both policy and funding.

The early years of building the program are starting to bear fruit. Of the nearly 1,200 confirmed or suspected sites known to Ecology, about 400 are now on the state's Hazardous Sites List.

The fact that just one site has been removed from that list so far is deceptive because of the long process of monitoring required for cleaned-up sites. Cleanup construction work is finished at 26 sites that have gone through formal government oversight, and immediate threats to human health and the environment have been reduced at another 21. Look just a short distance up the pipeline and you see work underway at about 150 more sites.

On the following pages, you'll see a comprehensive review of the progress the program has made to date on these sites, along with a timeline that puts the task into perspective. Please note this progress report includes 56 federal Superfund sites which are co-managed by Ecology and the Environmental Protection Agency and must meet state cleanup standards.

The Model Toxics Control Act has also helped produce an impressive number of cleanups conducted outside of the formal process. At the end of fiscal year 1992, 114 independent cleanups had been reported to Ecology, with cleanup construction reported finished at 33 of them.

But the universe of cleanup sites in Washington is larger still.

Staff at Ecology's regional offices has worked diligently to monitor more than 2,200 cleanups reported underway at leaking underground storage tank sites. Most of these cleanups are tracked separately from the sites mentioned above, and the vast majority are conducted independently.

Ecology's decision to merge cleanup of leaking underground storage tank sites with regulation of operating tanks has been a good one, given the volume of activity in that area. Improvements made during the past year will allow us to do a better job of protecting people and the environment from tank-related problems, while making

tank operations and cleanups less traumatic for their owners.

I invite you to examine this report and its companion report on the Underground Storage Tank Act to learn more about tank regulation and cleanups.

The Model Toxics Control Act's requirement that potentially liable persons pay for cleanup is being respected, with most site costs being covered by private funding. Ecology has spent about \$5.2 million so far at the five most expensive sites that need state financial assistance for cleanup, while more than \$1.3 million has been committed to help small businesses dealing with cleanups of leaking underground storage tanks.

As always, when pressure is exerted on a problem it starts to push back. The Model Toxics Control Act has encouraged

owners of commercial and industrial properties to consider hazardous waste problems when buying and selling real estate, and is giving them reason to worry about buying cleanup liability along with their property. Lenders and insurance companies also fear liability.

We have responded by creating a work group of industry, environmental and banking interests tasked with clarifying the impacts of the Act on real estate transactions. And, we're researching ways to accelerate Ecology's review of independent cleanups by making such reviews available for a fee paid by the potentially liable party rather than at the expense of the taxpayers. This program would help clear a backlog of independent cleanup sites waiting for review.

Another challenge for the cleanup program is a Washington State Supreme

Court decision that has at least temporarily taken away potentially liable parties' rights to collect damages from those who share liability for cleaning up a site. The Bird-Johnson vs. Dana Corporation ruling requires the so-called "right of contribution" to be specifically stated in the Act. Ecology and others will ask the legislature to make this correction in the law.

Goals for the Toxics Cleanup Program in fiscal year 1993 and beyond are fourfold:

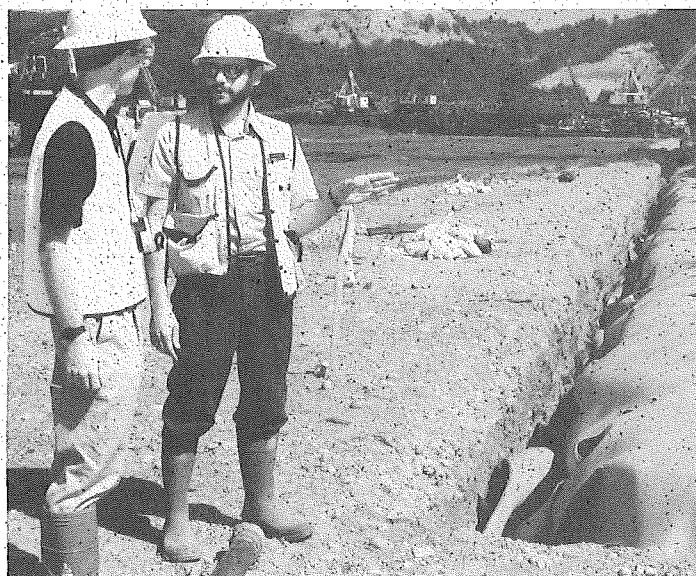
- Maintain the staff and resources needed to clean up existing sites as quickly and efficiently as possible
- Accelerate review of independent cleanups through a new review process
- Hone our skill at communicating and applying the regulation and cleanup standards
- Provide assistance to those affected by the Act — allowing them to make informed decisions about risks and potential liability.

As I have said many times before, our ultimate goal is to work ourselves out of business. We believe we are on track toward that goal and look forward to the continued cooperation from business and government that will allow Washington to achieve it.

*Carol L. Fleskes*

Carol Fleskes, Manager,  
Toxics Cleanup Program

*Site Manager Dom Reale points out features of a waste containment cover and stormwater management system to Commencement Bay Urban Bay Action Team Coordinator Dave Smith.*



# Where We Stand:

Toxics Cleanup Program Progress Through Fiscal Year 1992 (State and Federal Sites)

## Site Hazard Assessment



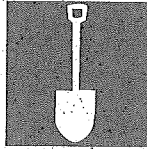
In progress  
**40**  
Completed  
**434**

A Site Hazard Assessment is Ecology's first chance to characterize a hazardous waste site. Ecology gathers information to:

- Confirm or rule out contamination
- Identify hazardous substances
- Identify the site's environmental characteristics
- Evaluate potential threats to human health and the environment

Ecology determines either that no further action is needed, or ranks the site relative to others that have undergone the same scrutiny. Sites needing cleanup are placed on the *Hazardous Sites List*.

## Interim/Emergency Cleanups

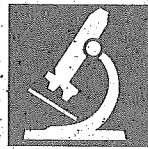


In progress  
**33**  
Completed  
**21**

The goal of all hazardous waste cleanups is to reduce risk to humans and the environment. Interim and emergency cleanups are used to *reduce risk fast* on portions of a site that pose the greatest threat, without waiting for an in-depth study to be finished.

Interim or emergency cleanups often occur simultaneously with a phase in the long-term cleanup process. Public notice and comment required.

## Remedial Investigation/ Feasibility Study

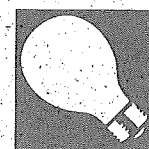


In progress  
**94**  
Completed  
**59**

Eliminating human health and environmental impacts at a hazardous waste site is a sizeable engineering project. Careful study and planning are needed to make sure the chosen cleanup method makes sense environmentally and economically.

The remedial investigation provides specific and detailed information about the extent of contamination at a site. During the feasibility study, Ecology and the potentially liable persons use that information to develop and evaluate options for cleanup. Public notice and comment required.

## Cleanup Action Plan

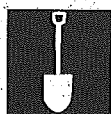


In progress  
**20**  
Completed  
**12**

Ecology chooses a preferred cleanup option from alternatives in the feasibility study and presents its decision for public comment as a "cleanup action plan". The plan identifies a preferred method of cleanup and specifies cleanup standards ("how clean") and other requirements at the site. Public notice and comment required.

## Site Cleanup Timeline

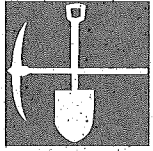
**Cleanup is a Long-Term Commitment** *Once work begins, a cleanup project can take from less than one year to ten years to complete, depending on its complexity. Operation and maintenance and/or monitoring of a cleanup system can stretch that timeline to 30 years or more. Note that Ecology pursues Interim or Emergency Cleanups to reduce risk while long-term work proceeds.*



**6**  
months

**2-5 years**

**Cleanup Construction**



In progress  
**33**  
Completed  
**26\***

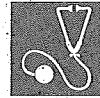
Actual cleanup begins once the cleanup action plan is finalized and a consent decree or enforcement order is issued. Cleanup includes plan design, construction, and the operation and monitoring of cleanup actions.

Ecology requires the use of permanent cleanup

methods such as reuse, recycling, destruction or detoxification wherever practical. Containment or landfilling of contaminants are less preferable because they require long-term monitoring.

*\* Eleven of these sites do not appear on the Hazardous Sites List because cleanup construction and post-cleanup monitoring were conducted under statutes used before passage of the Model Toxics Control Act.*

**After Cleanup Construction...**



Operation & Maintenance/  
Monitoring

**Operation and Maintenance 10**

**Monitor only 9**

**Finished before MTCA 6**

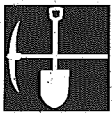
Before removal from the Hazardous Sites List, all sites go through a period of performance monitoring to make sure the cleanup was effective. Many sites also require operation and maintenance of the chosen cleanup method. For example, cleanup of contaminated ground water often requires operation of a "pump and treat" system for many years.



Removal from Hazardous Site List

**Complete 1**

A site may be removed from the list once cleanup standards have been met or containment and control of contaminants have proved effective. Monitoring must be conducted to confirm the long-term effectiveness of the cleanup. The length of the monitoring period depends on the nature of the site and the cleanup methods used. Public notice and comment is required before a site is removed from the Hazardous Sites List.



**1-3 years**

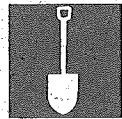


**5-30 years**



# Site Highlights

## Bonneville Power Administration Ross Complex



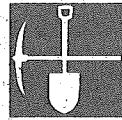
Bonneville Power Administration (BPA) and Ecology

cooperated on an early removal action last summer, excavating and properly disposing of 950 cubic yards of contaminated soil from a portion of this site. The work was finished on time and \$80,000 under budget.

Contamination was caused by activities at this power distribution and maintenance facility, which has operated in Vancouver since 1936. The removed soils had low-level contamination from PCBs, solvents, polynuclear aromatic hydrocarbons (PAHs), lead and other metals.

Cleanup of the rest of the site is being conducted under an agreement between Ecology, BPA and the Environmental Protection Agency.

## General Metals



General Metals in Tacoma has designed and installed one

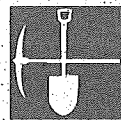
of the first stormwater treatment systems of its kind in Washington as part of a cleanup at its plant on Commencement Bay.

The site has been used as a metals recycling facility since 1965.

In addition to stormwater treatment, the site grounds are being capped with 12 inches of low permeability asphalt to prevent rain water from filtering through heavy metals in the soil. The cap will minimize the impact of soil contamination on ground water and the bay. Construction began in summer, 1992 and will be completed in phases over the next three years.

The company will also take measures to correct waste disposal practices which might lead to future contamination. Cleanup work at the site is expected to end in 1995 at a cost of \$10 million.

## Alcoa Vancouver



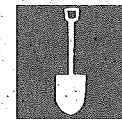
The Aluminum Company of America (Alcoa) is clean-

ing up its former Vancouver smelter at a cost of about \$12 million. Contamination at this federal Superfund site resulted from the disposal of hazardous waste generated in the smelting process. The material, called potlining waste, was stored in large piles that were open to environmental exposure. An Alcoa study found cyanide and fluoride contamination in the site's ground water which has spread to the Columbia River.

Alcoa will remove and dispose of about 47,000 cubic yards of potlining waste, investigate the soil underneath the waste piles, then place an impermeable (leak resistant) cap over the affected area. Use of the site will be restricted to prevent withdrawal of ground water. Ecology will discontinue ground water monitoring and consider the site clean when the ground water meets drinking water standards.

Alcoa is proceeding with the cleanup. Work will be finished by the end of 1992.

## Pacific Northwest Plating (Boomsnub)



The State Toxics Control Account is paying for cleanup

at Pacific Northwest Plating (Boomsnub Corporation), the largest Ecology-funded cleanup in the state at a current cost of about \$1.8 million. Boomsnub is financially unable to support all investigation and cleanup costs at the site.

Ecology has spent most of its outlays so far on an interim action to treat the chromium-contaminated ground water and prevent it from spreading to Clark County drinking water wells nearby. The chromium plume is larger than originally thought, so an expanded ground water extraction network is being constructed to intercept the larger plume. The network should be operating by late 1992.

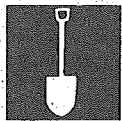
Another threat to local drinking water supplies has made this site more complex. Volatile organic compounds from an unknown source are flowing into ground water on the Boomsnub site. Ecology staff, local governments and businesses are working together to identify possible sources of this contamination.



Contaminated soil is loaded into a plastic-lined trailer at the Bonneville Power Administration Ross Complex in Vancouver.



## Everett Smelter



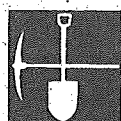
Ecology and ASARCO, Incorporated (Asarco), a

potentially liable party at the site, have completed an interim cleanup in this north Everett neighborhood built over the site of a lead smelter which ceased operating 80 years ago. Asarco was the last owner of the smelter.

Last year, Ecology discovered arsenic, lead and cadmium above Model Toxics Control Act cleanup levels both on and below the surface of soil in the neighborhood. Ecology chose to complete an immediate cleanup of exposed contaminated soil to reduce the potential for residents to suffer long-term health effects. Work on the site ranged from paving of exposed alleys and parking areas to removal and replacement of soil in several gardens.

Ecology and Asarco have begun a remedial investigation/feasibility study to determine the full extent of contamination on the site and to devise a final solution to the problem.

## PACCAR



To date, Ecology and PACCAR Inc have cleaned

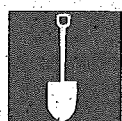
up nearly half of this 82-acre site once used as a foundry and rail car/military vehicle manufacturing plant.

Cleanup on the remainder is scheduled for completion by 1994. Full scale cleanup, underway since July, 1991, has addressed soils, ground water, surface water and air quality through a variety of cleanup methods.

Soil cleanup and excavation is expected to reduce low level water contamination at the site to bring it within Safe Drinking Water Act standards. Public access to the site will be controlled and long-term monitoring will be required.

One-half acre of the site, located on the northeast corner, has been cleaned up and removed from the overall site. Puget Sound Power & Light Company has installed a substation there to power PACCAR's Kennworth Assembly Plant, which is currently under construction.

## Bingo Fuel Stop



Ecology and fire officials ordered this gas station near

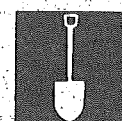
Ellensburg closed after discovering the safety of customers was threatened by an improperly conducted independent cleanup at the site. A flash fire had occurred at the site a week prior to the discovery. Ecology found petroleum floating on ground water and in the soil resulting from corroded underground storage tank lines.

An emergency cleanup was ordered.

The largest deposits of gasoline and diesel have now been removed from ground water on the site. Contaminated soils were removed and are being stored temporarily at the site. Five underground storage tanks and lines have been excavated and properly disposed of.

A remedial investigation/feasibility study to determine the extent of damage to the surrounding environment will be conducted under direct state oversight starting in late 1992.

## Burlington Northern - Othello



Burlington Northern Railroad recycled petroleum-con-

taminated soil into asphalt as part of an interim action at its former locomotive refueling facility in Othello. Excavation work was completed in August, 1992.

Recycling is Ecology's preferred cleanup method for hazardous waste sites. In this case, it was used to clean up contamination while reducing consumption of new materials.

The interim action also included efforts to clean up contaminated ground water and prevent its migration into nearby wetlands and the Potholes Canal, 600 feet west of the site. Ground water flowing through the site was diverted, while water on the site was removed. Recovered ground water was treated and sent to Othello's sewage treatment system.

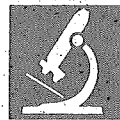
A remedial investigation/feasibility study will identify additional contamination and examine alternatives for final cleanup.

Workers remove an underground storage tank from the Bingo Fuel Stop site in Thorp, near Ellensburg.



## Site Highlights (continued)

### North Market Site



After a delay due to lack of funding and enforcement

authority, Ecology has resumed the extensive study needed at this Spokane site through issuance of Model Toxics Control Act agreed orders to four potentially liable parties. It was named a federal Superfund site in 1990.

A refinery operated at the site until 1953. Waste management practices at that time included open waste lagoons of petroleum products and other disposal activities that have contaminated soil and ground water.

Properties where wells have been contaminated by the petroleum plume have been supplied replacement sources of clean water.

Ecology expects to finish the remedial investigation in the summer of 1993. A feasibility study that will develop cleanup alternatives will be finished in 1995.

### Pasco Sanitary Landfill



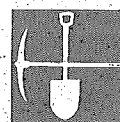
A crucial element of a successful hazardous waste

site cleanup is cooperation between potentially liable parties and Ecology. At Pasco Sanitary Landfill, 29 potentially liable parties have agreed to work toward cleaning up contamination caused by the landfill. The landfill was added to the federal Superfund list in 1990 after previous test results indicated several hazardous substances in the site's ground water.

A remedial investigation scheduled to start in late 1992 will begin with an investigation of the physical nature of the site and gasses found in the soil. Ground water samples will be taken and 20 years of data on the site will be reviewed.

The remedial investigation will help determine the source of contamination and its possible effects on human health and the environment.

### Weyerhaeuser Raymond Shop



The Weyerhaeuser Company has spent more than \$2.5 million so far cleaning up petroleum contamination caused by an underground fuel line leak at its truck shop in Raymond.

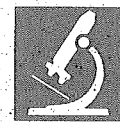
So far, Weyerhaeuser has treated more than four million gallons of ground water and about 40,000 cubic yards of soil, and has recovered more than 14,000 gallons of petroleum fuel that had been trapped underground.

Weyerhaeuser constructed a bioremediation cell, which is a temporary "bubble" structure under which excavation of soils can occur year-round. Bioremediation is a process that uses naturally occurring organisms to decompose petroleum products in the soil.

In addition, a cover prevents contaminants from moving back into the ground with rain water. Runoff from the site is pumped to the on-site water treatment system.

Weyerhaeuser and Ecology expect cleanup to be finished by September, 1993.

### Trans Mountain Oil Pipe Line: Laurel Pump Station



Trans Mountain Oil Pipe Line Corporation is cleaning up the

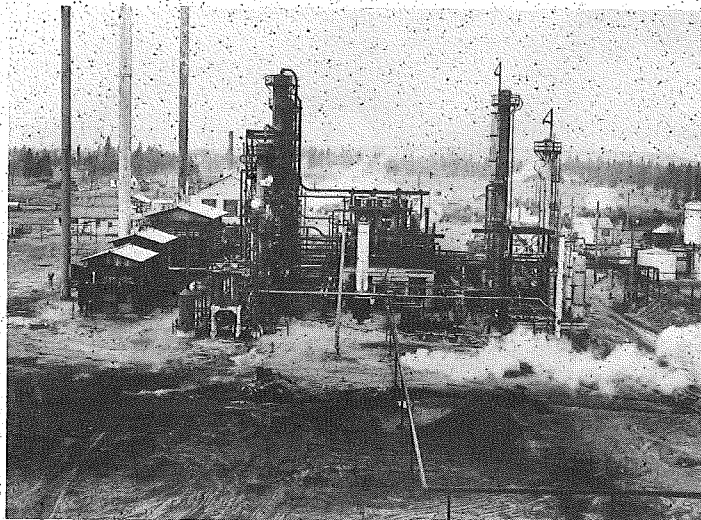
remains of a series of petroleum spills at this pump station in rural Whatcom County. The pump station has been used to pump petroleum products to refineries in Anacortes, Cherry Point, and Ferndale.

The three most recent spills all occurred within the past two years.

The company agreed to work under an Ecology enforcement order to expedite cleanup of a January 1991 natural gas condensate leak. Shortly after work started, a second spill — this time crude oil — further contaminated the site. About three months after the second incident, another crude oil spill from a pressure relief tank complicated an already difficult cleanup job.

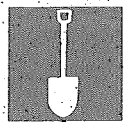
Ecology has amended the order to include cleanup of both the recent spills and historical contamination at this site, plus improvements to prevent additional spills.

Trans Mountain has independently investigated the extent of contamination at the site and is now conducting further studies with Ecology oversight. It is also developing a spill prevention plan which will reduce the risk of new spills.



Contamination caused by poor waste management practices can be seen in this 1940s photo of a refinery that once occupied the North Market Site in Spokane. A modern petroleum tank farm, still operates at the site.

## Yakima Railroad Area



About 450 households in southeast Yakima have

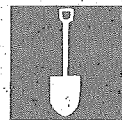
been using bottled water for the past year under a program organized by Ecology. The water is paid for by parties that have been named potentially liable for perchloroethylene (PCE) contamination of the shallow ground water in that part of town.

PCE, a solvent used as a de-greaser and dry cleaning agent, has been found in 28 out of 40 wells tested in the area.

Ecology is now working with cities of Yakima and Union Gap to provide a permanent supply of clean water to residents affected by contamination — funded by a grant from the Local Toxics Control Account. Ecology intends to collect these costs from the liable parties. Construction is expected to begin in 1993.

Once residents have a permanent supply of safe water, a remedial investigation/feasibility study will be conducted to define the extent and range of contamination and to devise cleanup options.

## Manhole 34



Gasoline contamination at this site in Sunnyside has

at times leaked dangerous levels of petroleum vapors into a section of the city storm sewer system. Four businesses that sell gasoline are part of the site. Potentially liable parties have agreed to Ecology requirements that they take actions to control the spread of contamination and track down its source or sources.

Ecology encouraged the owners and operators of the businesses to independently conduct the cleanup, but placed the site under direct state oversight when inadequate actions were taken.

Two of Sunnyside's municipal wells lie in the path of ground water contaminated at the site, prompting Ecology's concern that study and cleanup get underway. The wells will be monitored for signs of contamination.

After completing the interim action, Ecology will begin negotiations on a remedial investigation/feasibility study to determine the full extent of the contamination and to select final a cleanup strategy.

## Puget Sound Naval Shipyard



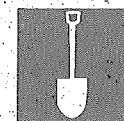
Ecology and the Navy have started work on the most complex hazardous waste

cleanup project ever proposed for a military base in Washington.

An Ecology team comprised of staff from several areas of expertise will take a coordinated approach toward helping the Navy improve environmental practices and clean up contamination caused by more than 100 years of operations at the Puget Sound Naval Shipyard in Bremerton.

Plans are ready for the first of at least four remedial investigation/feasibility studies at the shipyard. This first in-depth study focuses on contaminated sediment in pits adjacent to Sinclair Inlet where the Navy disposed of about 30,000 gallons of liquid industrial wastes, herbicides and pesticides over nearly ten years. All of the studies will be finished within five to eight years.

## Naval Supply Center Puget Sound



The U.S. Navy and Ecology have agreed on plans for an interim cleanup at the Naval Supply Center, located on

27 acres within the Puget Sound Naval Shipyard.

The Navy is focusing immediate attention on a two-acre portion of the site which was formerly used for battery recycling. The interim cleanup action will reduce hazards to workers caused by lead-contaminated soil and address stormwater runoff.

The cleanup will be scheduled to accommodate current metal recycling activities in the area. Ecology plans to start the interim action in November, 1992 and hopes to complete it in about six months.

In addition to the immediate cleanup work, the Navy will spend about three years on a remedial investigation at the Supply Center to determine the amount and severity of overall contamination at the site.

*Ecology engineer Peter Brooks surveys a site once used for recycling lead-acid batteries at Naval Supply Center Puget Sound in Bremerton. This area is part of an interim cleanup conducted by the Navy.*



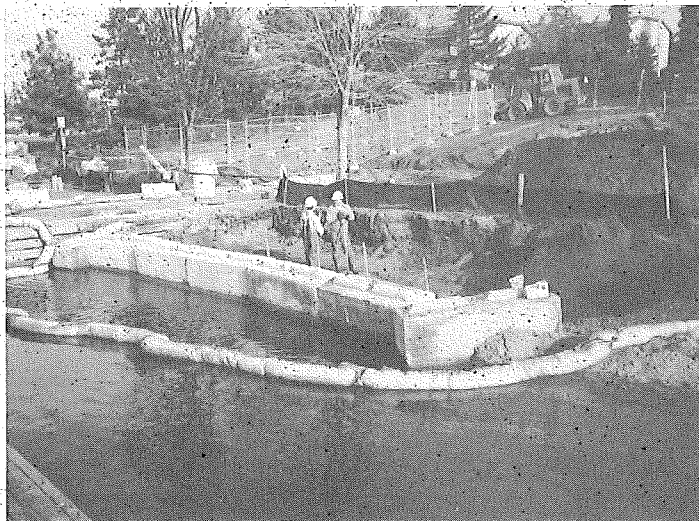
# Independent Cleanups/ Leaking Underground Storage Tanks

## Independent Cleanups

The Model Toxics Control Act encourages potentially liable parties to clean up their sites independently of Ecology oversight whenever possible. This has allowed hundreds of smaller or less complex sites to be cleaned up quickly without having to go through the formal state process.

The law requires the owner/operator of an independent cleanup site to notify Ecology upon discovery of a release of hazardous substances to the environment. When the independent cleanup is finished, a detailed report must then be filed for review by Ecology. The agency can require more cleanup work if needed, or issue notice that it intends no further action at the site.

*Soil is treated on-site at the Houghton Beach Park cleanup. Work was conducted independently by Chevron U.S.A. Products Company, Shell Oil Company and the City of Kirkland.*



## Site Profiles

■ **Houghton Beach Park** in Kirkland was closed for two summers while the City of Kirkland and two companies cleaned up petroleum contamination at the site. Shell Oil Company and Chevron U.S.A. Products Company, owners of bulk storage facilities that once occupied the site, paid for the \$750,000 cleanup. All contaminated soils were treated on-site. The park is now open.

■ **Construction of the Spokane Intercollegiate Research and Technology Institute** faced potentially fatal delays when lead contamination was found in soil at its riverfront site. Working with Ecology, state and local governments hired an environmental consultant and devised a plan to properly contain the soil on-site at reasonable cost. The site for the new building is now safe for human use and the project is back on track.

## Leaking Underground Storage Tanks

The majority of independent cleanups are at sites where underground storage tank systems have leaked petroleum products into the soil and ground water.

Of the 2,200 cleanups initiated so far at leaking underground storage tank sites, only 37 are in the formal state process. Sites that go through the formal process either have unusual problems or have owners who have qualified for financial assistance, which requires a consent decree with Ecology.

Leaking underground storage tank systems are of particular concern because most of them are located near homes and businesses.

■ **Near Issaquah**, expansion of water supplies to support new homes and businesses has been limited because a plume of gasoline-contaminated water hangs above the aquifer.

■ **In Seattle**, a petroleum leak has forced constant monitoring of a nearby apartment building for explosive levels of gasoline fumes.

■ **In Thorp**, near Ellensburg, Ecology shut down a service station/convenience store where concentrated gasoline fumes from leaking tank lines endangered customers and the environment.

## Underground Storage Tank Activities Merged

During FY 1992, Ecology improved efficiency and service to clients by merging two programs that work with underground storage tanks. Now, the same staff handle both regulation of underground storage tanks and cleanup of leaking tanks.

The two efforts initially had been separated because they were created under different laws. Regulation is authorized by the Underground Storage Tank Act of 1989, cleanup of leaking tanks is authorized by the Model Toxics Control Act.

## Independent Cleanup Activity

(September 1989 - July 1992)

Reported Sites	2,414
Cleanups Initiated	2,200
Cleanups Completed	483

## Other Independent Sites

Total cleanup reports received (Interim and final)	114
Sites where cleanup reported complete	33

# Puget Sound: Ecology Urban Bay Action Teams

Over the past hundred years, the fragile bays and inlets of Puget Sound have endured the commerce of millions of people. Today, nearly two-thirds of Washington's population lives around Puget Sound and the seven sites served by the Department of Ecology's Urban Bay Action Teams.

Urban Bay Action Teams draw support from the people who live and work near the bays to stop pollution at its source and clean up land-based contamination that can leach into the water. This work generally precedes efforts to clean up underwater sediments in the bays themselves.

Each Urban Bay Coordinator works with an action team made up of representatives from governments, tribes, industries and citizen groups located around a particular bay. The emphasis at most of the bays is on controlling sources of contamination through coordination, cooperation and education.

The work is organized to meet the needs of the bay, not the bureaucracy. Ecology's goal is to have federal, state and local agencies work together to bring active pollution sources into compliance with the law, control other sources of contamination, and avoid duplicated efforts. Between them they have a variety of enforcement tools available to get the job done.

## Urban Bay Action Teams At Work:

### Commencement Bay, Tacoma

Most pollution sources will be controlled within two years, and source control is scheduled for completion in 1997. Four consecutive cleanups were nearing completion during FY 1992, including:

■ **Elf Atochem 2901 Taylor Way:** This chemical plant, whose tanks and lines once leaked arsenic-laden water into the bay, is now one of the most environmentally advanced facilities on the Tacoma waterfront. The company removed 1,300 tons of arsenic sludge from the site and has constructed a state-of-the-art ground water treatment system.

■ **D Street Petroleum:** A ground water extraction and treatment system is removing petroleum products found under this site while a vapor extraction system is removing petroleum products from the soil and enhancing its decomposition.

### Bellingham Bay

Ecology's Urban Bay Coordinator helped to organize fast teamwork between government and industry when an abandoned landfill leaked medical waste and other contaminants into the bay. The site was quickly isolated from human traffic. Samples have been taken to determine which contaminants are present.

**Elliott Bay, Seattle**  
Accomplishments by the Elliott Bay Urban Bay Action Team include:

■ **Harbor Island:** Toxic contamination from everyday waste disposal practices at facilities on the island has been eliminated and Ecology is monitoring continued compliance with environmental standards. For example, about 2,700 gallons of solvent-contaminated wastewater that once ran into the Duwamish Waterway each month has been eliminated. Testing indicates a significant reduction in the amount of toxic contaminants being discharged.

■ **South 96th Street Drainage:** Half of the facilities in this area have eliminated discharges of hazardous substances into a 3/4-mile stretch of storm-water ditches and Hamn Creek. No specific measurement of environmental improvement is available — but a few beavers have returned to this section of the Duwamish River.

**Lake Union, Seattle**  
Working after hours and using a kayak, an Urban Bay Coordinator discovered improper discharge of hazardous substances. The violator was issued a \$43,500 penalty and ordered to stop the discharge. The penalty has been appealed.

*Urban Bay Action Team member Joanne Polayes-Wien collects a sample from a water discharge outlet on the Lake Washington Ship Canal. Ecology has action teams at Bellingham Bay, Port Gardner Bay (Everett), Elliott Bay (Seattle), Lake Union (Seattle), Sinclair-Dyes Inlets (Bremerton), Commencement Bay (Tacoma) and Budd Inlet (Olympia).*



# Technical and Administrative Issues

New legal, technical and financial issues are raised by hazardous waste site cleanups as the Toxics Cleanup Program matures. Ecology works with advisory groups to develop solutions that protect human health and the environment while minimizing the burden on businesses and individuals.

## Lender Liability

The impact of hazardous waste sites on the buying and selling of property is one of the most urgent issues facing the program. Lenders want to clearly understand how much involvement they can have with a site without becoming liable for cleanup. Property purchasers want to know how carefully they must search for hazardous substances on a property to be qualified as an "innocent purchaser" if contamination is found later. Insurance companies want guidelines on how closely they can work with a client who has hazardous waste liability, without becoming liable themselves.

In May, Ecology established a work group to address these issues. A collection of interests are represented, including lenders, real estate agents, environmental groups, environmental consultants, local governments (including port districts), large and small businesses, and insurance companies.

The work group will help Ecology explore two issues:

■ How can lenders and insurance companies meet their responsibilities at a contaminated site without becoming owner/operators and therefore potentially liable for cleanup?

■ What is the definition of "appropriate inquiry"? This is the standard used in the Model Toxics Control Act to determine if a property buyer made an adequate effort to detect contamination on a piece of property before completing the purchase.

## Residential Landowners' Liability

In a related action, Ecology has provided some relief to residential property owners impacted by hazardous waste cleanups. Residential landowners are potentially liable under the Act if contamination is found on their property. However, as part of its Enforcement Policy finalized in April, Ecology generally will not pursue a residential landowner for cleanup costs if the landowner did not cause the problem and cooperates with cleanup efforts.

## Rule Development

The Model Toxics Control Act requires protection of both human health and the environment. Ecology is working with the Ecological Standards Subcommittee of the Science Advisory Board to develop standards to ensure that cleanups are protective not only of human health, but also of ecological resources such as fish and wildlife. Soil samples from selected cleanup sites are being used to test the draft standards.

## Technical/ Administrative Improvements

Refinements in the program's operating policies improve its efficiency and effectiveness. In most cases, these policies have a substantial impact on how sites are handled and what is expected of potentially liable persons.

## Priority Setting for Sites

This policy outlines the steps and criteria the program uses to determine which sites will be worked on in any given year. Ranking on the Hazardous Sites List according to the Washington Ranking Method is the primary factor, but other factors apply. A site's need for interim action, a site's actual impacts on human health and the environment, and available cleanup staff and funding can also affect the program's decisions on which sites should be cleaned up first.

## Independent Remedial Actions

This policy helps define the type and extent of assistance program staff can provide on sites being cleaned up without formal Ecology oversight. The program is developing guidance on the proper format and content of independent cleanup reports submitted to Ecology. This will allow the program to more efficiently review the reports and keep better track of independent cleanup sites.

## Removal of Sites from the Hazardous Sites List

This clarifies under what conditions a site can be removed from Ecology's list of hazardous sites:

- All remedial actions are completed and cleanup standards are achieved
- Confirmational monitoring is ongoing (at sites, such as landfills, where hazardous substances must be contained rather than removed)
- All remedial actions are complete and confirmational monitoring is underway
- Further investigation has revealed no threat to human health or the environment

## Statistical Guidance for Ecology Site Managers

This provides consistent, efficient methods for analyzing data from hazardous waste sites.

This guidance makes it easier to determine, with adequate certainty, that a site meets cleanup standards.

# Public Participation

The Model Toxics Control Act requires public comment periods at a minimum of three phases of the cleanup process to keep concerned citizens in the decision loop. Ecology public involvement specialists inform and are advocates for the people who are concerned about or affected by a site cleanup.

Public involvement staff face two challenges: To understand the needs of the public at or near a contaminated site, and to draft and carry out public participation plans that ensure those needs are met.

Ecology's efforts to meet citizen needs are best described by examples of two of the more difficult sites:

■ **Yakima Railroad Area:** Contamination in ground water required emergency action to provide affected residents with a source of clean water. The first public meeting in September 1991 was crucial in educating the public about the drinking water hazard.

Ecology knew many of the residents were Hispanic, so bilingual fact sheets and meeting advertisements were used to announce the meeting and explain the problem. A bilingual staff member worked as a translator at the meeting.

Now, about 450 households are using bottled water supplied by the potentially liable persons at the site. Ecology is working with the potentially liable persons to reach more of the affected residents.

■ **Norseland Site:** During fiscal year 1992, outreach staff hosted both on- and off-site meetings to inform the community at the Norseland site, a mobile home park built at least partially on an old landfill. Since Ecology started involvement in November 1991, public involvement staff have kept the communication links open between the residents and several government agencies through meetings, fact sheets and interviews with the residents.

## Public Participation Plans

A public participation plan is the heart of Ecology's public involvement efforts at a site. It provides contacts and information on a contaminated site and explains when and how the public can access site information and comment on cleanup progress. Although requirements in the law are part of every plan, specifics on how the plan will be carried out are tailored to each site.

Drafting a public participation plan and educating potentially liable persons about public involvement can be a challenging task. Preparation for a plan includes interviews with local governments, tribes, individuals and public organizations. The plans are revised as site conditions change.

## Public Involvement in the Cleanup Process

Public involvement in the cleanup of a hazardous waste site is encouraged throughout the cleanup process and formal public notice with at least 30 days opportunity to comment is required at a minimum of three phases:

- Upon completion of a Remedial Investigation/Feasibility Study
- During planning for an Interim Cleanup Action (Interim Cleanups not conducted at all sites)
- On the draft Cleanup Action Plan
- Before a site is removed from the Hazardous Sites List

These requirements are linked to Agreed Orders, Enforcement Orders and Consent Decrees used to legally bind potentially liable persons to particular actions at a cleanup site. Ecology must meet the same requirements when conducting a cleanup at state expense.

Ecology frequently conducts public meetings or formal hearings during comment periods. A meeting will also be held if requested by ten or more persons during a public comment period. Public hearings are required for consent decrees.

## Citizen Advisory Committees

Citizen Advisory Committees in each of the agency's regional offices act as sounding boards for citizen and community concerns and give Ecology staff a "reality check" on important issues.

---

## Citizen Advisory Committee Members

**Central Region**  
Wally Budke  
Bruce Howard  
Harold Jones  
Kurt Layman  
Laura Miracheck  
Ken Neher  
Cindy O'Halloran  
Jan Secunda  
Daniel Snipes  
Herman Thoernissen  
Don Weins  
Dean Wells

**Eastern Region**  
Lloyd Bourne  
Ralph Carter  
Marty Gilchrist  
Dr. Robert Hager  
David Hoppens  
Dr. Eric Kincanon  
Sandra Morton  
Sally Simmons  
Barbara Skyles  
Micki Tuttle  
Frank Yuse

**Southwest Region**  
Reuben Baybars  
Virginia Clark  
Bruce Lachney  
Jack Micheau  
Mark Miller  
Jack Roberts  
Tom Waltz  
Diedre Young

**Northwest Region**  
Beth Elpern Burrows  
Jeff Daub  
Jean Edelhertz  
Michael Jeffers  
Kim Klinke  
Mike Miller  
Peg Monaghan  
Ron Nohrenberg  
Anne Robison  
Lisa Stone  
Jim Woessner

---

# Prevention

Ensuring a clean environment for the future means helping business and individuals prevent contamination, not just cleaning up existing problems. Model Toxics Control Act funding is used by the departments of Ecology and Agriculture to stop potential contamination before damage is done and expensive cleanup required.

## Department of Ecology: Solid and Hazardous Waste Program

The Solid and Hazardous Waste Program provides education and technical assistance for those who generate hazardous waste to help them comply with waste regulations. The program also monitors compliance and enforces the regulations which prevent threats to human health and the environment from poorly managed wastes.

In fiscal year 1992, \$4.6 million from the State Toxics Control Account were spent to fund 90 full-time employees and the following accomplishments:

### Education and Technical Assistance

During 1992, the program provided technical assistance, guidance, and education to the regulated community through workshops, its newsletter *Shoptalk* and other materials.

It also responded to more than 7,500 information requests on the Hazardous Waste Hotline.

In addition, Solid and Hazardous Waste developed a pilot program with governments, trade organizations and other programs to target the automotive repair industry. The campaign started in fiscal year 1993 with more than 1,300 educational visits to shops statewide.

Education and technical assistance is a strong component of all inspections, but is especially important for businesses new to the regulatory system. "New Notifier" visits comprised 339 of the total inspections conducted.

### Compliance Activities

■ The program performed inspections at 634 facilities (85 of which were federally required), reviewed seven hazardous waste facility permits, and issued 158 compliance letters, 18 enforcement orders, 18 penalties and one permit.

■ A survey of 125 pesticide applicators helped Ecology monitor their compliance with dangerous waste regulations and provided them with information on reduction and proper disposal of wastes.

■ Compliance monitoring activities are being aided by a significant improvement in the computer data management system. Savings of up to \$50,000 per year are anticipated.

### Partnerships With Local Government

The program's Solid Waste and Moderate Risk Waste activities help local governments manage hazardous wastes generated in small quantities by businesses and households, interpret standards for landfills, and develop local solid waste management plans.

Ecology assistance helped local governments:

- Establish 12 permanent or mobile moderate risk waste collection systems
- Host 50 household waste collection events
- Implement a certification program for landfill and incinerator operators

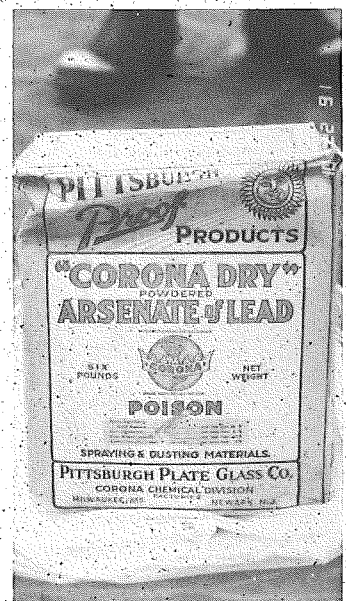
Solid and Hazardous Waste also guided seven jurisdictions which reviewed and amended their moderate risk waste plans and helped 130 local governments develop zoning standards for waste facilities.

## Department of Ecology: Waste Reduction, Recycling and Litter Control Program

Modest growth and continued progress marked the Waste Reduction, Recycling and Litter Control Program in fiscal year 1992. Adding to its accomplishments, the Toxics Reduction Section increased technical assistance to business and created the "Toxics Reduction Technical Assistance Plan", which gives direction for providing effective technical assistance and is being used as a model planning document in other parts of the agency.

Funding for the program in FY 1992 totalled \$1,019,566 from the State Toxics Control Account and \$34,131 from the Local Toxics Control Account.

*Waste pesticides like this 75-year-old bag of lead arsenate are removed from farms and properly disposed of by the Department of Agriculture waste pesticide collection program.*





### Technical Assistance: Making It Easier To Reduce And Recycle

A formal report on regulatory impediments to waste reduction and pollution prevention will soon be issued by the program. The goal is to help businesses more easily comply with the Hazardous Waste Reduction Act, which requires large users/generators of waste to prepare pollution prevention plans.

During FY 1992, program staff conducted more than 250 on-site visits at hazardous waste generating businesses to help identify waste reduction opportunities and complete Pollution Prevention Plans.

The program promoted waste reduction and recycling on the local level by conducting two-day technical assistance training for approximately 50 local government staff, and by

promoting local Pollution Prevention Networks in Seattle, Spokane and Kelso. Participants at these open, informal meetings included government, businesses, environmental groups, and citizens.

### Education and Encouragement

The first series of "Governor's Awards for Outstanding Achievement in Pollution Prevention" were given to projects or campaigns mounted by governments and businesses based on recommendations from a panel of pollution prevention experts.

The program also presented the third-annual Inland Northwest Waste Information Expo in Spokane. More than 300 people perused products and services displayed by 50 businesses, consulting firms and governments.

### Department of Agriculture: Waste Pesticide Program

The Department of Agriculture's Waste Pesticide Program emphasizes waste reduction to prevent accumulation of unusable pesticides on farms and ranches and collection of what's already in storage.

Since the program began, more than 135 tons of unusable pesticides have been collected and disposed of from 832 participants at 15 collection events — that's more than three times the initial 1987 estimate of 42 tons being stored on farms statewide.

In fiscal year 1992, collections were held in Okanogan, Wenatchee, Asotin, Chehalis, and Mount Vernon. More than 44 tons of unusable pesticides were collected from 369 participants at a total contractor cost of \$472,839.

On-farm visits to help solve packaging, transport, and storage problems have increased dramatically, and the department has expanded its pesticide collection program to focus on a regional level rather than specific counties.

Collections are still needed in several key growing areas.

Meanwhile, prevention activities are becoming a larger part of the program. Work has begun on a 20-minute video covering tips on minimizing pesticide waste. It will emphasize the user's stewardship of pesticides from point of purchase to proper disposal. The video is expected to be complete by June, 1993, for primary distribution through the Washington State University Cooperative Extension program.

A slide show on minimizing waste has already been presented to many pesticide applicators in the state, and a brochure on container disposal is near completion. The brochure, a joint effort between the departments of Agriculture and Ecology, will appear in both English and Spanish.

The program is also purchasing equipment to encourage recycling of empty pesticide containers to boost a project initiated by the Columbia Basin Fieldman's Association. Based on this project's success and a similar program in Oregon, the Washington Pest Consultant's Association is trying to make recycling available statewide.

*Waste pesticides are sorted at a Department of Agriculture collection site in Okanogan County.*



# Protecting Washington's Water Resource

Three programs using Model Toxics Control Act funds or backed by the Act's authority are dedicated to protect Washington's lakes, streams and marine treasures. Much of the work focuses on Puget Sound and the Columbia River.

## Department of Natural Resources

State Toxics Control Account funding of \$382,000 allowed the Department of Natural Resources (DNR) to address concerns about contamination of state-owned intertidal and submerged lands (known as "aquatic lands"). DNR conducted contamination surveys on aquatic lands, advised the Department of Ecology on issues involving these lands, and worked with potentially liable persons to investigate and clean up hazardous waste sites.

## Survey of Puget Sound

DNR manages approximately two million acres of state-owned aquatic lands. During FY 1992, 20 locations in southern Puget Sound were sampled and analyzed for the chemicals of concern listed in Department of Ecology sediment management standards, bringing the total number of sites surveyed to 51. In addition, DNR has reviewed Ecology hazardous waste site lists to identify sites that may impact state lands.

## Work With Potentially Liable Persons

The two agencies will use the information to decide which sites need action first. Several environmental assessments of state-owned aquatic lands have been conducted or are planned by potentially liable persons as requested by DNR.

The Departments of Ecology and Natural Resources are also finalizing a memorandum of agreement that outlines how the state will use its authority as both regulator and land manager to achieve the goals of the Model Toxics Control Act.

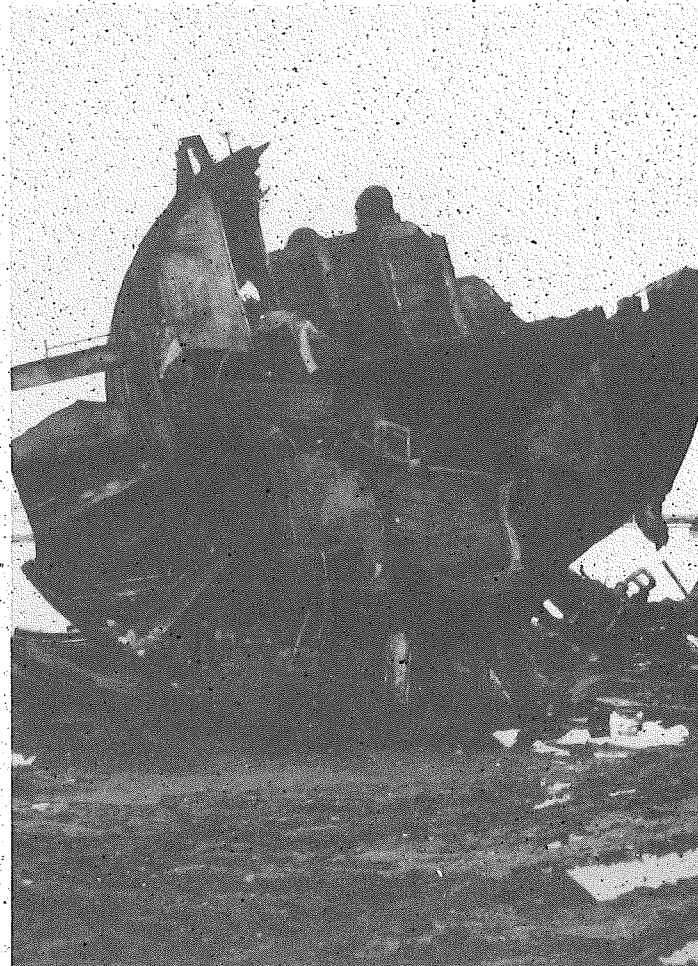
## State Liability

The state has been named by the U.S. Environmental Protection Agency as a "potentially responsible party" at the Eagle Harbor, Harbor Island, ASARCO smelter, and Commencement Bay Superfund sites. The Department of Natural Resources represents the state in its capacity as potentially responsible party and natural resource trustee. DNR is working with EPA and Ecology to deal with sediment contamination and the state's potential liability for cleanup at these sites.

Department of Natural Resources Sediment Management Section staff have provided aquatic land managers with technical advice to ensure that property acquisitions do not increase the state's liability for contaminated sediments.

## Advisory Committees

DNR served as a member of several committees advising Ecology on issues related to the contamination of state-owned aquatic lands. Staff provided advice and technical input on contaminated sediment cleanup standards, waste water discharges from boat yards, and storm water discharges from municipalities and industries. They also served on all of Ecology's Urban Bay Action Teams and used DNR authority at several sites to help control contamination sources and encourage compliance with water quality laws.



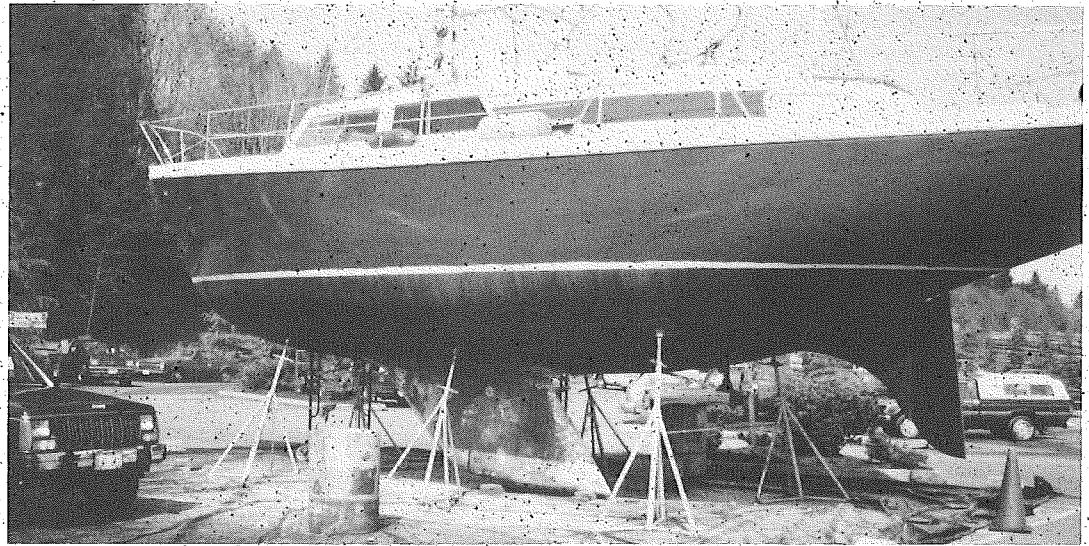
*A section of an old submarine that sank near the Port of Everett South Terminal leaked oil and other fluids into the environment. The Port removed the hulk under Ecology and DNR direction.*

## Lower Columbia River Bi-State Water Quality Program

The Bi-State Program is a cooperative effort between the states of Washington and Oregon, with additional support from public ports in both states and the Northwest Pulp and Paper Association. Water quality in a 146-mile stretch of the lower Columbia River from Bonneville Dam to the Pacific Ocean will be studied and characterized during this four-year project.

Last June, a draft report on water quality sampling in the lower Columbia River indicated concentrations of some contaminants and some potential "hot-spot" areas in the river. The sampling was part of a "reconnaissance survey" that included samples of water, sediments, fish tissue, and benthic organisms (organisms living in the top layer of sediments). Samples were collected over a wide geographic area and tested for a broad range of contaminants.

The results will be used in the next phase of the study, which will focus on potential problems highlighted by the reconnaissance survey and provide information needed to address problems.



### Project May Be Expanded

In early 1992, the governors of Washington and Oregon chose not to nominate the lower Columbia River to the National Estuary Program (NEP), a federal program aimed at studying water quality in estuaries and developing a management plan to address problems. The governors made the same decision in 1989, opting to maintain regional control over the project.

However, the governors committed to changes that will strengthen the Bi-State Program. Among the proposed changes are expanded technical studies that include wildlife and habitat issues, and preparation of a management plan to address problems identified by studies. The agencies are currently working to identify sources of funding for this expanded program.

### Office of Marine Safety

#### Vessel Oil Spill Contingency Plans

The newest program supported by Model Toxics funds is the Office of Marine Safety (OMS), established by the legislature in May, 1991. It was created shortly after the Exxon Valdez catastrophe out of concern that an oil spill from a vessel could also devastate part of Washington's irreplaceable marine resources.

The primary goal of the Office is to prevent vessel oil spills in Washington waters by promoting marine safety. It is charged with adopting administrative rules for the submission and review of vessel oil spill prevention and contingency plans and for inspecting vessels to ensure compliance with plan contents and other legal requirements.

*Waste management practices are improving at marinas where wastes from boat repair work threatened fragile aquatic lands.*

Model Toxics Control Act funds are used toward:

- Review and approval of approximately 30 tank vessel oil spill contingency plans
- Review and approval of oil spill response contractors
- Plan compliance inspections
- Oversight and evaluation of exercises to test plans
- Development and refinement of policies and procedures that maintain the effectiveness of the program
- Extensive coordination with the spill planning and response efforts of other state agencies, adjacent states, and the federal government

# Department of Health

The Washington State Department of Health and Department of Ecology share common concerns about the disposal of hazardous substances. The Department of Health performs specific activities concerning how hazardous substances in the environment affect the people of Washington. Those activities include:

- Public health assessments and investigations (33 in FY 1992)
- Health consultations concerning specific hazardous substances (440 in FY 1992)
- Health surveillance and registries
- Applied research in support of health assessments
- Information services (eight fact sheets on hazardous substances produced in FY 1992)
- Education and training on hazardous substances
- Drinking water monitoring at potential or identified hazardous waste sites
- Testing of drinking water supplies for organic chemicals

The Department of Health received \$1,649,000 of State Toxics Control Account funding to support these services during FY 1992.

*Air samples are taken at the home of a Norseland Site resident.*

## Drinking Water Activities

In FY 1992, an estimated 40,000 people were affected at sites where the Department of Health detected contaminants in drinking water. The monitoring staff collected 193 samples at 25 sites. Contaminants were present at a sufficient level to warrant Department of Health response to eliminate or limit human exposure at nine of those sites.

### Site Profiles

- **Weiler-Martin Water System, Grant County** — Ethylene dibromide (EDB) found in well water. Remedial actions were taken and exposure eliminated.
- **Trailer Village Mobile Home Park, Lewis County**: Perchloroethylene (PCE) discovered in the water supply affecting this system and



approximately 150 privately owned wells. Negotiations are underway for the mobile home park to secure water from another source.

## Public Health Assessment Activities

The Office of Toxic Substance's public health assessment staff handles health assessments and investigations at hazardous waste sites, while providing health consultations to individuals regarding hazardous substances and health effects. The Department of Health has also released three health advisories for sites in the state and is conducting two health studies in areas where citizens have expressed concern about environmental exposures.

### Site Profiles

- **Jackson Park Housing Complex, Kitsap County**: The Department of Health initiated a health investigation of this site owned by the U.S. Navy because of concern about materials used in explosives seeping into Puget Sound and threatening shellfish contamination. The Department also was concerned about the large amount of metal fragments exposed on the beach and the potential for children to injure themselves on those fragments. The Navy is responding to actions initiated by state regulators.

■ **Norseland Site, Kitsap County**: State and local agencies received citizens' complaints from a mobile home park built partially on an old landfill. Residents were concerned about odors and toxic chemicals in soil and air affecting their health. The Department of Health evaluated the results of a preliminary environmental investigation for health impacts. Staff from several agencies met with the community and continue to provide information and technical assistance during this early stage of investigation.

■ **Yakima Railroad Area**: Perchloroethylene (PCE) contamination was found by Ecology in a number of private wells in southeast Yakima. Ecology, the Department of Health and the Yakima Health District met with the community and explained the health and environmental effects of the contamination. The agencies are working to extend safe potable water into this area.

## Other Activities

During the past year, the Department of Health has expanded its ability to evaluate exposures to airborne contaminants with the assistance of Ecology's Industrial Section. The Department is working on a health study at Port Angeles and Northport/Kettle Falls which should be complete next year.

# Hazardous Waste Emergencies

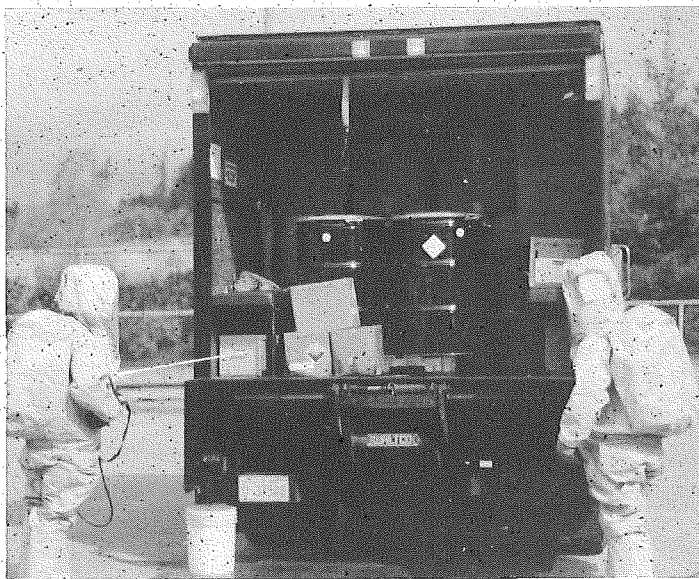
## Department of Community Development

### Hazardous Materials Training Program

The Hazardous Materials Training Program provides training for those who make first contact with hazardous waste emergencies — usually men and women from local fire departments. The program enhances preparedness planning and response skills needed to safely deal with hazardous waste incidents and is vital to minimizing loss of life and property for all citizens involved.

During fiscal year 1992, classes were taught to more than 9,500 firefighters throughout the state. This instruction provided the program nearly 73,000 hours of student contact time.

*Firefighters practice spill procedures at a hazardous materials technician training course in Bellevue. This drill required them to identify the materials, take care of spilled product and safely dispose of it.*



### More Than Just Required Training

The Washington Industrial Safety and Health Act standards place strict training requirements on emergency responders. Initial training and retraining are mandated for firefighters who respond to hazardous materials incidents.

The State Toxics Control Account is the most significant source of funding for hazardous materials training in the state. Other federal or local fund sources have either been reduced or eliminated. Without continued financial support, the program would be unable to meet mandated training requirements for the state's 25,000 firefighters.

But more than just basic training is needed. Transportation of hazardous chemicals and other environmental conditions that create potential hazards are increasing in Washington, and firefighters must have special-

ized training to safely handle these life-threatening incidents.

The Hazardous Materials Training Program provides courses to prepare firefighters for specific situations involving pesticides, flammable liquids, combustible metals, and drug labs. Other courses provide training on tactics and techniques needed to effectively handle all types of hazardous waste emergencies.

## Department of Ecology

### Emergency Spill Response

The State Toxics Account and the Emergency Spills Program have played a crucial role in protecting the state's resources from damage caused by hazardous substance spills. A rapid and effective response to spill emergencies can eliminate the need for long-term cleanups that, more often than not, are time-consuming and expensive.

Local fire departments with hazardous materials expertise often seek technical assistance from Ecology on environmental issues, while many rural governments depend on Ecology to provide all hazardous spills response.

The State Toxics Account funds 17 full-time employees for spill planning and response activities at an annual cost of \$1,795,845, including cleanup contractor costs:

During fiscal year 1992, Ecology Spill Response received 2,638 hazardous substance emergency calls and conducted field responses in 27 percent of those cases. In addition, the program contracted for services to clean up 248 spills requiring emergency response.

### Preparation and Planning

The key to successful spill response is advance planning. During FY 1992, the Ecology spill response program:

- Adopted the Facility Contingency Plan and Contractor Standards rule for 62 major state bulk oil handling facilities
- Established and implemented a unified Incident Command System with the U. S. Coast Guard
- Completed and distributed the Statewide Master Oil and Hazardous Substance Contingency Plan, Volume 1
- Began inspecting response contractors as part of a federally required approval process
- Developed the Facility and Contractor Tracking System (FACTS), a database designed to track facility contingency plans, inspections, drills, equipment and cleanup contractor capability
- Completed a manual for review of Facility Oil Spill Contingency Plans

# Model Toxics Control Act Financial Analysis

Revenue for the State and Local Toxics Control Accounts is raised through the Hazardous Substance Tax. The State Toxics Account also receives oversight costs recovered from liable parties at cleanup sites. Projected revenue from the tax has not risen as rapidly as projected. Cost recovery revenues continue to increase as Ecology's Toxics Cleanup Program matures.

## Department of Revenue Hazardous Substance Tax

The Department of Revenue oversees collection of the Hazardous Substance Tax, which is imposed on the first in-state possessor of hazardous substances at a rate of .7 percent, or \$7 per \$1,000 of wholesale value. Since its inception, revenue from the tax has been a challenge to estimate. In 1990, actual revenues exceeded the projected amount. In fiscal year 1991, funding stabilized thanks to programs to educate consumers and promote voluntary compliance with the tax.

In fiscal year 1992, Hazardous Substance Tax collections amounted to \$36,519,561, or 17 percent less than the forecasted amount. Revenue staff are investigating possible causes of the shortfall.

## Department of Ecology

### Recovery of Costs From Liable Parties

Under the Act, state oversight costs are recovered from liable persons whenever feasible. This valuable revenue source will be relied upon to generate a larger portion of support for cleanup-oriented programs in future years.

Cost recovery collection was boosted in 1992 by a \$575,000 settlement with Great Lakes Chemical Corporation for four sites in western Washington. As the Toxics Cleanup Program moves more sites through formal investigation and cleanup, more costs can be billed.

In FY 1992, staff explored methods of recovering more of the

state's legitimate costs for overseeing a cleanup site:

- A pre-payment agreement allows a potentially liable person to provide advance payment for oversight work that otherwise could not be scheduled given current staffing levels. One such agreement is in effect and two more are being negotiated.

- A "program overhead" procedure and rate would include program management, administration and policy development costs among those that can be recovered from potentially liable parties. This is scheduled for implementation in fiscal year 1994.

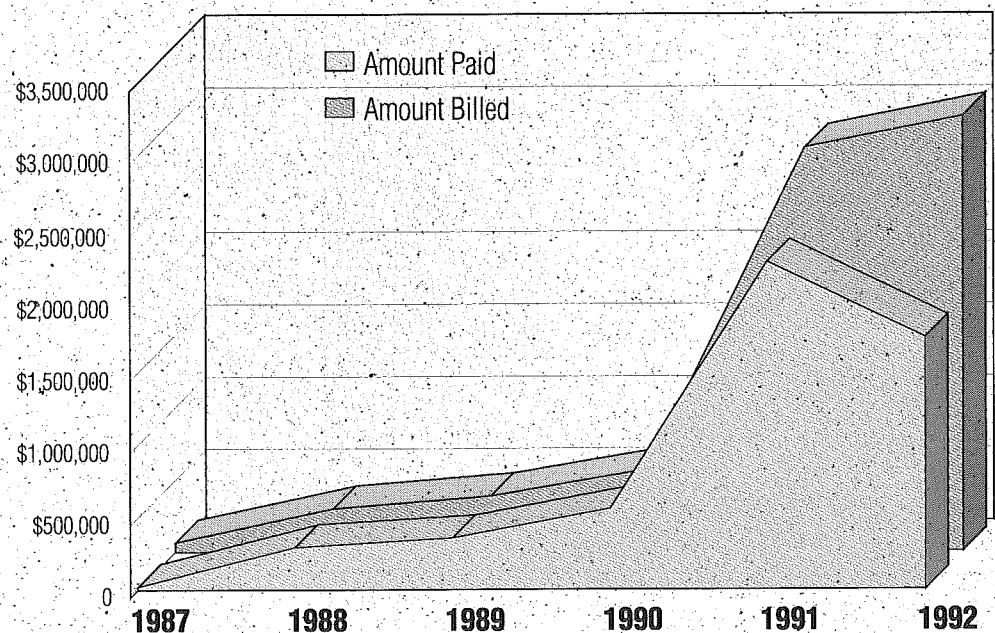
- A method for recovering the cost of staff holiday, vacation and sick leave over the course of a project is also under consideration.

## How the Money is Spent

The money is dispersed into two accounts. The State Toxics Control Account funds a variety of solid, hazardous, and toxic waste cleanup and prevention activities. Grants from the Local Toxics Control Account help local governments with their hazardous waste cleanup, planning, and prevention projects. Local Toxics Control Account activities are described on page 22.

Legislative appropriations of State and Local Toxics Control Account funds are based on expected balances in the accounts as well as revenue estimates. The legislative process determines which agencies and programs have priority for funds.

Cost Recovery Revenue by year costs were accrued



## Statement of Revenue and Expenditures

Toxics Control Account Revenue	Local	State
Tax Collection	\$18,916,504	\$16,606,535
Cost Recovery		\$2,911,054
Penalties		\$304,114
Hanford Consent Decree		\$2,617,547
Miscellaneous	(\$2,008,868)	\$250,519
<b>Total Revenue:</b>	<b>\$16,907,636</b>	<b>\$22,689,769</b>

### Toxics Control Account Expenses:

Agency Administration	\$355,505	\$6,052,052
Central Program/Spill Response		\$2,130,072
Environmental Investigations & Lab Services		\$544,996
Water Quality		\$390,655
Nuclear & Mixed Waste		\$2,346,272
Solid & Hazardous Waste Management	\$8,462,093	\$4,591,515
Toxics Cleanup Program	\$11,474,771	\$9,043,843
Waste Reduction, Recycling & Litter Control	\$2,712,132	\$908,113
Waste Management Grants Administration	\$894,451	\$0
<b>Total Department of Ecology:</b>	<b>\$23,898,952</b>	<b>\$26,007,518</b>

### Other Agencies:

Department of Agriculture		\$584,551
Department of Community Development		\$179,125
Department of Health		\$1,404,894
Department of Revenue		\$37,617
Department of Natural Resources		\$243,548
Office of Marine Safety		\$186,000
<b>Total Expenditures:</b>	<b>\$23,898,952</b>	<b>\$28,643,253</b>

### Details of Toxics Cleanup Program Expenditures

#### Oversight of Potentially Liable Person

Conducted Cleanups:	Local	State
Interim Action	\$253,500	\$349,965
Pre-Remedial/Site Hazard Assessments		\$387,390
Remedial Investigation/Feasibility Studies		\$1,542,508
Cleanup Actions	\$11,221,271	\$772,782
Permits, Natural Resource Damage Assessments, Operations & Maintenance		\$11,026
<b>Total Potentially Liable Person Cleanups:</b>	<b>\$11,474,771</b>	<b>\$3,063,671</b>

#### Ecology Conducted Activities:

Technical Assistance	\$1,630,381
Pre-Remedial/Site Hazard Assessments	\$520,266
Remedial Investigation/Feasibility Studies	\$816,858
Cleanup Actions	\$14,363
Urban Bay Action Team Activities (funded by STCA)	\$95,079
Ecology Match for Federal Grants	\$31,800
State Leaking Underground Storage Tank Activities	\$793,066
<b>Total Ecology Conducted Cleanups:</b>	<b>\$3,901,813</b>

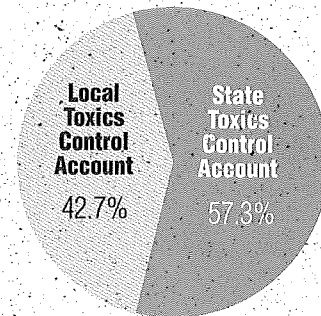
#### General Support and Management:

Administrative Support	\$441,779
Public Information	\$186,643
Program Development	\$616,853
Program Support	\$444,872
Management	\$717,657
Regional Directors	\$36,307
Training	\$363,390
<b>Total General Support and Management:</b>	<b>\$2,807,501</b>

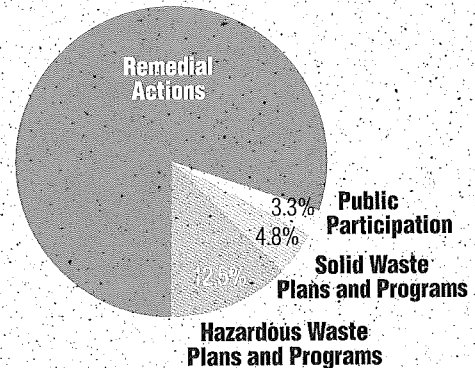
#### Total Toxics Cleanup

<b>Program Expenditures:</b>	<b>\$11,474,771</b>	<b>\$9,772,985</b>
------------------------------	---------------------	--------------------

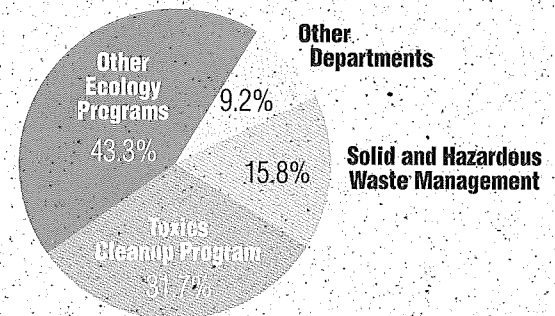
## Toxics Control Revenue



## Local Toxics Control Account Grants Awarded



## State Toxics Control Account Expenditures



# Local Government Grants Supporting Partnerships

By providing funds for waste management grants, the Local Toxics Control Account helps Ecology and local governments work together to clean up contaminated sites and prevent future problems from the disposal of solid and hazardous waste. During fiscal year 1992 Ecology awarded more than \$22.6 million in grants from the Local Toxics Control Account. Local governments matched grant funds to pay for more than \$41.7 million in waste management projects. A total of 57 projects were completed and the grants closed.

## Coordination Yields Results

In 1992, Ecology and local governments began the first cycle of grants under the new Coordinated Prevention Grants program. By the end of FY 1992, Ecology had awarded \$8 million in grants to 35 of the state's 39 counties through the non-competitive, allocation-based program.

The coordinated approach encourages local governments to look at their waste management needs on an area-wide basis rather than narrowly focusing on the needs within their own boundaries. This often means county government, the health district, and cities within the county must agree on their most critical waste management problems and how to use the available grant funds.

In Island County, for example, the county, the City of Oak Harbor and the Island County Health Department worked out interlocking grant agreements for funding to:

- Close the Coupeville Landfill
- Enforce solid waste rules
- Begin a recycling collection program for multifamily housing in Oak Harbor
- Conduct a county-wide education and collection program for household hazardous wastes

■ Enhance the existing waste reduction and recycling program in the county, including new recycling collection stations for Coupeville and Langley.

This set of agreements is similar to many signed during this first cycle, emphasizing education, enforcement, and direct services to implement waste management plans. The Coordinated Prevention Grants program is designed to strengthen these interconnected partnerships among local governmental bodies and Ecology, improving working relationships and protecting the environment.

## Remedial Action Grants: Waste and Water Quality

Site cleanups accounted for \$11,474,771 of the grants signed in FY 1992, with over \$10 million going for the cleanup of the Tacoma Landfill and Spokane's Northside Landfill. Aided by the grants, Tacoma has capped its landfill, installed gas control measures, and begun treating the ground water. Spokane's project involves investigating and extracting gas, relocating a sewer line in the area, and treating the ground water. Both landfill cleanup projects illustrate the critical relationship between waste management and water quality.

This year Ecology adapted its grant program to respond to another instance in which water

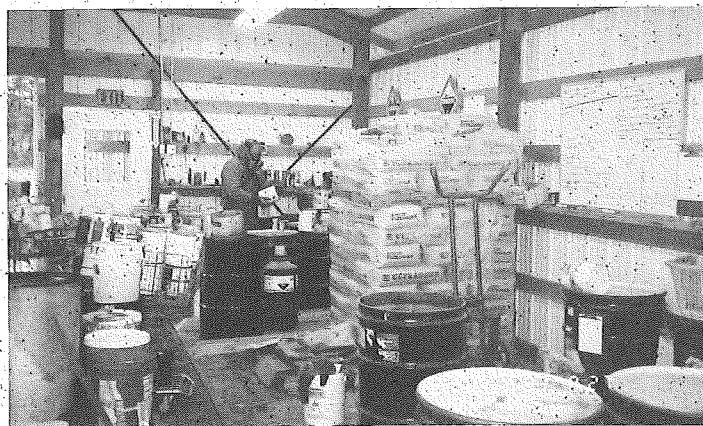
quality and waste management intersect. An emergency rule amendment was adopted allowing local governments to use grants for drinking water systems in areas where drinking water wells are contaminated by hazardous waste sites. These grants are available even when the local government is not a potentially liable person at the hazardous waste site. Drinking water systems will be further addressed as part of the planned revision of the remedial action grants rule.

## Public Participation Grants

Public participation grants are offered to groups of private citizens and not-for-profit organizations to improve the public's ability to participate in the cleanup process and to increase the awareness of waste reduction, disposal, and recycling. During 1992, two-thirds of the projects funded were related directly to hazardous substance release sites, including the Everett Smelter site, the cleanup of naval facilities on the Kitsap Peninsula, and the Colbert Landfill cleanup near Spokane.

These are 100-percent grants; half of the grant comes from the Local Toxics Control Account, half from the State Toxics Control Account.

*A technician sorts waste materials delivered to the Island County household hazardous waste facility.*





# Grants Status Report

LTCA Grants Signed In Fiscal 92	Recipient	Grant Number	Project Cost	LTCA Dollars	Date Signed
<b>HHW Collection Days</b>	Lewis County	TAX91230	90,000	45,000	7/28/91
	Vancouver, City of	G9200083	60,000	30,000	11/7/91
	TOTAL		150,000	75,000	
<b>Groundwater Monitoring Wells</b>	Klickitat County	TAX91200	60,586	30,293	7/20/91
	TOTAL		60,586	30,293	
<b>Hazardous Waste Plan Implementation</b>	Walla Walla County	TAX91205	75,100	56,325	7/3/91
	Island County Solid Waste	TAX91217	146,400	109,800	7/5/91
	Southwest Wa. Health District	TAX91219	311,351	233,513	7/5/91
	Tacoma-Pierce Co. Health Department	TAX91218	141,155	105,866	7/20/91
	Yakima County	G9200050	158,920	103,242	9/11/91
	Stevens County Public Works	G9200070	70,892	41,895	10/8/91
	Mason County	G9200080	63,500	44,625	11/2/91
	Lewis County Public Works	G9200116	116,163	87,122	12/1/91
	San Juan County	G9200082	59,000	33,860	12/10/91
	Clallam County	G9200113	78,704	51,528	12/16/91
	Cowlitz County	G9200123	155,408	93,384	12/16/91
	Jefferson County Public Works	G9200117	84,358	51,997	12/16/91
	Tacoma, City of	G9200137	258,005	181,398	12/26/91
	Spokane, City of	G9200150	301,888	202,620	2/4/92
	Kitsap County Public Works	G9200071	156,990	100,785	2/25/92
	Douglas County	G9200168	103,668	66,945	3/16/92
	Lewis County Health District	G9200121	27,659	3,130	3/19/92
	Lincoln County Planning	G9200213	43,804	32,853	3/25/92
	Grant County	G9200200	44,900	33,675	3/30/92
	Asotin County	G9200225	63,187	36,864	4/6/92
Klickitat County	G9200249	86,611	54,266	4/28/92	
Adams County	G9200253	61,057	35,226	5/18/92	
TOTAL		2,608,720	1,760,919		
<b>HW Pilot Project</b>	Thurston County	G9200059	178,675	50,000	10/6/91
	TOTAL		178,675	50,000	

**Solid Waste Planning**

Wahkiakum County	Tax91183	35,000	17,500	7/3/91
Klickitat County	TAX91220	146,330	73,165	7/20/91
Benton Franklin Governmental Conference	TAX91107	122,049	61,024	7/25/91
Skagit County	G9200051	200,000	100,000	8/26/91
Clark County	G9200048	255,925	100,000	9/29/91
Whatcom County	G9200068	267,480	133,740	10/14/91
Yakima County	G9200076	184,820	92,410	11/5/91
Island County	G9200197	124,000	62,000	4/10/92
Whatcom County	G9200223	109,500	54,750	4/17/92
<b>TOTAL</b>		<b>1,445,104</b>	<b>694,589</b>	

**Public Participation**

Community Services Work Group	G9200230	10,000	10,000	4/7/92
Hanford Education Action League	G9200236	20,000	20,000	4/7/92
Puget Sounders	G9200245	37,095	37,095	4/7/92
Clean Air Now	G9200246	33,600	33,600	4/17/92
Citizens for Clean Air	G9200239	39,000	39,000	4/24/92
Olympic View Environmental Review Council	G9200237	35,000	35,000	5/5/92
Colbert Landfill Area Contaminate Area Committee	G9200238	44,628	44,628	5/7/92
Fremont Neighborhood Council	G9200255	41,750	41,750	5/7/92
Marshall Community Coalition	G9200256	27,900	27,900	5/7/92
Clark Co. Hazardous Waste Citizen Task Force	G9200286	25,000	25,000	6/1/92
Metrocenter YMCA	G9200295	44,000	44,000	6/12/92
Metrocenter YMCA	G9200296	43,660	43,660	6/12/92
Nisqually Delta Association	G9200279	42,490	42,490	6/15/92
Puget Sound Alliance	G9200254	42,200	42,200	6/18/92
<b>TOTAL</b>		<b>486,323</b>	<b>486,323</b>	

**Remedial Action**

Tacoma, City of	G9200054	16,849,594	8,424,797	10/7/91
Spokane, City of	G9200077	5,492,948	2,746,474	11/19/91
Anacortes, City of	G9200280	121,000	50,000	5/21/92
Spokane County	G9200293	507,000	253,500	6/1/92
<b>TOTAL</b>		<b>22,970,542</b>	<b>11,474,771</b>	

**Coordinated Prevention**

Snohomish Health District	G9200152	116,668	70,000	1/20/92
Grant County	G9200153	85,215	63,912	1/27/92
Benton Franklin Health District	G9200156	100,512	70,000	2/2/92
Lake Forest Park, City of	G9200161	21,737	13,042	2/2/92
Mercer Island, City of	G9200155	86,535	51,921	2/2/92
Thurston Co. Public Health Department	G9200149	704,420	388,440	2/10/92
Spokane, City of	G9200158	2,538,866	1,475,720	2/13/92
Thurston Co. Public Works	G9200148	560,800	336,480	2/23/92
Island County	G9200175	430,370	234,323	3/4/92
Renton, City of	G9200167	180,992	108,594	3/5/92
Mason County Public Health	G9200176	88,000	62,250	3/6/92
Bremerton Kitsap Co. Health Department	G9200181	292,727	141,714	3/16/92
Cowlitz Wahkiakum Health District	G9200154	93,333	70,000	3/16/92
Douglas County Public Works	G9200182	384,384	239,848	3/16/92
Grant County Health Department	G9200144	29,000	21,750	3/16/92
Okanogan County Health District	G9200210	93,330	70,000	3/19/92
Tukwila, City of	G9200180	66,670	40,002	3/19/92
Oak Harbor	G9200174	55,995	33,597	3/23/92
Chelan Douglas Health District	G9200183	219,603	91,718	3/24/92
Island County Health Department	G9200171	116,667	70,000	3/24/92
Shelton, City of	G9200202	98,715	72,767	3/24/92
Southwest Wa. Health District	G9200216	107,692	70,000	3/24/92
Wahkiakum County	G9200205	25,500	19,125	3/25/92
Walla Walla & Columbia Counties	G9200209	654,615	385,850	3/25/92
Centralia, City of	G9200226	17,000	12,750	3/30/92
Seatac, City of	G9200206	72,548	43,529	4/2/92

Southwest Wa. Health District	G9200234	579,876	326,571	4/2/92
Spokane Co. Health Dept.	G9200165	80,000	48,000	4/2/92
Des Moines, City of	G9200212	51,261	30,757	4/6/92
Lewis County	G9200228	280,000	210,000	4/7/92
Lewis County Health District	G9200229	92,854	69,641	4/7/92
Lincoln Co. Health District	G9200235	58,750	38,188	4/7/92
Northeast Tricounty Health District	G9200211	50,709	38,099	4/7/92
Yakima County	G9200224	913,014	652,911	4/10/92
Asotin County	G9200240	237,455	123,042	4/17/92
Island County	G9200260	1,250,000	500,000	4/17/92
Mason County	G9200203	187,625	122,437	4/17/92
Whatcom County Health Department	G9200159	116,666	70,000	4/17/92
Yakima County Health District	G9200232	203,733	152,800	4/17/92
Tacoma Pierce Co. Health Department	G9200208	107,692	70,000	4/30/92
Clallam County	G9200233	64,762	48,572	4/31/92
Whitman County Health Department	G9200258	70,000	45,500	5/9/92
Jefferson County Health Department	G9200259	44,483	28,914	5/18/92
Skagit County Public Works Dept.	G9200268	192,534	126,480	5/18/92
Adams County	G9200199	64,700	42,055	5/21/92
Seattle King Co. Dept. of Public Health	G9200231	116,667	70,000	5/21/92
Skagit County Health Department	G9200241	116,667	70,000	5/25/92
Mason County Dept. of Community Development	G9200283	877,064	377,064	6/1/92
Issaquah, City of	G9200284	34,749	20,849	6/8/92
Grays Harbor Dept. Of Human Services	G9500281	76,225	57,168	6/9/92
Pacific County Health District	G9200282	73,675	55,256	6/9/92
Redmond, City of	G9200297	170,709	102,425	6/9/92
Bellevue, City of	G9200257	468,400	281,040	6/23/92
Yakima, City of	G9200222	56,000	42,000	6/23/92

TOTAL		13,878,164	8,077,101	
-------	--	------------	-----------	--

GRAND TOTAL		41,778,114	22,648,996	
-------------	--	------------	------------	--

### Breakdown of Coordinated Prevention Grants by Task:

HWPE: Hazardous Waste Planning & Evaluation	250,799
HWHST: Hazardous Waste Health & Safety Training	9,169
HHEI: Household Hazardous Waste Education & Information	257,541
HHWC: Household Hazardous Waste Compliance	21,718
HHCD: Household Hazardous Waste Collection & Disposal	1,840,530
SQ: Small Quantity Generator Education & Information	31,687
SQTC: Small Quantity Generator Technical Assistance & Compliance	230,050
SQGC: Small Quantity Generator Collection	74,429
SWP: Solid Waste Planning	162,680
SWE: Solid Waste Enforcement	1,469,017
WRR: Waste Reduction & Recycling	2,712,132
GWM: Groundwater Monitoring	140,285
LC: Landfill Closure	877,064
Total	8,077,101

# Hazardous Sites List

State sites on the Hazardous Sites List have undergone a preliminary study called a Site Hazard Assessment, which provides Ecology with basic information about a site and contaminants which may be on it.

Ecology then uses the Washington Ranking Method to estimate the potential threat to human health and the environment if the problem isn't corrected. The estimate is based on the amount of contaminants, how toxic they are, and how easily they could come into contact with people and the environment. Sites are ranked relative to each other on a scale of one to five, with a score of one representing

the highest level of concern relative to other sites, and five the lowest.

Hazard ranking helps Ecology target where to spend cleanup funds. However, a site's actual impacts on human health and the environment, public concern, a need for an immediate response, and available cleanup staff and funding also affect which sites get first priority for cleanup.

The Washington Ranking Method was revised in 1992 to reference new air quality standards, address documented releases of contaminated ground water to surface water, and incorporate Ecology's proposed scoring

procedure for contaminated Puget Sound sediments.

Information about sites is published in the Site Register. Additions to the list are announced by Ecology twice each year. Owners, operators and potentially liable owners and operators of hazardous waste sites are notified when their site is ranked and placed on the list. Placement of a site on the Hazardous Sites List does not, by itself, imply that persons associated with the site are liable under Chapter 70.105D RCW.

You can place your name on the Site Register mailing list by contacting Sherrie Hanson at (206) 438-3017 or (800) 458-0920.

## Hazardous Sites List Facts

245 (62%) sites are in Western Washington; 130 of those sites are in King, Pierce and Snohomish counties (33% of the statewide total).

149 (38%) sites are in Eastern Washington.

171 (43.4%) sites are ranked #1\*.

48 (12.2%) sites are ranked #2.

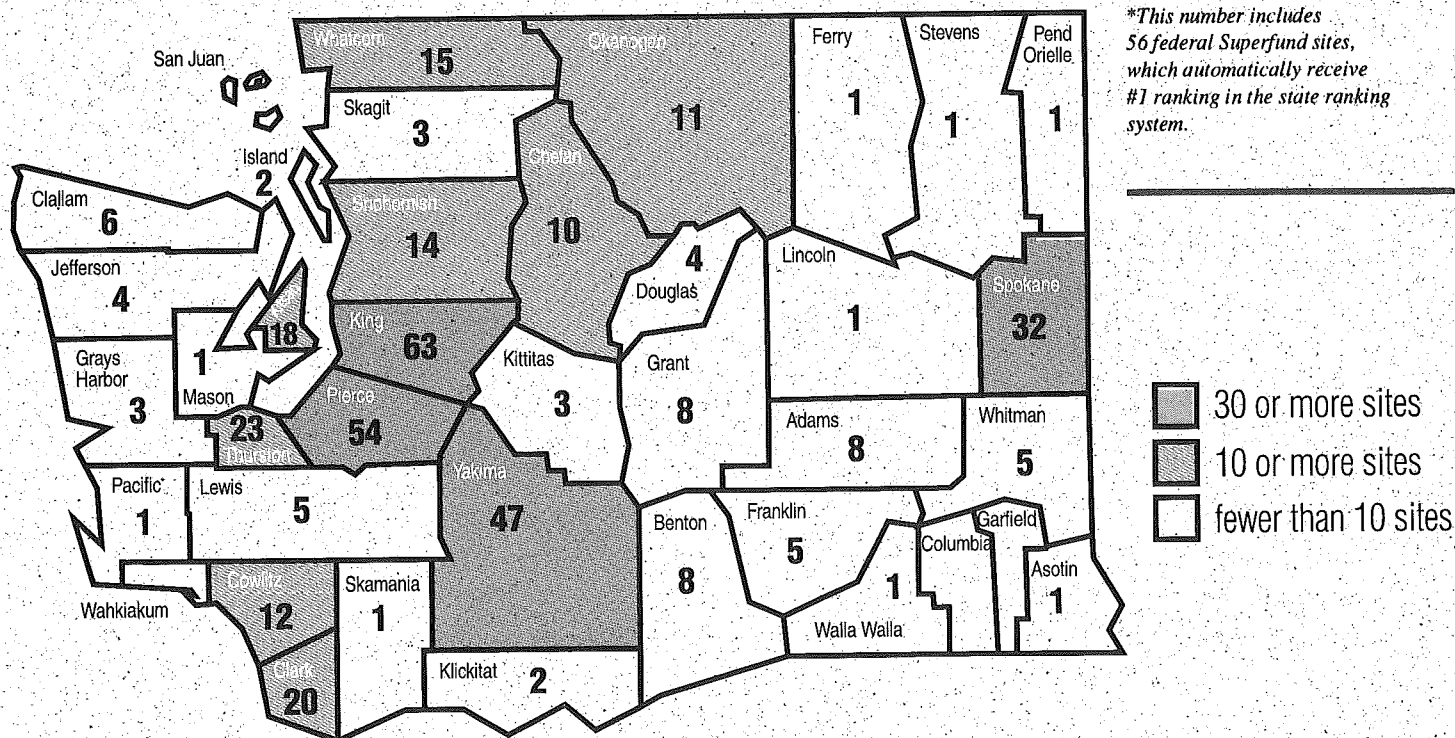
44 (11.2%) sites are ranked #3.

64 (16.2%) sites are ranked #4.

67 (17.0%) sites are ranked #5.

\*This number includes 56 federal Superfund sites, which automatically receive #1 ranking in the state ranking system.

### Distribution of Hazardous Sites List Sites



**CENTRAL REGION**

Contact Person: Mark Peterschmidt (509) 454-7840

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***	
Benton	Ben Franklin Transit	Richland	5♦	Independent RA	
	# CENEX	Kennewick	4♦	Independent RA	
	Oggie's Mini-Mart	Prosser	5♦	Independent RA	
Chelan	Simplot	Prosser	4	Independent RA	
	Cascade Helicopter	Cashmere	2	RA in Progress	
	Cashmere Landfill	Cashmere	1	Awaiting RA	
	Dryden Landfill	Dryden	4	Awaiting RA	
	Glacier Park	Leavenworth	1	RA in Progress	
	Holden Mine Tailings	Holden	1	Independent RA	
	Manson Landfill	Manson	2	Awaiting RA	
	Unocal Bulk Plant #0082	Chelan	1	Awaiting RA	
	Unocal Bulk Plant #0853	Wenatchee	1	Awaiting RA	
	Unocal Service Station #4942	Wenatchee	4♦	Awaiting RA	
Douglas	WSU Tree-Fruit Research Unit (Wenatchee Pesticide Lab)	Wenatchee	3	Independent RA	
	Beebe Orchard Dump	Chelan Falls	5	Awaiting RA	
	Inland Air Service (Fancher Field)	East Wenatchee	4	Awaiting RA	
	Silicon Metaltech Inc. Lab. Site	Rock Island	5	Awaiting RA	
Kittitas	Silicon Metaltech Inc. Lagoon Site	Rock Island	4	Awaiting RA	
	Big B. Mini-mart (Exxon)	Ellensburg	4	Awaiting RA	
Klickitat	Bingo Fuel Stop	Thorp	2	RA in Progress	
	Mid-State Aviation	Ellensburg	3	Awaiting RA	
	Town Pump Station	White Salmon	1	RA in Progress	
Okanogan	Arden's Country Store	Malott	3	RA in Progress	
	Brett Pit	Grand Coulee Dam	2	Awaiting RA	
	Eisen Chevron Station	Oroville	2	RA in Progress	
	Gebbers Farm Dump	Brewster	1	Awaiting RA	
	Minnie Mine	Carlton	2	RA in Progress	
	Molson Dump	Molson	5	Awaiting RA	
	Oroville Dump	Oroville	5	Independent RA	
	Pariseau Farm Dump	Brewster	2	Awaiting RA	
	Tonasket Post & Rail	Tonasket	5	Awaiting RA	
	USDOI-BLM Kaaba Texas Mine	Nighthawk	1	RA in Progress	
	Yakima	Bay Chemical Company (former E. Washington Ave. site)	Yakima	2	RA in Progress
		Bee-Jay Scales (Valley Agriculture)	Sunnyside	1	Awaiting RA
		Boise Cascade	Naches	1	Independent RA
		Briar Development Company	Yakima	3	RA in Progress
		Cameron-Yakima, Inc.	Yakima	1	RA in Progress
		Cascade Natural Gas	Sunnyside	1	RA in Progress
		Cliff's Battery Service	Sunnyside	4	Awaiting RA
		CMX Corporation	Yakima	3	RA in Progress
		Comet Trailer Corp.	Selah	1	Awaiting RA
Consolidated Freightways		Yakima	4	Independent RA	
Evergreen Products		Parker	3	Awaiting RA	
Frank Wear Cleaners		Yakima	1	RA in Progress	
Hahn Motor Company		Yakima	5	RA in Progress	
Irwin Research and Development, Inc.		Yakima	2	Awaiting RA	
Jackpot Station		Union Gap	4♦	Awaiting RA	
Johnny's Texaco		Sunnyside	4	RA in Progress	
Kellogg's Korner		Sunnyside	1	RA in Progress	
La Rosita		Sunnyside	4♦	Awaiting RA	
# Maid O' Clover - E. Nob Hill Blvd.		Yakima	2	Independent RA	
Manhole 34		Sunnyside	1	RA in Progress	
Northwest Truck Repair		Union Gap	4♦	Awaiting RA	
Nu-Way Cleaners		Yakima	1	RA in Progress	
Old Selah Dump Site		Selah	5♦	Awaiting RA	
Outlook School		Outlook	5♦	IRA Conducted	
Paxton Sales Corporation		Yakima	1	RA in Progress	
Pederson Fryer Farms		Moxee	3	IRA Conducted	
Pit Stop	Naches	2	Awaiting RA		
Rainier Plastics Co.	Yakima	3	Awaiting RA		
Richardson Airways	Yakima	2	RA in Progress		
Section 18 Dump	Wapato	3	Awaiting RA		
Shields Bag and Paper Co.	Yakima	5♦	Awaiting RA		

♦ Ground water is the only affected contaminant pathway at this site.  
 \*\* National Priorities List (Superfund) site ranked under the Federal Hazard Ranking System.  
 # New site added to the ranked list as of August, 1992

Snipes Mountain Landfill	Sunnyside	4	Awaiting RA
Southgate Laundry	Yakima	3	Awaiting RA
# Superior Asphalt	Yakima	1	RA in Progress
Sunnyside Municipal Well	Sunnyside	5♦	Awaiting RA
Tiger Oil Corporation (24th and Nob-Hill)	Yakima	1	RA in Progress
Tiger Oil Corporation (North 1st Street)	Yakima	3	Awaiting RA
Toppenish School District (#202 Bus Garage)	Toppenish	4♦	Awaiting RA
Valley Cleaners	Sunnyside	2	Awaiting RA
Van Cleave Body Shop	Yakima	1	Awaiting RA
Woods Ind. (Crop King)	Yakima	1	RA in Progress
Yakima County (former Crest Linen)	Yakima	1	RA in Progress
Yakima Valley Spray	Yakima	1	RA in Progress
Zwight Logging	Yakima	3	Awaiting RA

### Eastern Region

Contact Person: Patti Carter (509) 456-6167

County	Site Name	Nearest City	Rank*	Status***	
Adams	Burlington Northern-Othello	Othello	1	RA in Progress	
	CMC Real Estate	Othello	5	Awaiting RA	
	Harold's Deli	Othello	5	RA in Progress	
	Puregro	Othello	5	Awaiting RA	
	Puregro	Ritzville	5	Awaiting RA	
	Soil & Crop	Othello	2	RA in Progress	
	T-16 Ranch	Lind	5	Independent RA	
Asotin	WWT Batum Facility	Batum	5	Awaiting RA	
	Asotin County Landfill	Clarkston	5♦	Awaiting RA	
Ferry	Hecla Knob Hill Mine	Republic	5	Awaiting RA	
	# Glen's Metals	Pasco	5♦	Awaiting RA	
Franklin	Pasco Landfill	Pasco	**	RA in Progress	
	Port of Pasco	Pasco	1	RA in Progress	
Grant	Puregro	Pasco	1	Awaiting RA	
	# Smith Canyon	Pasco	5	Independent RA	
	Ephrata Landfill	Ephrata	5	Awaiting RA	
	Grant Co. Dangerous Waste Site	Royal City	5♦	Awaiting RA	
	International Titanium	Moses Lake	4	Awaiting RA	
	Puregro	Moses Lake	5	Awaiting RA	
	Puregro	Quincy	5	Awaiting RA	
	Puregro	Warden	5	Awaiting RA	
	Vista Corner Texaco	Moses Lake	3	Awaiting RA	
	Puregro	Wilbur	5	Awaiting RA	
	Lincoln Pend Oreille Spokane	Cusick School District	Cusick	5♦	Cleanup Conducted
		Alaska Steel and Supply	Spokane	4	Awaiting RA
Alum. Recycling Corp. (Wellesley)		Spokane	2	Awaiting RA	
# American Tar Company		Spokane	5♦	Awaiting RA	
Argonne Road		Spokane	3	RA in Progress	
B.J. Carney & Company		Spokane	4♦	Awaiting RA	
Burlington Northern-Hillyard		Spokane	4	Awaiting RA	
# Cummins Northwest		Spokane	5♦	Independent RA	
Four Lakes Tire Fire		Four Lakes	5♦	Awaiting RA	
# Geiger-Conoco Fuel Storage		Spokane	5♦	Awaiting RA	
# Geiger-SIA-Fire Training Area		Spokane	4	Awaiting RA	
# Geiger-SIA-Fuel Farm		Spokane	5♦	Independent RA	
# Geiger-SIABP-COE Geiger Field		Spokane	2	Independent RA	
# Geiger-SIABP-Corrections Facility		Spokane	5♦	Awaiting RA	
# Geiger-SIABP-Shamrock Paving		Spokane	5♦	Awaiting RA	
General Electric (Spokane Shop)		Spokane	**	RA in Progress	
Greenacres Landfill		Greenacres	**	RA in Progress	
Inland Empire Plating		Spokane	1	Independent RA	
Inland Metals, Inc		Spokane	2	Independent RA	
Inland Pit		Spokane	**	Awaiting RA	
# Koch Materials Co.		Spokane	3	Awaiting RA	
Marshall Landfill		Marshall	4	Awaiting RA	
Mica Landfill		Mica	**	RA in Progress	
North Market Street		Spokane	**	RA in Progress	
Spokane Junkyard		Spokane	3	Awaiting RA	
Spokane Transit Authority (Bus Bam)		Spokane	5♦	Independent RA	
United Parcel Service		Spokane	5♦	Awaiting RA	
Washington State Dept. of Transportation-Mayfair		Spokane	5♦	Awaiting RA	
Stevens-Whitten Oil Exxon		Colville	3	RA in Progress	
Walla Walla Farmers Coop		Walla Walla	1	RA in Progress	
Endicott School District		Endicott	4	RA in Progress	
Garfield School District		Garfield	5♦	RA in Progress	
Oakesdale City Well #4		Oakesdale	4	Cleanup Conducted	
Palouse Producers	Palouse	1	RA in Progress		
WSU Landfill	Pullman	4	Awaiting RA		

**Industrial Section**

Contact Person: Paul Skillingstad (206) 586-0583

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Clallam	Daishowa America Co.	Port Angeles	5	Independent RA
	ALCOA (Vancouver Smelter)	Vancouver	**	RA in Progress
Clark	Columbia Marine Lines	Vancouver	4	Cleanup Conducted
	Longview Fibre	Longview	5	Awaiting RA
Cowlitz	Reynolds Metals	Longview	5	Awaiting RA
	Weyerhaeuser - Longview	Longview	1	RA in Progress
Klickitat	Columbia Aluminum Corp.	Cliffs	3	Awaiting RA
	Kaiser Aluminum Chemical Corp.	Tacoma	4	RA in Progress
Pierce	Kaiser Aluminum Mead Works	Mead	**	RA in Progress
Spokane	Georgia Pacific Biotreatment Lagoon	Bellingham	2	Awaiting RA
	Georgia Pacific Corporation	Bellingham	5	Awaiting RA

**Northwest Region**

Contact Persons: Judy Aitken (206) 649-7135

Elaine Atkinson (206) 649-7042

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
King	Ace Galvanizing Inc.	Seattle	4	Awaiting RA
	Advance Electroplating	Seattle	5	Awaiting RA
	Alaska Pacific Fisheries	Seattle	1	Awaiting RA
	ARCO Tank Farm	Seattle	2	RA in Progress
	Auburn Fire Department	Auburn	3	Awaiting RA
	BNR - Balmer Yard	Seattle	5	Independent RA
	BNR - Interbay	Seattle	1	Independent RA
	BNR - Roundhouse (Skykomish Train Yard)	Skykomish	1	RA in Progress
	Boeing Plant #2	Seattle	1	Awaiting RA
	# Borden Chemical	Kent	1	Awaiting RA
	# C & F Auto Wrecking	Duvall	1	Awaiting RA
	# Cedar Hills Landfill	Maple Valley	1	Independent RA
	Central Painting	Seattle	2	Awaiting RA
	Champion International-Ballard	Seattle	1	RA in Progress
	Chemcentral Solvents	Kent	1	Independent RA
	Eastern Supply	Seattle	2	RA in Progress
	Gas Works Park	Seattle	1	RA in Progress
	# G.E. Apparatus Service Center	Kent	3	Awaiting RA
	Harbor Island	Seattle	**	RA in Progress
	J.H. Baxter Company, Inc.	Renton	1	RA in Progress
	Kenmore Industrial Park (formerly Kenmore Building Materials)	Kenmore	1	Awaiting RA
	Kent Highlands	Kent	**	RA in Progress
	Kent Sewage Lagoons	Kent	4	Awaiting RA
	Laidlaw	Seattle	4	Awaiting RA
	Lake Union Dry Dock	Seattle	1	Awaiting RA
	Lake Washington School District	Kirkland	5	Cleanup Conducted
	Landsburg Mine - Rogers Seam	Black Diamond	1	RA in Progress
	LIDCO Liquid Waste Disposal Co.	Kent	1	RA in Progress
	Lindal Property	Kent	4	Awaiting RA
	Lockheed Ship Building	Seattle	1	RA in Progress
	Longview Fibre-King Co.	Seattle	5	RA in Progress
	Malarkey Asphalt	Seattle	1	Awaiting RA
	Maralco Aluminum	Kent	2	RA in Progress
	Marine Vacuum Service	Seattle	3	Awaiting RA
	# Markey Property	Seattle	3	Awaiting RA
	Metro Lake Union Tank Farm	Seattle	1	Awaiting RA
	Metro South Base	Seattle	1	Awaiting RA
	Midway Landfill	Kent	**	RA in Progress
	Mobil Bulk Facility	Renton	5	RA in Progress
	Monterey Apartments	Seattle	3	RA in Progress
	# Newcastle/Coal Creek Landfill	Newcastle	5	Awaiting RA
	Northwest Cooperage	Seattle	4	Awaiting RA
	Northwest Powder Coats	Kent	5♦	Awaiting RA
	Old Lawson Road (Accurate Enterprises/Bowen Prop.)	Black Diamond	2	Awaiting RA
	Pacific Car & Foundry Co. (PACCAR)	Renton	**	RA in Progress
	Pacific Way South 252nd	Kent	4	Awaiting RA
	Pioneer Porcelain Enamel Co.	Seattle	5	Awaiting RA
Precision Engineering	Seattle	1	Independent RA	
Quendall Terminals	Renton	1	RA in Progress	
Reichhold Chemical/Lonestar Cement	Seattle	1	Awaiting RA	
Shell Oil - Old Terminal 18	Seattle	5	RA in Progress	

	Shell Tank Farm	Seattle	4	RA in Progress
	Slag Disposal/Beckwith Property	Kent	3	RA in Progress
	Sternoff Metals	Seattle	5	Independent RA
	Sunset Park/Tub Lake - King Co. Dept. Public Works	SeaTac	3	Awaiting RA
	# Texaco Marketing/Refinery - Harbor Island	Seattle	1	Awaiting RA
	Union Station	Seattle	5♦	Awaiting RA
	Unocal Seattle Market Terminal	Seattle	4	RA in Progress
	# VIOX/McDowell Property	Seattle	5♦	Awaiting RA
	Western Batteries	Seattle	3	Independent RA
	Zandt Brass Foundry	Seattle	4	RA in Progress
Kitsap	# Bainbridge Island Landfill	Bainbridge	1	Awaiting RA
	Bethel Wells (former Texaco)	Bethel	5♦	RA in Progress
	Chevron Tank Farm	Bremerton	2	Independent RA
	Country Junction Store	Port Orchard	4	RA in Progress
	Day Road Industrial Park	Bainbridge Island	5	Awaiting RA
	Hansville Landfill	Little Boston	1	Awaiting RA
	Lofthas Bulk Fuel Facility	Bremerton	1	Awaiting RA
	Norseland Site	Port Orchard	2	Awaiting RA
	Stone Property	Bainbridge Island	4	Awaiting RA
	Strandley Manning Site	Port Orchard	3	RA in Progress
Skagit	Butler Hill Lagoon	Burlington	4	RA in Progress
	Unocal Tank Farm	Mt. Vernon	1	Awaiting RA
Snohomish	East Waterway	Everett	2	Awaiting RA
	Everett Smelter	Everett	1	RA in Progress
	Everett Tire Fire	Everett	1	RA in Progress
	# Fisherman's Boat Shop	Everett	3	Awaiting RA
	# J.H. Baxter & Company	Arlington	4	Awaiting RA
	Ken's Radiator	Lynnwood	2	Independent RA
	Nord Door	Everett	5	Independent RA
	# Pump Crete	Lynnwood	5	Awaiting RA
	Snohomish Co. PUD -Lynnwood Substation	Lynnwood	2	Awaiting RA
	Unocal -Edmonds Bulk Plant	Edmonds	1	RA in Progress
	U.S. Defense Fuel Supply Point	Mukilteo	1	RA in Progress
	Wallace River Park Well	Startup	4	RA in Progress
	Weyerhaeuser - Mill Site	Everett	1	Independent RA
Whatcom	Boulevard Park	Bellingham	1	Awaiting RA
	# Cornwall Avenue Landfill	Bellingham	2	Awaiting RA
	Georgia Pacific Airport Landfill	Bellingham	4	Awaiting RA
	Oeser Cedar (Little Squaticum Creek)	Bellingham	1	Awaiting RA
	# R.G. Haley Int.	Bellingham	3	Awaiting RA
	# Sunshine Cleaners	Bellingham	2	Awaiting RA
	Trans Mountain Oil Pipeline - Laurel Pump Station	Bellingham	1	RA in Progress
	# Uniflite/Murray Chris-Craft	Bellingham	2	Awaiting RA
	Whatcom Waterway	Bellingham	1	Awaiting RA
	Wilder Landfill (Thermal Reduction)	Ferndale	1	RA in Progress

### Nuclear And Mixed Waste Program - Hanford Project

Contact Person: Dave Jansen (206) 438-7021

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Benton	Hanford 100-Area (USDOE)	Richland	**	RA in Progress
	Hanford 1100-Area (USDOE)	Richland	**	RA in Progress
	Hanford 200-Area (USDOE)	Richland	**	RA in Progress
	Hanford 300-Area (USDOE)	Richland	**	RA in Progress

### Site Cleanup Section

Contact Person: Tim Nord (206) 438-3039

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Clark	Bonneville Power Adm Ross (USDOE)	Vancouver	**	RA in Progress
	Frontier Hard Chrome, Inc	Vancouver	**	RA in Progress
	Vancouver Well #4	Vancouver	**	Awaiting RA
Grant	Moses Lake Wellfield	Moses Lake	**	Awaiting RA
Island	Naval Air Sta. Whid Is (Ault)	Whidbey Island	**	RA in Progress
	Naval Air Sta. Whid Is (Seaplane)	Whidbey Island	**	RA in Progress
Jefferson	NUWES Indian Island	Chimacum	1	RA in Progress
King	Queen City Farms	Maple Valley	**	RA in Progress
	Western Processing Co., Inc.	Kent	**	Cleanup Conducted
Kitsap	Eagle Harbor	Bainbridge Island	**	RA in Progress
	# Jackson Park-Housing Complex (JPHC)	Bremerton	1	Awaiting RA
	NUWES - Keyport (4 areas)	Keyport	**	RA in Progress



	Puget Sound Naval Shipyard	Bremerton	1	RA in Progress
	US Navy Bangor Naval Submarine Base	Silverdale	**	RA in Progress
	US Navy Bangor Ordnance Disposal	Silverdale	**	RA in Progress
	US Naval Supply Center	Bremerton	1	RA in Progress
Lewis	Wyckoff Company	Bainbridge Island	**	RA in Progress
Okanogan	American Crossarm & Conduit Co.	Chehalis	**	RA in Progress
Pierce	Silver Mountain Mine	Loomis	**	RA in Progress
	ASARCO	Tacoma	**	RA in Progress
	Commencement Bay, Ruston/Vashon	Tacoma	**	RA in Progress
	McChord AFB (American Lake Gardens)	Tacoma	**	RA in Progress
	McChord AFB (Wash Rack/Treatment)	Tacoma	**	RA in Progress
	Ponders Corner (Lakewood Site)	Lakewood	**	RA in Progress
	South Tacoma Field (Tacoma Swamp)	Tacoma	**	RA in Progress
	Tacoma Landfill	Tacoma	**	RA in Progress
	Tacoma Tar pits	Tacoma	**	RA in Progress
	US Army-Fort Lewis (Ldfl #4/SRCPP)	Fort Lewis	**	RA in Progress
	US Army-Fort Lewis (Landfill No. 5)	Fort Lewis	**	RA in Progress
	US Army-Fort Lewis Logistics Center	Fort Lewis	**	RA in Progress
	Well-12A	Tacoma	**	RA in Progress
Skagit	EDB-2-Birdsview	Mount Vernon	1	Cleanup Conducted
Skamania	USACOE-Hamilton Island Landfill	North Bonneville	**	Awaiting RA
Snohomish	Tulalip Landfill	Marysville	**	Awaiting RA
Spokane	Colbert Landfill	Colbert	**	RA in Progress
	Fairchild Air Force Base (4 Areas)	Spokane	**	RA in Progress
	Mica Peak Radar Facility	Spokane	4	RA in Progress
	Northside Landfill	Spokane	**	RA in Progress
Thurston	EDB-1-(Spoonier Strawberry Farm)	Olympia	2	Cleanup Conducted
	Restover Truck Stop	Tumwater	3	RA in Progress
Whatcom	EDB-3-Meadowdale	Lynden	3	Cleanup Conducted
	Northwest Transformer (Mission/Pole)	Everson	**	RA in Progress
	Northwest Transformer (So. Harkness)	Everson	**	RA in Progress
Yakima	FMC Corp. (Yakima Pit)	Yakima	**	RA in Progress
	Pesticide Lab (Yakima)	Yakima	**	RA in Progress
	Yakima Plating Co.	Yakima	**	RA in Progress

### Southwest Region

Contact Person: Dick Heggen (206) 586-8618

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Clallam	# Chevron Bulk Plant	Port Angeles	1	Awaiting RA
	PenPly (ITT Rayonier)	Port Angeles	5	RA in Progress
	# Port of Port Angeles Log Yard	Port Angeles	1	Awaiting RA
	Truck Town	Port Angeles	3	Awaiting RA
Clark	# Unocal Bulk Oil Storage Terminal #0601	Port Angeles	1	Independent RA
	Allied Chemical (General Chemical Corp.)	Vancouver	5	Awaiting RA
	Burlington Northern - Vanc.	Vancouver	1	Awaiting RA
	Carborundum Co. (Now SOHIO Vancouver Electrominerals Co.)	Vancouver	1	Awaiting RA
	Circle "C" Landfill	Ridgefield	1	Cleanup Conducted
	GATX Terminals	Vancouver	1	Awaiting RA
	Griffie Cleaners	Vancouver	5	Awaiting RA
	L & C Deli	Vancouver	4	RA in Progress
	Larch Mountain (DNR)	Washougal	2	Independent RA
	Leichner Bros. Landfill	Vancouver	3	RA in Progress
	Orbit Industries	Washougal	4	Awaiting RA
	Pacific NW Plating - Boomsnub Corp.	Vancouver	1	RA in Progress
	Port of Vancouver	Vancouver	1	RA in Progress
	Robertson's Paint Shop	Vancouver	5	Awaiting RA
	Tidewater Barge Lines	Vancouver	2	Awaiting RA
	Vancouver Wells 1,3	Vancouver	4	RA in Progress
Cowlitz	Chevron USA, Longview	Longview	1	Awaiting RA
	Cliff Koppe Metals	Kelso	2	Awaiting RA
	Gardner Forest Products (N.B. Gardner)	Longview	4	Independent RA
	Olympic Pipeline Company	Castle Rock	1	Awaiting RA
	Ostrander Rock Disposal	Longview	4	Awaiting RA
	Radakovich Landfill	Longview	1	Awaiting RA
	Reed Landfill	Kelso	1	Awaiting RA
	Unocal Bulk Plant #0321	Kelso	1	Awaiting RA
	West Coast/Mobil Oil	Longview	1	RA in Progress
Grays Harb.	Most Western Laundry	Hoquiam	1	Awaiting RA
	Roderick Timber Company	Junction City	1	Awaiting RA
	Snook Residence	Oakville	1	Awaiting RA
Jefferson	Chevron Bulk Plant	Port Townsend	1	Awaiting RA
	Olympic Testing Labs	Quilcene	2	Awaiting RA
	# Texaco Bulk Plant	Port Townsend	2	Awaiting RA

Lewis	Centralia Landfill	Centralia	**	RA in Progress
	Packwood Lumber Co.	Packwood	4	Awaiting RA
	Trailer Village	Centralia	4♦	Awaiting RA
	Utility Transformer Service Co.	Pe Ell	4	Awaiting RA
Mason	Certified Aerospace, Inc.	Shelton	4	Awaiting RA
Pacific	Weyerhaeuser - Truck Shop	Raymond	1	RA in Progress
Pierce	Atochem Corp (2901 Taylor Way)	Tacoma	1	RA in Progress (cont.)
	Atochem Corp (3009 Taylor Way)	Tacoma	2	RA in Progress
	B & L Woodwaste Fill	Milton	1	RA in Progress
	Brazier Forest Industries	Tacoma	1	Independent RA
	Buffalo Don Murphy-Waller Rd.	Tacoma	1	Awaiting RA
	# Calhoun's Service Station	Tacoma	2	Awaiting RA
	Camp Murray	Tillicum	1	Independent RA
	Cascade Pole-McFarland/Sitcum	Tacoma	4	RA in Progress
	Cascade Pole-Tacoma	Tacoma	1	RA in Progress
	Cascade Timber #1	Tacoma	1	RA in Progress
	Chevron Bulk Plant	Tacoma	3	Independent RA
	Comm Bay-Near Shore/Tide Flats (Includes Cascade Timber #3 - Port of Tacoma and Cascade Timber #3 - US Oil)	Tacoma	**	RA in Progress
	Coski Industrial Dump	Tacoma	5	Awaiting RA
	"D" Street Petroleum	Tacoma	4	RA in Progress
	Domnan Tire Fire	Roy	1	Awaiting RA
	General Metals	Tacoma	1	RA in Progress
	Hidden Valley Landfill (Thun Field)	Puyallup	**	RA in Progress
	Landscaping by Pat Boring	Tacoma	4	Awaiting RA
	Lincoln Ave. Drainage Ditch	Tacoma	3	Awaiting RA
	Louisiana Pacific	Tacoma	1	RA in Progress
	Manke Lumber	Sumner	5	Awaiting RA
	# McCulloch Residence	Tacoma	3	Awaiting RA
	McNeil Island	Steilacoom	1	Cleanup Conducted
	Murray Pacific No. 1	Tacoma	1	RA in Progress
	Music Machine, The	Tacoma	4♦	RA in Progress
	National Oil Dump	Tacoma	4	Awaiting RA
	Occidental Chem. - Marine View	Tacoma	3	Awaiting RA
	Parkland Cleaners	Tacoma	3	Independent RA
	Petroleum Reclaiming Services	Tacoma	2	Awaiting RA
	Puget Sound Power & Light - Electron Camp	Orting	2	Independent RA
	Rhone-Poulenc (Basic Chemicals Co.)	Tacoma	3	Awaiting RA
	Sumner National Auto Parts	Sumner	1	Awaiting RA
	# Tacoma Metals, Inc.	Tacoma	2	Awaiting RA
	Tacoma Storm Drains	Tacoma	1	RA in Progress
	Tam Engineering	Tacoma	1	Awaiting RA
	Union Pacific RR - Tunnel	Tacoma	3	Awaiting RA
	Valley Refinishing	Bonney Lake	1	Awaiting RA
	Wasser Winters	Tacoma	1	RA in Progress
	West Coast Saws/Carbide Processors	Tacoma	4	Independent RA
	Weyerhaeuser-Dupont	Dupont	2	RA in Progress
	Xytec, Inc. (NW Monitor Molded Products)	Tacoma	2	Awaiting RA
Thurston	American Fiberglass	Tumwater	2	Independent RA
	# Black Lake Grocery	Olympia	2	Awaiting RA
	Cascade Pole-Olympia	Olympia	1	RA in Progress
	Cedar Creek Corrections Center	Littlerock	2	Independent RA
	Fourth Street Mobil	Olympia	4♦	RA in Progress
	Hytec - Littlerock	Littlerock	4	Awaiting RA
	# Hytec - Tumwater	Tumwater	3	Awaiting RA
	Lacey DNR Compound	Lacey	4	Independent RA
	Lacey Laundromat (formerly Thurston Co. Water Dist. #2)	Lacey	1	Awaiting RA
	Lacey Valve Grinding	Lacey	5♦	Awaiting RA
	Minitrie Tire Fire	Rochester	1	Awaiting RA
	Monarch Bullet	Rochester	1	Awaiting RA
	Pattison Lake EDB	Lacey	4♦	RA in Progress
	Puget Sound Power & Light	Olympia	5	Independent RA
	Rhodes Chemical Co. Dump	Rochester	3	Awaiting RA
	Rhodes Chemical Co. - Barn	Rochester	3	Awaiting RA
	Texaco Bulk Plant	Tumwater	3	Independent RA
	Unocal - Hulco Site	Olympia	4	Awaiting RA
	Weyerhaeuser Box Plant	Olympia	3	Awaiting RA
	Wolph's Second Hand Store	Olympia	2	Awaiting RA
	Wood Fabricators	Yelm	4	Awaiting RA

Printed on recycled paper made from 100% post-consumer material using soybean oil-based inks.

It is Department of Ecology policy to buy environmentally friendly paper which has "post-consumer" content and has not been bleached with elemental chlorine, which is linked to the formation of toxic dioxins and furans.

Most recycled paper uses "pre-consumer" recycled material made up of cuttings from the paper mill which have never been used in actual products. Many recycled papers are 50% recycled content, 10% being "post-consumer" material that has been used and recycled.

The paper used for this report is *all* post-consumer material. There are flecks in this paper because it was not de-inked.

Soy-based inks substitute 20-40% of the usual petrochemical oils in printing ink with non-hazardous, biodegradable soybean oil. These inks reduce, but do not eliminate, toxic materials used in the printing process.

**Editor**

Ron Langley

**Writer/Researcher**

Anne DeJarnette

**Design**

Tom Leonard

**Cover Photos**

(from top to bottom)

*Lead contaminated soil discovered in a Des Moines neighborhood is fenced off and covered under a Model Toxics Control Act emergency order. The soil was contaminated by a World War II-era oil re-refining plant. An Ecology inspector found children using the dirt pile as a play area. Photo: Norm Peck*

*Workers place rusted drums into "overpack" containers for safe transport from a site in Snohomish County. The site, used for storage of automotive wastes, was cleaned up by the potentially liable person under a Model Toxics Control Act emergency order because of its location near a new elementary school. Photo: Elaine Atkinson*

*A giant "trowel" smoothes a slurry mixture used to solidify contaminants at the PACCAR Inc site in Renton. See page 7 for a description of this site. Photo: Dave South*

**Special Thanks for staff photo contributions:**

Page 6, Chris Poindexter

Page 7, Jim Chulos

Page 8, John Roland

Page 9, Barry Rogowski

Page 11, Deborah North

**Washington State  
Department of Ecology**

PO Box 47600

Olympia WA 98504-7600



**BULK RATE**  
U.S. Postage Paid  
Washington State  
Department of Printing

Publication #92-100