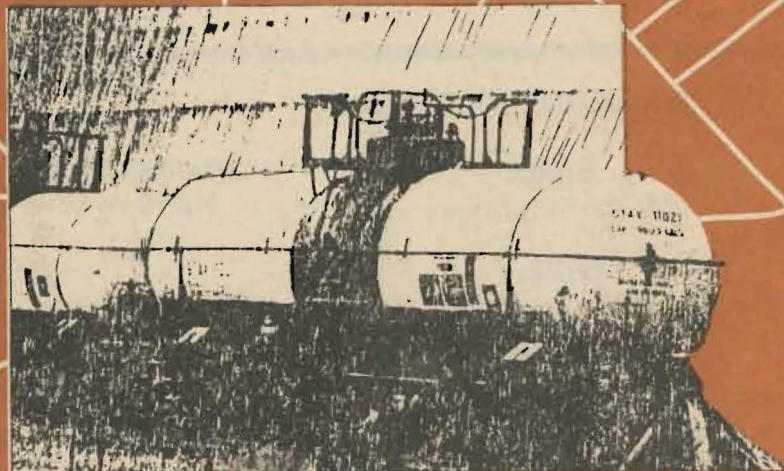
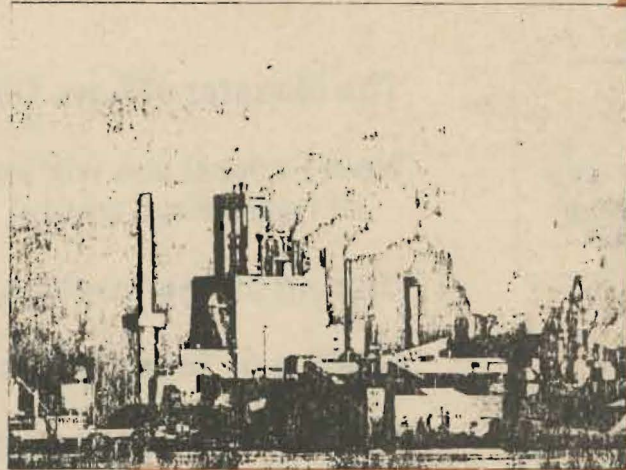


# Magazine

## TACOMA:

*A Toxic  
Dumping  
Ground?*



*Hargis*





# Magazine



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The **Magazine** is a special in-depth section published monthly for the **Mooring Mast** and the students of Pacific Lutheran University.



# The disaster of Love Canal: what happened?

By Tom Paulson

A 1979 study by the Environmental Protection Agency concluded that there are approximately 50,000 disposal sites in the nation which may contain hazardous waste. Some 1,000 to 2,000 of these sites may pose serious health hazards.

The problem of toxic waste has become a national issue, demanding more attention than both air and water pollution. Jim Oberlander, from the state Department of Ecology's spill response center, said, "Nobody really knows what has happened in the past. Nobody knows where much of the toxic waste has been dumped."

An example of this problem is the incident at Love Canal in up-state New York. An article in the August 11, 1980 issue of *Chemical and Engineering news* reviewed the situation from its inception to the present.

According to the article Love Canal was initially just a canal. It was named for William T. Love who dug the canal at the turn of the century in order to connect the upper and lower levels of the nearby Niagara River. He never finished, leaving a 3,000 foot long pit as his namesake.

Hooker Electrochemical Corporation, now Hooker Chemical and Plastics, purchased the 'canal' in 1947 and used it for chemical waste disposal. A layer of clay in the soil was there to prevent chemicals from seeping out of the pit, said the article.

Some 21,000 tons of chemical waste later, Hooker covered up the site and deeded the land to the Niagara Falls Board of Education for one dollar. This was in 1953. A school was built on top of the canal and the Love Canal community grew. Twenty-five years later, an excess of rain and snow raised the water table bringing the chemicals below up into the yards and basements of the Love Canal residents.

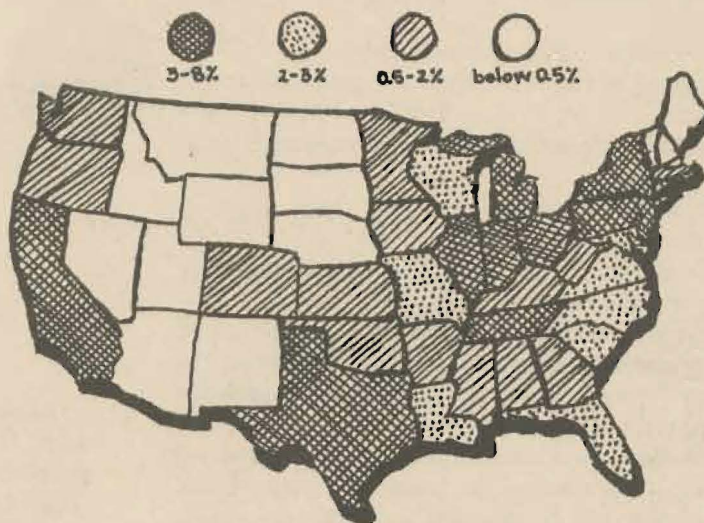
The contamination, which may have been occurring to some extent before the flood, was now obvious. Residents lobbied for relief and in August, 1978, the site was declared a national disaster and 239 families were evacuated. The state bought the site, put an eight foot fence around it and closed it off. Studies were then initiated to determine the health effects of the pollution.

These studies were not to be announced until they had been

The results caught the residents of Love Canal off-guard and they pressured for government action against Hooker, leading to lawsuits filed by the Environmental Protection Agency and the New York State Justice Department. Hooker denied any liability, asserting that it had disposed of the wastes in a legal

The scientific validity of the studies which had ignited the controversy came into question. The question has not been settled. Pic-

% of total hazardous waste  
in the U.S.



reviewed by other scientists as a check on their validity. But in May 1980, the results were 'leaked' to a television news agency.

The findings of one study by Betty Paigen, cancer research scientist at Roswell Memorial Park Institution in Buffalo, New York, indicated that a higher rate of miscarriages and birth defects were correlated with a higher concentration of chemical wastes in the ground.

Another study done by Dante Picciano of Biogenics Incorporation found an abnormally high incidence of chromosome damage which he linked to chemical exposure.

ciano's study has been disputed for lack of controls. Yet other scientists maintain the study still indicates a relative amount of abnormality.

The article concludes by stating that "Love Canal, because of an incredible series of events, has moved beyond the scientific pale: Decisions affecting people's lives and corporate actions are being based on political expediency and political law. However, if the Love Canal saga is allowed to play out, it may extend the frontier of corporate responsibility as well as those of law and environmental health science."



# New Federal law will impose strict regulation of hazardous waste

**The Resource Conservation Recovery Act will encourage safe disposal methods and outlaw "midnight dumping" of hazardous waste.**

**By Tom Paulson**

This year a major environmental law will be enacted concerning the disposal of wastes. The Resource Conservation and Recovery Act (RCRA), which was designed by the Environmental Protection Agency (EPA) and passed by Congress in 1976, will be enforced beginning November 19, this year.

RCRA provides for waste disposal techniques which include:

- Identification of hazardous wastes
- Tracking of the waste from the generator to the disposal site
- Substantial penalties for non-compliance (e.g. \$25,000 per day)
- Standards for facilities which store, treat or dispose of waste
- Tax incentives and grant money to encourage safe waste management

Tom Cook, chief of the hazardous waste section of the Department of Ecology (DOE), described the "manifest" system which the states must develop for hazardous waste disposal and control.

The manifest is a document which will be filled out by an industry producing the hazardous waste, Cook said. The waste will be identified and quantities noted.

After the manifest is completed by the industry, a transporter will pick up the waste for disposal, he said. The transporter similarly fills out his section of the manifest. The details given by industry must match those of the transporter or else the transporter is liable for the discrepancy, he said. If things don't match, it is in the transporter's best interests to refuse to haul it away.

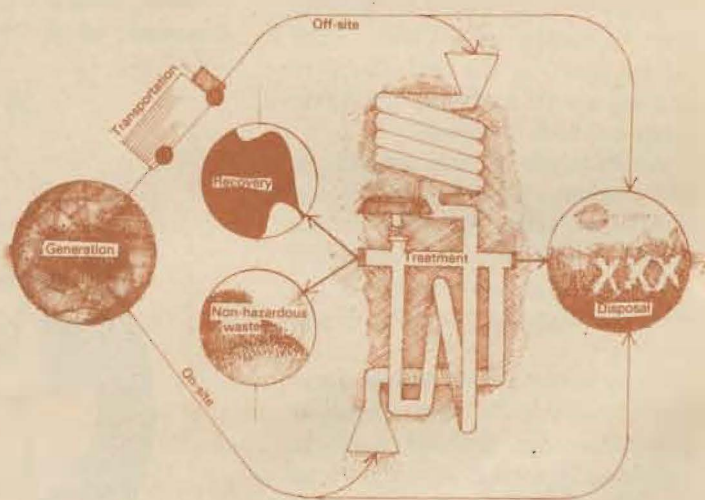
Once the manifest is signed by the industry and the transporter, it will then be completed at the disposal site. At the disposal site the waste will also be checked to see if it is described accurately in the manifest, said Cook. If it is not, the disposal site will refuse to accept it. Thus, the manifest is set up so that someone is responsible for the waste at all times, he said.

"The EPA is working with the DOE to implement a hazardous waste management plan that will be tailored to Washington's needs while meeting all the EPA's regulations," said Cook.

He explained that RCRA was executed with this option in mind. Cook has suggested a system for Washington state which will separate hazardous waste into two categories: "Extremely hazardous waste" and "dangerous waste."

Cook said he believes that this distinction will clarify the EPA's "Somewhat general" category of hazardous waste.

"This will reduce the strain in capacity on the hazardous waste disposal sites," he said.



Another advantage to Washington's system, Cook adds, is that the extremely hazardous waste will be given the care in handling and disposal it deserves. The dangerous waste will not require as much caution.

"This way, you know where the problem is and where it is not," he said.

Several organizations have voiced their opinion of RCRA. Chemical Manufacturers' Association said in an interview for *Time* magazine, "We don't want irresponsible disposal. This [RCRA] is a perfectly reasonable thing for the federal government to do."

John Kimberley, president of Resource Recovery Corporation, runs a landfill in Pasco, Washington and is concerned about the November 19 deadline for RCRA.

Kimberley said he felt that the emphasis in dealing with waste should not be on disposal but on treating and recycling it.

"The EPA told us where we can't dump without helping to find other sites. This may cause indiscriminate dumping because there just won't be any place to put the waste," he said.



# Storing dangerous waste

## How long must we monitor it?

By Tom Paulson and  
Marci Ameluxen

At present, much of Washington's hazardous waste is shipped to a waste management center in Arlington, Oregon, but the rest is either stored or else dumped indiscriminately, according to the Department of Ecology's chief of hazardous waste department, Tom Cook.

In a report on hazardous waste, the Environmental Protection Agency (EPA) estimates that 90 percent of the nation's toxic waste is disposed of improperly. One state official said, "It's not that bad here in the Northwest. It's probably around 50 percent [which is dumped indiscriminately]."

The Arlington site was purchased in 1972 by Chem-Nuclear Systems, Inc., of Bellevue, who originally intended to use it for nuclear waste. But after Oregon passed a law prohibiting nuclear waste from entering the state, they switched to treatment and storage of toxic chemical waste.

"It's an ideal site," said Ed Brooks, Public Relations manager at Chem-Nuclear.

"Our geologist considers it to be the safest location for toxic waste management in the nation."

**The Arlington site will be able to receive hazardous waste for another 50 years, but may have to be monitored for 100 years after that.**

Below the waste site is 35 feet of surface rock, 160 feet of clay and 600 feet of basalt preventing any chemical from leaching out.

The Arlington site will be able to receive hazardous waste for another 50 years, said Brooks. Af-

ter that the stored waste will need to be monitored and maintained until it becomes innocuous, or is recovered and recycled.

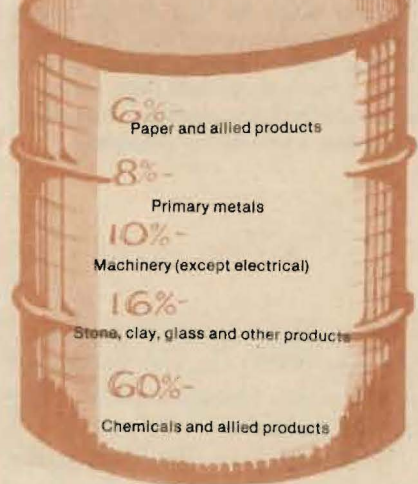
The cost for this care comes out of the fee that Chem-Nuclear charges of its services, Brooks said. When the Arlington site has reach its capacity the state of Oregon will acquire the deed to the property and continue to monitor the site with a perpetual care fund established from fees for storage and treatment.

How long must the site be monitored?

"Some wastes will become innocuous in a few months," said Brooks. "Others stored in the site could take as long as 100 years," Brooks said.

Chem-Nuclear expects a "reasonable" increase in volume of hazardous waste to be stored as a result of the new Resource Conservation and Recovery Act (RCRA).

"At current rates the volume will probably double over several years, allowing for industrial growth," Brooks said.



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Chem-Nuclear expects a "reasonable" increase in volume of hazardous waste to be stored as a result of the new Resource Conservation and Recovery Act (RCRA).

"At current rates the volume will probably double over several years, allowing for industrial growth," Brooks said.

Aside from being a storage location for wastes, the Arlington site will soon have the facilities to treat and detoxify wastes.

Bill Johnson, western operations manager for Chem-Nuclear, said the company is setting up a treatment plant which will neutralize harmful substances such as acids and bases, and possibly extract reusable material.

As the system now stands, there are two general procedures for handling the waste. Liquid waste is placed in ponds lined with polyethylene and evaporated to a concentrate, which is put into 55-gallon drums and buried in the trenches.

**At current rates the volume of waste received by Arlington will double over several years.**

Solid waste is sometimes combined with the liquid concentrate in order to reduce the possibility of leaching.

All the drums at Arlington are labeled according to their origin and type of material. This data is entered into a computerized system for future use.

Brooks emphasized that "Arlington is not at all similar to a land-fill disposal. It is more like a storage site. We can locate and destroy dangerous materials or we can recover valuable chemicals any time."

Brooks added that the best aspect of this system, aside from its obvious environmental value, is that it doesn't cost the taxpayers a dime.

Unlike the Hanford nuclear waste site, the bill for handling the waste is footed by industry, he said.



# Studies of Tacoma's bay show

By Andy Baldwin

When high concentrations of chemical pollutants were found in Tacoma's Commencement Bay last year, the researching team working for the National Oceanic and Atmospheric Administration (NOAA) were so concerned they conducted two follow-up studies.

These studies, along with the original findings, were released last April in a NOAA report. The report revealed that Commencement Bay had high levels of a large number of chemical pollutants.

Among the toxic chemicals found were:

- Chlorinated organic compounds often used in pesticides.
- Saturated and aromatic hydrocarbons often found in petroleum products.
- Metals like arsenic, copper and lead.

"Pollution in sediments in Commencement Bay has left us off balance," said Don Malins, a Seattle University scientist, who heads the NOAA project.

"The Hylebos and Blair waterways of Commencement Bay have quite a number of pollutants."

According to the NOAA report the effect of the chemical pollutants on the marine life of the Bay could be quite extensive.

The report states that the scientists expect to find increased levels of metals in the marine life of the bay. Aromatic hydrocarbons are "available" to a variety of marine life, the report said, and bottom fish collected from the Hylebos Waterway were found to have a "considerable accumulation" of chlorinated organics in their livers.

The chemicals appear to be making significant numbers of the soles and other bottom dwellers ill.

Malins said, "There are a number of diseases [in marine life of Commencement Bay] which we believe are caused by chemicals."



Photos by Hans Rysel

**Above:** Public landfills such as Tacoma's will no longer accept dangerous waste from industries after November 19.

**Right, opposite:** Port of Tacoma testing sites for the NOAA study completed in June, 1980. The storm drains and holding pond shown were found to contain high levels of unidentified aromatics, including benzene, a known carcinogen.



The Environmental Protection Agency (EPA) has also conducted studies on Commencement Bay and its waterways.

Early last June, the EPA, at the request of the NOAA, set out to find the potential sources of chemical pollutants in Commencement Bay. The EPA took waterway samples and on-shore samples from the Hylebos and Blair waterways, the two waterways in which NOAA had found especially high concentrations of chemicals and pollutants.

In late August of this year the EPA published the results of its studies.

Among its findings:

- Copper and selenium concen-

trations were above the EPA's maximum criteria level for salt-water aquatic life throughout both waterways.

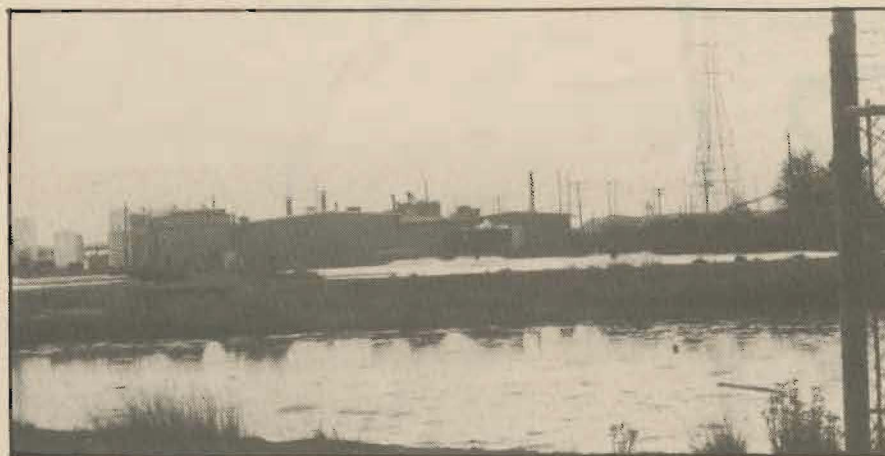
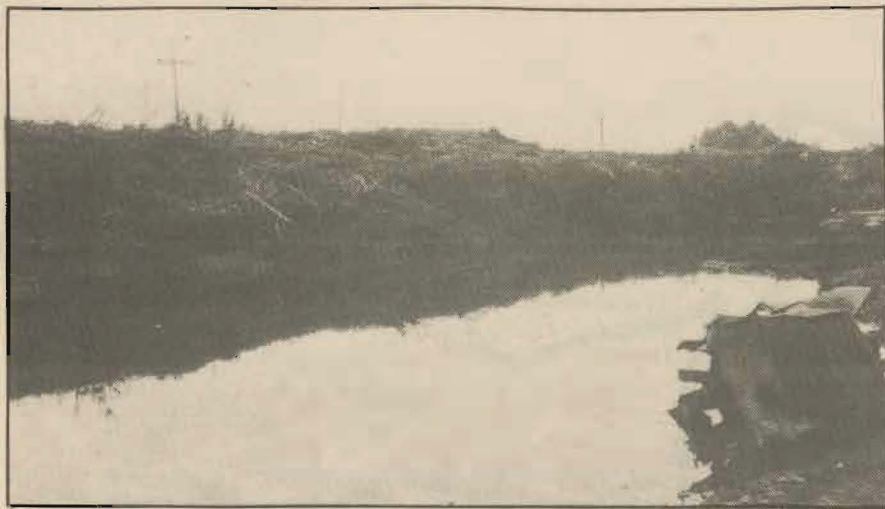
- Large quantities of unidentified aromatics were found in several waterway samples.

- One waterway sample had a high concentration of chlorinated organics.

- Shore samples taken from the property of Hooker Chemicals and Plastics Corporations and Penwalt Corporation revealed high concentrations of copper. One sample taken from a storm drain on the property of Pennwalt showed a concentration of copper more than 20 times the EPA's maximum criteria level for salt-water aquatic life.



# toxins present



- Shore samples taken from the property of Pennwalt revealed high concentrations of arsenic. One sample taken from a drain pipe on Pennwalt property showed a concentration of arsenic of more than 179 times the EPA's maximum criteria level.

- Shore samples taken from Pennwalt property revealed high concentrations of chromium, mercury and selenium.

- High concentrations of aromatics were found in samples taken from a Pennwalt storm drain, a Reichhold Chemicals storm drain, a Taylor Way Drive storm drain (which consists of Kaiser effluent and local drainage), and a storm drain along the Port of

Tacoma Road.

- High levels of chlorinated organics were found in a Hooker effluent as well as in a shore sample taken from the Pennwalt property.

- Due to the high concentrations of chemicals found in shore samples taken from Pennwalt property the EPA did additional tests on the Pennwalt samples.

The tests found chemicals representative of the pesticide group, including 4,4 DDT, Alpha BHC, Lindane and Endrin.

Polychlorine biphenyls, cancer-causing compounds, were also found in the Pennwalt samples.

High concentrations of chemicals from bank runoffs does

not necessarily mean that these runoffs are endangering the health of the bay, according to John Osborn, Environmental Engineer for the EPA's surveillance and analysis division in Seattle.

"Bank runoffs are not concentrations in the waterways," he said.

Osborn said that in some cases a high concentration of a chemical found in a bank runoff was not reflected in the waterway by a high concentration of the same chemical. As an example, Osborn points out that the high level of arsenic found in shore samples taken from the Pennwalt property were not paralleled by a high level of arsenic in the waterway.

However, Osborn points out that even small amounts of chemical pollutants going into the bay could cause a problem in the long-term.

"If the waterways settle out there is a potential for a concentration over a period of time," said Osborn.

NOAA and EPA are continuing their studies. NOAA plans to release a new report sometime next year. The EPA is continuing its screening surveys.

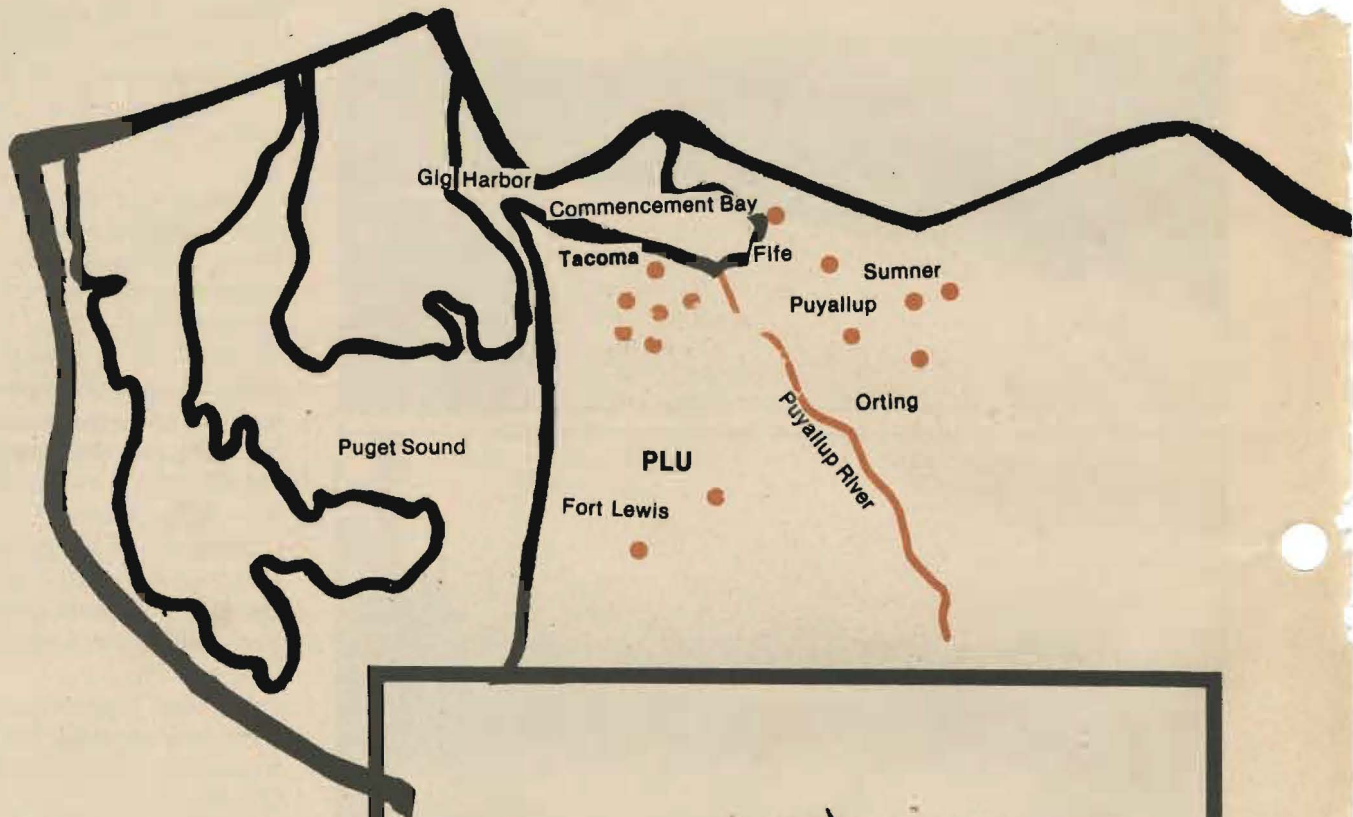
"A lot of chemicals are there that we can't identify," said Osborn.

"We're trying to get closer so we can intensify," he said.

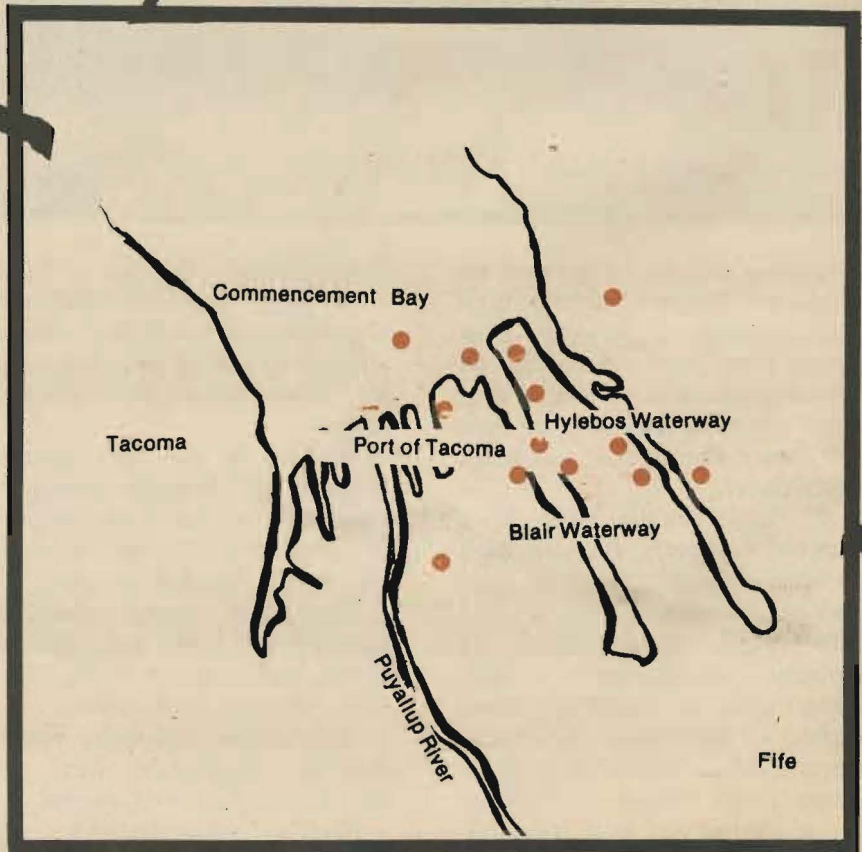
Meanwhile there is no possibility of legal action against any of the companies. The criteria levels established by the EPA are not laws.

According to Osborn the criteria levels for salt-water aquatic life are "concern levels" not regulations.

"This data is an indication of the presence of chemicals that are on our list of chemicals of concern," said Osborn. "We can't defend it yet in court."



**Inset: Tacoma's Industrial waterfront on Commencement Bay, including potential sites of hazardous waste.**





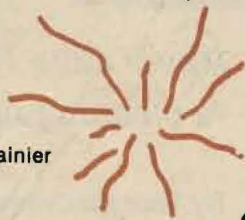
*Left:* Environmental Protection Agency identification of potential hazardous waste sites in Pierce County, including generators, handlers, or disposers of hazardous waste.

In Washington, 125 such sites have been identified. In the EPA's region 10, (Washington, Oregon, Idaho), an estimated 2,700,000 MT (metric tons) of hazardous waste were disposed of between 1940 and 1975, and as much as 130,000 MT of that waste may be distributed in unidentified landfills, said an EPA study.

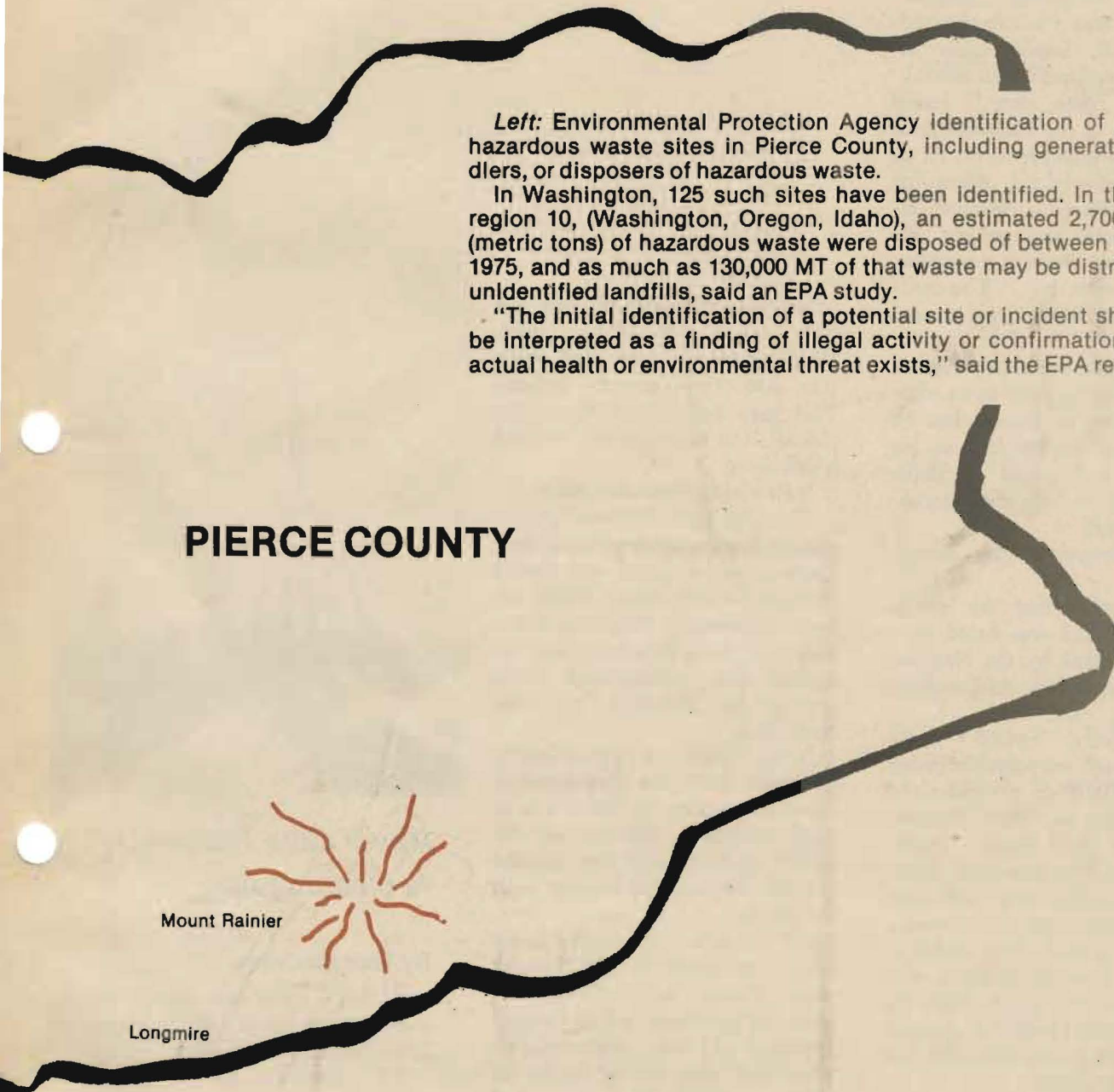
"The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists," said the EPA report.

# PIERCE COUNTY

Mount Rainier



Longmire





# Local officials say Tacoma has

## No 'Love Canal' in Tacoma

Contrary to popular accounts the Tacoma area is not in the middle of a toxic chemical crisis, according to one local health official.

"It's not even close," stated Doug Pierce of the Tacoma-Pierce County Health Department. As an environmental control officer for the county, Pierce is routinely involved in waste management. He said that toxic waste is a problem to be dealt with, but, "The chances of another Love Canal around here are zero."

The situation has been presented as out of hand by local news sources, according to Pierce, but he maintains that this just isn't so. He responded to several incidents which seem to indicate environmental hazards:

### *Is Commencement Bay severely polluted?*

The assertion that the Bay is severely polluted was based on a 1979 study done by the National Oceanographic and Atmospheric Association, said Pierce.

The study found toxic chemicals such as polychlorinated biphenyls, (PCB's), pesticides and heavy metals in high concentrations in the water. 'High' meant 'more than expected' Pierce said, and the judgement was made without proper control to compare the results against. This makes it difficult to draw any definite conclusions from the study. Both the Environmental Protection Agency and the NOAA recommended further testing, he said.

### *Have toxic waste contamination given Bay marine life lesions and illnesses?*

These lesions were found in the livers, bladders and pancreases of bottom fish only, said Pierce. There was a two percent occurrence

of lesions in these fish, he said, but fish tested in Case Inlet, Washington, (a non-urban bay), also had two percent lesions. This may be normal Pierce explained, but at this point nothing is definitive.

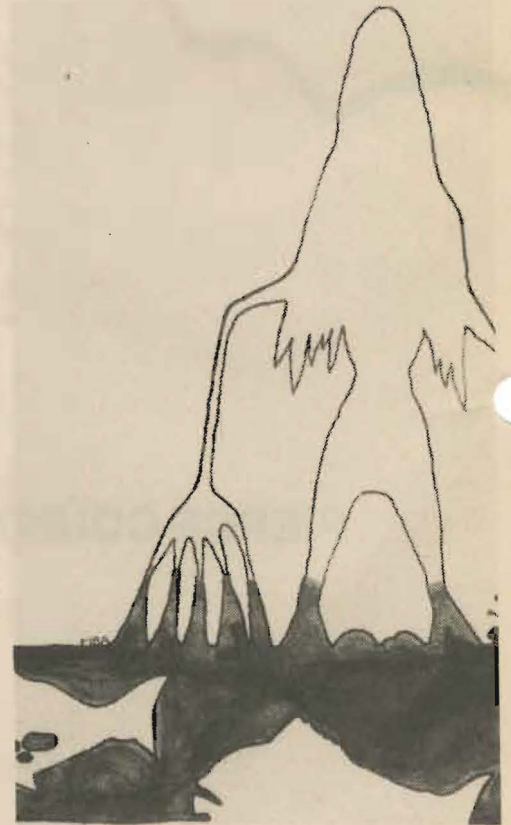
### *Is Parkland groundwater polluted?*

The idea that Parkland groundwater is polluted was based on a Department of Social and Health Services (DSHS) study which has been considerably disputed, Pierce said. The study concluded that the aquifer (the underground water supply) for Parkland was contaminated.

John Noble, a groundwater geologist from the Homeowners Association, said the DSHS's sampling techniques did not test the aquifer at all. He said they had not sampled deep enough to even reach the aquifer.

All this is not to say that there isn't a problem in the Tacoma area, Pierce said. There are chemical pollutants which demand attention and will remain unidentified until after further studies according to Pierce. But until current studies are completed in November, it is no use speculating, he said. It is being watched and dealt with by government agencies and industry, he added.

It just takes time, he said.



## Mayor says Tacoma is cleaning up

### By Tom McCrady

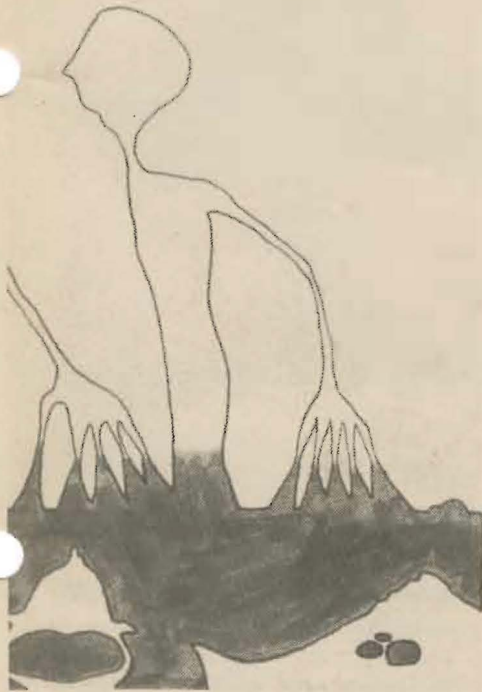
"I don't know that Tacoma has a stigma for being dirty," Mayor Mike Parker told the *Mast*.

"It certainly has a stigma locally, but on a national basis Tacoma is one of the few cities in the U.S. that had an increase in population outside of the sun belt," he said.

Parker said that Tacoma had shown "reasonable success" in



# no hazardous waste problem



getting Tacoma cleaned up. There has been a "marked improvement in air quality," he said.

But the "Tacoma aroma" is not the only indicator of pollution.

The dumping of toxic wastes in illegal sites is of major concern to local citizens and authorities.

"Part of the problem is that the effects of what [the industries] did in the last twenty or thirty years

are with us. And so we are undertaking a rather massive study of Commencement Bay that I've put the director of the Health Department (Pierce County) Dr. Charles McGill, in charge of coordinating the efforts," Parker said.

"We are going to look at all the toxic wastes that have been dumped into the bay for almost a generation in order to see if we have to do a massive clean-up or whether over time those conditions will improve themselves."

The study according to Dr. McGill is a group of studies individually conducted by the Army Corp of Engineers, the Federal Department of Fisheries, the State Department of Ecology, the Department of Social and Health Services, and the Environmental Protection Agency.

"Every mineral you can think of is in the bay," McGill said. "But the samples have not even approached the levels at which they are to be considered a health hazard. There are no levels that I can see that are harmful to a person. Sure, you can swim in the bay."

McGill said he hopes to get the representatives from the various government agencies together by the end of October.

The city sewer system and city

dumps are also possible locations of hazardous wastes. However, Dave Hufford, assistant supervisor for treatment plant operations, said since Tacoma has installed new monitoring devices they have not detected unreasonable amounts of toxic chemicals in these areas.

Parker said, "Anyone on the Port using the new sewer system is personally responsible for the quality of fluant that goes into the system. They have to follow guidelines."

Hufford said the new monitoring devices will be able to detect pollutants in the "parts per billion" and will "make sure industries don't put out anything that's going to harm the treatment plant or our environment."

"We had industrial pre-treatment going on before the Feds said we had to. We do it for our own protection," Hufford said.

Parker did not deny that industries were dumping toxic chemicals in city dumps, but he said, "we prohibit it from being dumped in city dumps. We enforce the rule to prevent that from happening."

Parker said the problem with toxic chemicals is not with the major industries, but with the "fly by night operators that go into business to dispose of hazardous waste and then do not do so."

"And we've had problems on occasion," Parker said, referring to a local resident, Buffalo Bill Murphy, who sold drums of toxic chemical sludge for creosote.

Parker said the city has "strong enforcement and approved plans" for the major company's disposal of toxic wastes. "But," he said, "we don't have any toxic chemical dumps in the city."



*Costs increasing for waste disposal*

# Corporations view RCRA with

**By Sharon Storey**

The national environmental legislation Resource Conservation and Recovery Act (RCRA) and the Environmental Protection Agency have received mixed reviews from Tacoma area corporations.

Most corporations agree that the disposal of hazardous waste should be controlled.

"Once waste is generated it's in the environment and it becomes a question of finding an environment more acceptable to the people in that environment," said Carl Virgil, Plant Works Manager of Tacoma's Hooker Plastics and Chemical plant.

However, some question the practicality of the legislation.

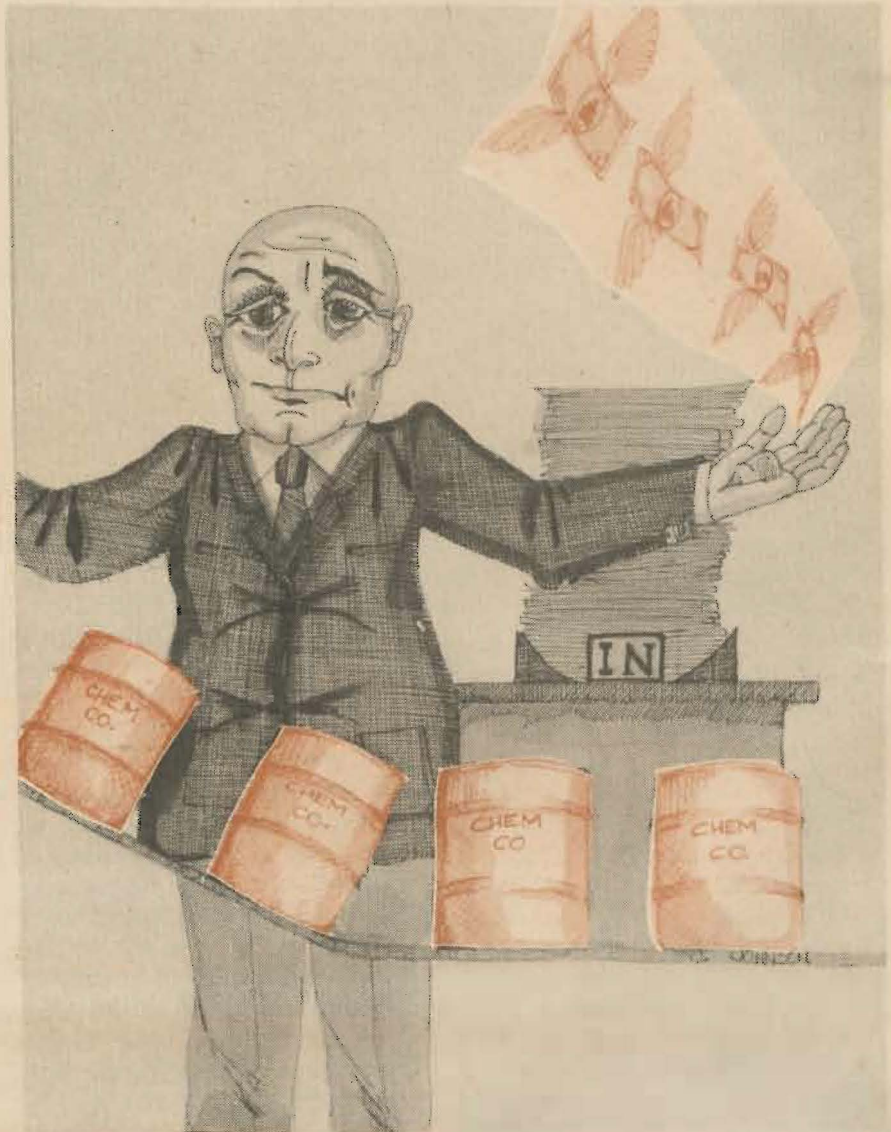
"RCRA is a massive law with no direction," said St. Regis' Technical Superintendent Carlos Henry. He claims that some regulations can be interpreted six to 10 different ways and they're not sure which interpretation to use.

RCRA leaves the authority to implement and enforce the legislation to state officials, which

**"RCRA is a massive law with no direction. Some regulations can be interpreted six to 10 different ways."**

in Washington means the Environmental Protection Agency, the Department of Ecology (DOE) and the Department of Transportation (DOT). Henry states that dealings with so many levels of hierarchy will probably be confusing and inefficient.

The St. Regis mill produces little hazardous waste, most of which is polychlorinated biphenyls



the paper making process itself, said Henry. This waste is a known carcinogen which under state law must be specially handled.

St. Regis ships the PCB's to the EPA-approved disposal site in Arlington, Oregon. Henry said that because of the limited space available at the Tacoma plant site and the inefficiency of non-PCB generators of comparable size, the Tacoma plant will continue to produce this hazardous waste.

The state of Washington will have its own legislated manifest governing the transportation and

disposal of waste, by April of 1981, according to a recent DOE senate hearing in Olympia. This legislation will make the distinction between dangerous and extremely hazardous waste.

Dee Raval, Environmental Affairs supervisor for Pennwalt Corporation, said he believes that the state law, because of these distinctions, "Would be a good model for the EPA to follow."

According to Raval, Pennwalt produces chlorine in gas and liquid forms, caustic soda, hydrochloric acid, and sodium chloride. Most of



# mixed emotions

their hazardous waste, said Raval, is in the form of a sludge, used asbestos fibers mixed with mud, which has been stored on the plant site in a manner which Raval did not disclose.

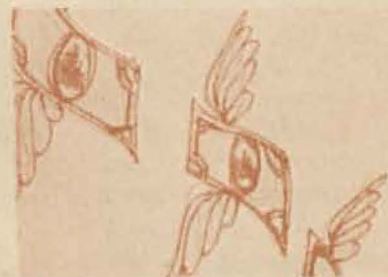
Because Pennwalt does not transport the waste, it has not had to comply with DOT regulations. The company has not yet completed the testing required to identify all its hazardous waste according to Raval.

Implementation of RCRA will be expensive for many companies. Bernie Martz, Resident Manager of Boise Cascade's West Tacoma mill in Steilacoom, said that the plant spends \$250,000 a year for testing. The tests prove that the plant's effluent (liquid waste) is non-toxic and after aeration can be drained into the Sound, he said. The solid waste produced is burned as fuel.

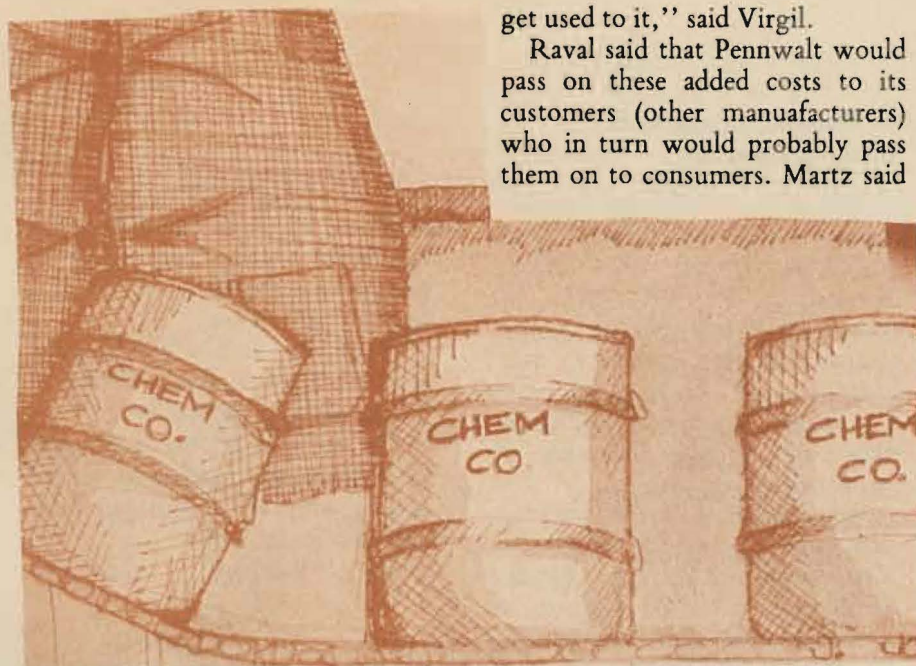
"Burning the sludge is a break-even process but it saves the cost of hauling it away," Martz said.

Virgil predicted a substantial amount of additional cost for Hooker to dispose of its waste as a result of RCRA, specifically transportation costs. He put the figure at "Three to four times our present costs, approximately \$500,000 to \$1 million."

Hooker produces many of the



**Hooker Plastics and Chemicals Co. will be adding \$500,000 to \$1 million to their waste disposal costs as a result of RCRA.**



**"If we don't want the problems of waste disposal we're going to have to do without the products which create waste."**

same chemicals as Pennwalt with the same asbestos waste. Pennwalt estimates a minimum added cost of \$10,000 to \$20,000 annually on top of \$500,000 initial capital investment, and Raval estimates a maximum of \$60,000 a year and \$2 million initially, depending on the amount of waste defined as hazardous.

In the state of Washington, the cost of the paperwork in complying with RCRA will be nominal in comparison to costs involved with transportation and treatment, as compared to other states, said Virgil, because Washington already has legislation to regulate waste.

"The additional paperwork will be frustrating in its initial stages, like anything that is new until you

get used to it," said Virgil.

Raval said that Pennwalt would pass on these added costs to its customers (other manufacturers) who in turn would probably pass them on to consumers. Martz said

that environmental protection is good but there comes "a point at which we (the consumers) can't afford it any more."

The corporations spoke positively of alternatives to the waste problem. Martz spoke of beneficial reuse of waste.

"If you don't throw it away it isn't waste," said Martz referring to the plant's use of waste as fuel.

Virgil said that the liability is too great for the type of waste produced by Hooker to be let out of the company's control. He stated that the generator of the waste is legally responsible.

Hooker is, however, working on reducing the amount of waste they produce through the use of alternate processes. This development will unfortunately take several years, he said.

Technology cannot at this time solve the entire problem said Martz.

"If we don't want the problems of waste disposal we're going to have to do without the products which create waste," Martz said.



# Safe transportation is an important issue in waste management

By Tom McCrady and  
Marci Ameluxen

Part of the Resource Conservation and Recovery Act (RCRA), going into effect November 19 will end the possibility of indiscriminate dumping of hazardous material by transporters. It deals with the regulation of transporters of hazardous material from the point of generation to disposal.

The regulations for transporters were developed jointly by the Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT), according to a government report.

Transporters will be required to obtain an identification number, comply with the manifest system for tracking hazardous material and deliver the entire quantity of hazardous material to the facility designated by the generator on the manifest.

In addition, transporters must retain a copy of the manifest for three years, comply with DOT regulations pertaining to discharges or spills and clean up any hazardous waste spills which occur during transportation.

A major transporter of hazardous waste is the railroads. According to Kim Forman, public

relations manager for Burlington Northern, seventy percent of all hazardous material in the U.S. is transported by train.

"And we have a pretty good record," Forman said, referring to his company in particular.

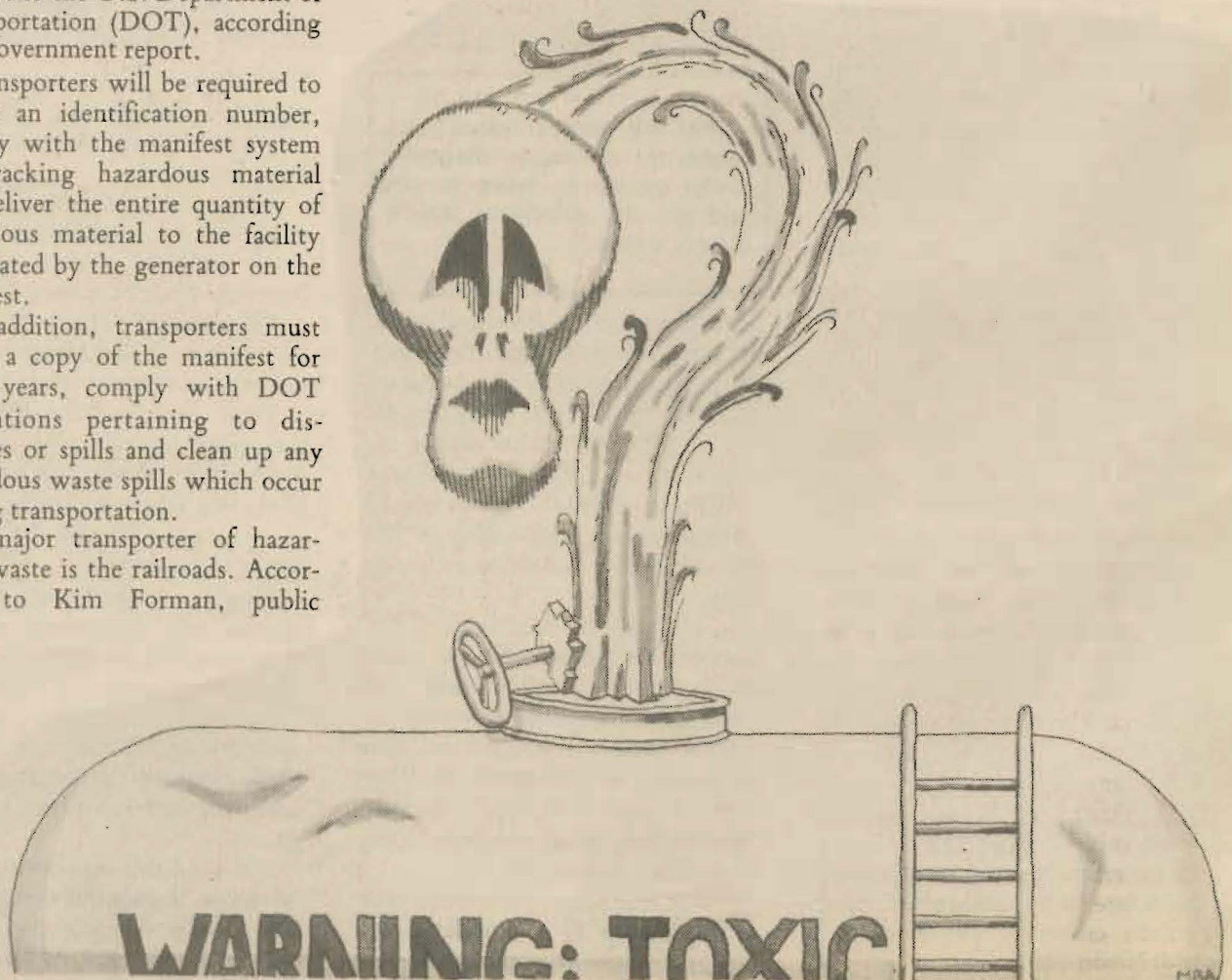
"In 1979, of all the Burlington Northern trains carrying hazardous wastes, only .07 percent were involved in an incident."

An "incident" could be

anything from a loose valve to an actual spillage, Forman said. Spillage made up .012 percent of all the accidents reported last year.

Burlington Northern carries hazardous wastes everywhere, Forman said. The rail covers 19 states with 25,000 of track. Forman did not know specific locations to which the waste is taken.

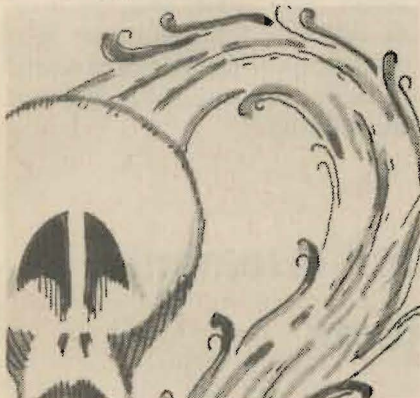
Transporters labeled "common





carriers" by the DOT, including Burlington Northern, must accept for transportation anything that meets DOT regulations involving packaging or labeling, said Forman.

This involves hazardous waste which can include anything from ink to toxic chemicals.



RCRA will mean more work for truck carriers too, according to Al Simpson, vice-president of operations at Inland Transportation, Inc.

"I have mixed emotions about the law [RCRA]. It will mean a lot more paperwork for carriers. It's good to know where all the waste goes, but you can go overboard on it too. I wonder if all the agencies who ask to see copies [of the manifest] are really going to read all of them," he said.

But Rod Garritson, resource person for Resource Recovery, said he thinks the RCRA law is good because it will force generators of waste to describe and determine what is in their waste.

"Companies have been vague about what's in their waste. It might be a company secret or they might not know what it is."

Garritson said that Resource Recovery has had some problems with this. For instance, the company picked up 5,000 gallons of liquids from a company, and when Resource Recovery brought it to the waste disposal site in Arlington, Oregon, the site officials refused it because it was found to be cyanide. The company had to refine the chemical out of the waste at a substantial loss, Garritson said.

Garritson said that a lot of

smaller waste producing corporations and carrier firms will fold because they won't be able to adjust to the increase in paperwork and record-keeping required by RCRA.

"It's like 'Future Shock,' there's no way to keep up with all the new things that happen so rapidly," he said.

He added that Resource Recovery would be increasing its rates as a result of RCRA and the added work it causes.

All three of the carrier firms mentioned here and Burlington Northern train their employees in transporting hazardous materials although it is not required by law.

For the purposes of liability it is much better for the company, said Al Simpson.

"If a driver puts a chemical in the wrong tank, the company will lose a lot of money. If you're gonna stay in business you'd better have trained drivers," he said.

Ken Troost, terminal manager at Widing Transportation, Inc., said his company's drivers are trained to handle the commodity they carry, but are not in a position to treat the waste in case of an accident. But the drivers know who to call and what the hazard is, he said.



All three companies said they will refer to the national spill response service ChemTrec in case of large accidents. Resource Recovery holds safety meetings once a month and sends news letters to their employees concerning handling of hazardous wastes, said Garritson.

Burlington Northern lets their people "know exactly what they

are carrying," Forman said. "The conductor is told everything about the waste, how to handle it."

Forman said that 1980 statistics concerning accidents will probably show an increase because of an accident last January near Ridgefield, Washington. A massive landslide plowed into a moving train and caused a chlorine leak which killed two Burlington Northern employees, he said.

However, Forman said Burlington Northern spends \$1 billion annually on maintenance, "trying to keep the tracks and cars in the best possible condition."

Though Forman did not know of the RCRA, he said "I don't think the railroad people haven't. I'm sure if there is to be any changes in our procedure, we will do it."

The Washington State Patrol is usually not involved with transportation of wastes by truck except to give the truck its routine check and make sure the paperwork is in correct order, according to Fred Owens, weight control officer for the Patrol.

There is no communication between the State Patrol and industries creating toxic wastes "unless its nuclear," he said.

If there is an accident involving a

truck carrying hazardous wastes the Patrol will go to the scene according to Owens. They will "contact headquarters who in turn contacts the pollution people. We keep people away from the scene," he said.

A truck found in violation of safety and paperwork regulations

*Continued on page 16*



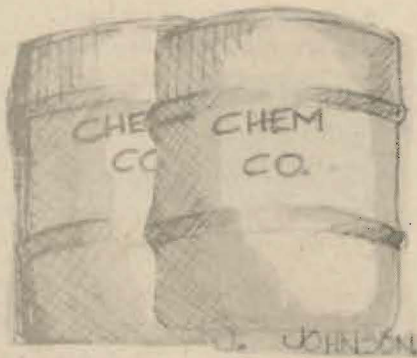
could be fined \$102 in Pierce County. Owens said that fine will increase to \$250 due to a new law, although he did not know specifically what the law was.

The State Patrol is "pretty prepared" to handle a hazardous waste accident, Owens said. All officers are trained, though he said not all carry gas masks or protective equipment.

"But any officers going to the scene would have any needed gear," he said.

The fire department also goes to the scene of a hazardous material accident. Jim Perish, a captain with the Tacoma Fire Department, said he attended a three week course in Denver last June on the handling of toxic wastes. He also attended a similar course sponsored by the Fire Department Academy in Maryland.

Perish said the fire department has developed a program using ChemTrec and that the department has some protective equipment, "but sometimes we need more. Our neck is exposed and so is part of our face."



Perish said that Washington has "pesticide teams who will respond to a pesticide spill. We have chlorine teams who will respond to a chlorine spill. It makes it a lot more economically feasible to have these than to have each department have all the special equipment."

Perish said that communication between the fire department and industry has been a problem.

"It needs working on. I understand their position more since the course in Denver, and I can sym-

pathize with them some, but I think they're too reluctant to help us as much as they can. They can do a lot more.

"I think they're apprehensive because they're afraid to get their toes stepped on. When there's a spill, there's usually a fine involved. They are just like you and me, they don't want to pay the fine if they can help it," he said.

"So, a lot of time they cover it up. That's our problem. They aren't as open to us or the public to

check them out. As far as we are concerned, we don't fine them, we are there to help them."

The fire department usually contacts a local contractor to clean up the spill. "Whoever spilled the waste is financially responsible," Perish said.

"Most companies comply," Perish said. "Most will tell us of an accident. But sometimes they cover it up. It has happened several times in the city. We find out second-hand."

## Environmental Impact Statements Check affects of projects

By Cindy Wolf

Environmental Impact Statements (EIS) are often heard of but rarely do plain folk know what they are or when one is required.

Filing an EIS began when the National Environment Policy Act was passed.

This policy act was also passed at the state level, so there are two levels of impact statements.

According to Dan Cagle, Environmental Review Official of the Pierce County Planning Department, county statements have to be filed for re-zones, large lot divisions, comprehensive plans and unclassified use permits.

Unclassified use permits are miscellaneous listings such as dump sights, bowling alleys, parks and churches.

Statements are an in-depth review of any possible future effect that a project may have on the environment, according to Cagle and must be obtained by promoters of any project that might have such an effect.

A preliminary check list of 15 questions must be answered by promoters of a project and examined by county officials to determine if the project warrants an EIS.

Public awareness is made available through public hearings

and newspaper publications, according to Richard Gilmur, urban planner for Tacoma.

Gilmur also said that reviewers mail notices to property owners within 400 feet of the project.

As for the effect of an EIS on chemical waste dumping, Cagle said that he has never hear of any in the Pierce County Area.

Cagle also said he did not know anything about the EIS required to update the ASARCO smelter in 1975. He thought that it would all be handled at a national level.

Gilmur said he thought the Puget Sound Air Pollution Control Agency had handled the case along with the Department of Ecology.

Tacoma makes all its own decisions about the significance of impact a project will have on the environment. If the Port feels the project will have great impact it will hire a consultant and file an EIS.

Gilmur said that if a Port project is within 200 feet of the bank from the ordinary high water line, that a Shoreline Permit is required

Gilmur handles these permits for the city as well as reviewing impact statements.

The Department of Ecology makes the final approval of a Shoreline Permit, Gilmur said.