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OVERSIGHT—RESOURCE CONSERVATION AND RECOVERY ACT

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HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

HOUSE OF REPRESENTATIVES

NINETY-FIFTH CONGRESS

SECOND SESSION

OCTOBER 30, 1978

Serial No. 95–183

Printed for the use of the
Committee on Interstate and Foreign Commerce



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OVERSIGHT—RESOURCE CONSERVATION AND RECOVERY ACT

MONDAY, OCTOBER 30, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 2123, Rayburn House Office Building, Hon. Albert Gore, Jr., presiding (Hon. John E. Moss, chairman).

Mr. GORE. The subcommittee will come to order.

In America last year, an estimated 92 billion pounds of hazardous wastes were dumped into the ground. This amount increases by 8 percent each year. Of deepest concern to me and to this subcommittee are estimates that at least 90 percent of these hazardous wastes are disposed of improperly, unsafely, and irresponsibly. Many of these dangerous substances end up in our air, our food, and our drinking water.

Hazardous waste may be the single most significant environmental health issue of this decade. Many Americans are justly concerned about the problems of disposing of nuclear waste. Yet total nuclear wastes produced to date are estimated to be well under 100 million pounds. By contrast, 92 billion pounds of nonnuclear waste are generated each and every year; and these wastes are disposed of cavalierly.

America has been pockmarked with thousands of cancer cesspools—and EPA drags its feet to avoid facing the magnitude of this threat. Rusting and busted 55-gallon drums are not a sensible final resting place for powerful poisons and carcinogenic industrial chemicals. Already, many sites have caused tragedy, leaking toxic substances into our environment and water supplies; we are reminded of Love Canal, N.Y.; Toone, Tenn.; Louisville, Ky.; Deerfield, Ohio; Alexandria, Va.; and Dover Township, N.J. The list is long, even though incomplete.

Recognizing the seriousness of the problem, Congress passed the Resource Conservation and Recovery Act in 1976. This legislation called for the development of regulations to identify and manage this hazardous waste problem. The Resource Conservation and Recovery Act is a strong law with a clear mandate directing the U.S. Environmental Protection Agency to bring this problem under control.

EPA was given 18 months to promulgate regulations which would bring this health-threatening environmental problem to an end. In March of this year, just 1 month before the deadline for

these regulations, an EPA official, Deputy Administrator Barbara Blum testified before a House Appropriations Subcommittee that EPA was on schedule. When asked, "Are you on target and do you plan to have the regulations issued * * * by the statutory date?", Deputy Admnistrator Blum replied, "Yes." But the regulations were not issued in April 1978. We now learn that the regulations will not be promulgated until January 1980 at the earliest.

Delays are costly. Each month the costs of handling wastes rise dramatically. For each month EPA delays in issuing the regulations, nearly 8 billion pounds of hazardous waste are generated—much of it, if not most, will be disposed of improperly. By the time EPA expects the regulations to be in place, and estimated 160 billion additional pounds of hazardous waste will have been produced and disposed of in an ad hoc fashion.

The cleanup costs of improperly disposed of materials are astronomical. Of significance to the public and this subcommittee is the fact that cleanup costs, which often range in the millions of dollars, far exceed the costs of proper disposal. For example, one EPA study has estimated that the cost of properly disposing of wastes in Dover Township, N.J., would have been only one third of the partial cleanup costs. We cannot afford to wait much longer for tough, comprehensive rules which will eliminate the flow of hazardous substances into our environment.

At today's hearing we will: Explore the reasons for EPA's delay in promulgating RCRA regulations; try to determine whether EPA's current projected deadline for these regulations of January 1980 is appropriate; ascertain what progress EPA has made in drafting rigorous regulations; and explore what steps EPA has taken to inventory, monitor, and take action on potentially dangerous waste sites.

To address these issues, we will hear initially from two Members of Congress, Hon. Henry J. Nowak and Hon. John J. LaFalce, both from New York State, who have been particularly concerned about the dangers of hazardous waste because of the events at Love Canal, N.Y., where hundreds of families had to be relocated because a closed dump began to leak a variety of toxic chemicals. Mr. Nowak's concerns about this issue triggered today's hearing. We will also hear from Christine and Woodrow Sterling from Toone, Tenn., whose water supply has been contaminated by pesticide waste.

Mr. Hugh Kaufman, Manager of the Assessment Program, Hazardous Waste Management Division of the Environmental Protection Agency, will be asked to describe how EPA has been responding to situations like Toone, Tenn. Panelists include Mr. Leslie Dach of the Environmental Defense Fund, Mr. George Wolff of the Illinois Attorney General's Office and Dr. Dana Davoli of Citizens for a Better Environment, who will discuss public and State government concerns about EPA's delays. They will also discuss their concerns about the quality of the most recent draft regulations. And finally, we will call upon EPA officials, Thomas C. Jorling, Assistant Administrator for the Office of Water and Waste Management; Steffan W. Plehn, Deputy Assistant Administrator for Solid Waste; and John P. Lehman, Director of the Hazardous Waste Management Division of the Office of Solid Waste, who have

the responsibility for implementing the RCRA law. We will ask them to explain why they have failed to promulgate the regulations, why they have failed to identify potentially hazardous sites and why they have failed to use their authority to vigorously enforce the law.

The threat posed by hazardous wastes may be the environmental sleeping giant of this decade. Hundreds of billions of pounds of these toxic wastes are now polluting our environment and jeopardizing public health. EPA has been charged with the responsibility to solve this problem. And yet, we learn—from Senator Proxmire—that EPA has spent close to $40,000 in a 2-year study to find out that runoff from open stacks of cow manure on Vermont farms causes the pollution of the water in nearby small streams and ponds. What are EPA's priorities? What has EPA been doing since the RCRA was enacted? How soon can we be assured that EPA is on the right track and has made progress in vigorously attacking this problem?

Our first witness today is the Honorable Henry J. Nowak of New York.

STATEMENT OF HON. HENRY J. NOWAK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. NOWAK. Mr. Chairman, thank you very much. First I would like to commend you and the subcommittee for your special consideration of my request to conduct this hearing and refocus national attention on this complex and critical problem of hazardous waste disposal. I am sure you share my hope that today's hearing—and future congressional oversight in this area—will accelerate the cooperative effort by the public and private sectors needed to deal with this sinister, multifaceted problem.

Second, I would respectfully request permission for inclusion in this hearing record of the complete text of the articles on hazardous waste disposal that appeared in the editions of the Buffalo Courier-Express between September 16 and September 26, 1978.

Mr. GORE. Without objection, it is so ordered. [See p. 6.]

Mr. NOWAK. As a result of the Love Canal emergency, the Courier-Express detailed reporter Michael Desmond on an assignment to trace the national scope of this problem. Several weeks and several thousand miles later, Mr. Desmond completed a series of articles that chillingly describe the breadth and depth of the hazardous waste crisis. Both he and the Courier-Express are to be commended for their public service in drawing attention to the gravity of the problem confronting us.

The Congress clearly recognized the severity of the hazardous waste problem in 1976 when it passed the Resource Conservation and Recovery Act. What the Courier-Express series pointed out, however, was that the Environmental Protection Agency has been intolerably slow in implementing this vital program. Worse, EPA's projected timetable envisions continuing its snail's pace approach to this problem.

This Nation cannot afford to wait until mid-1980 to begin a coordinated, comprehensive attack on this problem. The mishandling and improper disposal of toxic wastes that prompted the 1976 legislation continues today. This continues to threaten our environ-

ment and our health and is counterproductive to our efforts to expend billions of dollars to clean up our air and water.

I requested that this hearing be convened to get answers from EPA to several questions and to determine what can be done to expedite its issuance of all the required RCRA regulations. The Nation would like to know why EPA is more than 6 months late in issuing these regulations and what EPA can do to accelerate this already delayed process.

While the RCRA regulations would deal principally with current and prospective handling and disposal procedures involving toxic wastes, the Love Canal emergency has focused attention on another deadly aspect of this problem * * * the hundreds, perhaps thousands, of inactive and abandoned hazardous waste disposal sites that pockmark our Nation.

Another major question for EPA, therefore, is to detail what it is and is not doing about the inactive site problem. Does EPA already have adequate legal authority to fashion an effective program of dealing with inactive sites? Is further Federal legislation required? If so, what is being done by the agency to propose such legislation?

The Love Canal emergency raises some serious questions about how well equipped the Federal Government is to participate with the States and local agencies in dealing with the deadly serious problems that can arise in connection with inactive sites.

The fact that the Congress had to approve a special appropriation to provide $4 million to support the emergency cleanup in the Love Canal area clearly suggests that adequate authority and advanced preparation are areas of Federal participation that may need improvement. The Federal Government, through EPA, must develop a capability—a reserve of technical and financial resources—that can be made available quickly to deal with future Love Canals.

Mr. Chairman, these hearings should kindle a greater sense of urgency about coping with the hazardous waste crisis. This is a classic example of the maxim: "An ounce of prevention is worth a pound of cure." The sooner this new regulatory program is in place, the sooner we can put a cap on what has been a haphazard, often indiscriminate flow of poison into our environment. Expending our energies now, as quickly as possible, will undoubtedly save millions of dollars in long-term remedial work and eliminate countless threats to health and safety.

Simultaneously, we must also be concerned about the impact this Federal regulatory delay is having on efforts by the States to deal comprehensively with this problem. My home State of New York, for example, this year enacted the Industrial Hazardous Waste Management Act, whose implementation is triggered by the Federal regulations. The Buffalo Evening News, the other major daily newspaper in Buffalo, noted in a September 25, 1978, editorial:

> Obviously, however, New York's rules must comply with whatever standards EPA eventually establishes. Meanwhile, State environmental officials say they are hampered in contracting with firms for implementing safeguards because the latter are reluctant to undertake disposal programs so long as the eventual Federal rules remain uncertain.

If we expect a major State and local effort in this area, the Federal Government must exert more active leadership on this critical issue.

Mr. Chairman, unquestionably we all recognize the severity of the hazardous waste problem, a deadly legacy of our industrialized civilization.

I look forward to working with you, the subcommittee and EPA in hastening our search for solutions. This will be an expensive, long-term process and I hope today's hearing marks a new era in stimulating and sustaining it.

I would just like, while I have this opportunity, to compliment my colleague John LaFalce, in whose area the Love Canal exists. His work and his leadership have really stimulated the Federal Government and the State to take the actions they have taken on behalf of those people who have suffered health and now relocation problems. I think he has done a wonderful job and should be complimented for it as the leader in this effort.

[Testimony resumes on p. 65.]

[The articles from the Buffalo Courier-Express, referred to, follow:]

C-E Reporter Travels U.S. for Story

Michael Desmond, a reporter for The Courier-Express, has traveled 5,200 miles criss-crossing the country in the last several weeks to find out how and where the mountains and rivers of hazardous chemical wastes are being stored.

What he learned was that the nation is sitting on countless chemical time bombs that could go off without warning for generations to come. At stake, among others as yet unknown, are cancer, miscarriages, genetic defects, death.

"I'm appalled at the lock of knowledge on the part of government agencies as to what is going on," Desmond said, adding:

"Too many agencies of state government seem to be financed for show, rather than for effect in the field. As for the federal government, the Environmental Protection Agency is so snarled in its own bureaucracy that it is virtually powerless."

Veteran Reporter

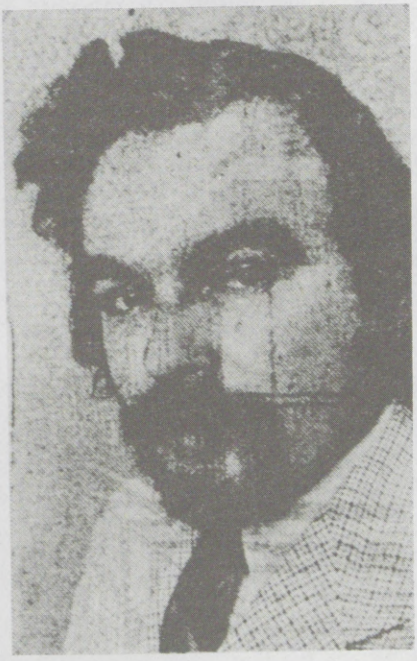
Desmond has been with The Courier-Express since 1969, except for a stint as deputy press secretary to New York Assembly Speaker Stanley Steingut, D-Brooklyn.

At present, he is a member of the newspaper's Special Projects team. Previously, he held various other editorial posts, including that of Albany correspondent.

A Buffalo native, he is a graduate of Canisius High School and Holy Cross College in Worcester, Mass. He also attended the University of Buffalo Law School and did graduate work at Buffalo State College.

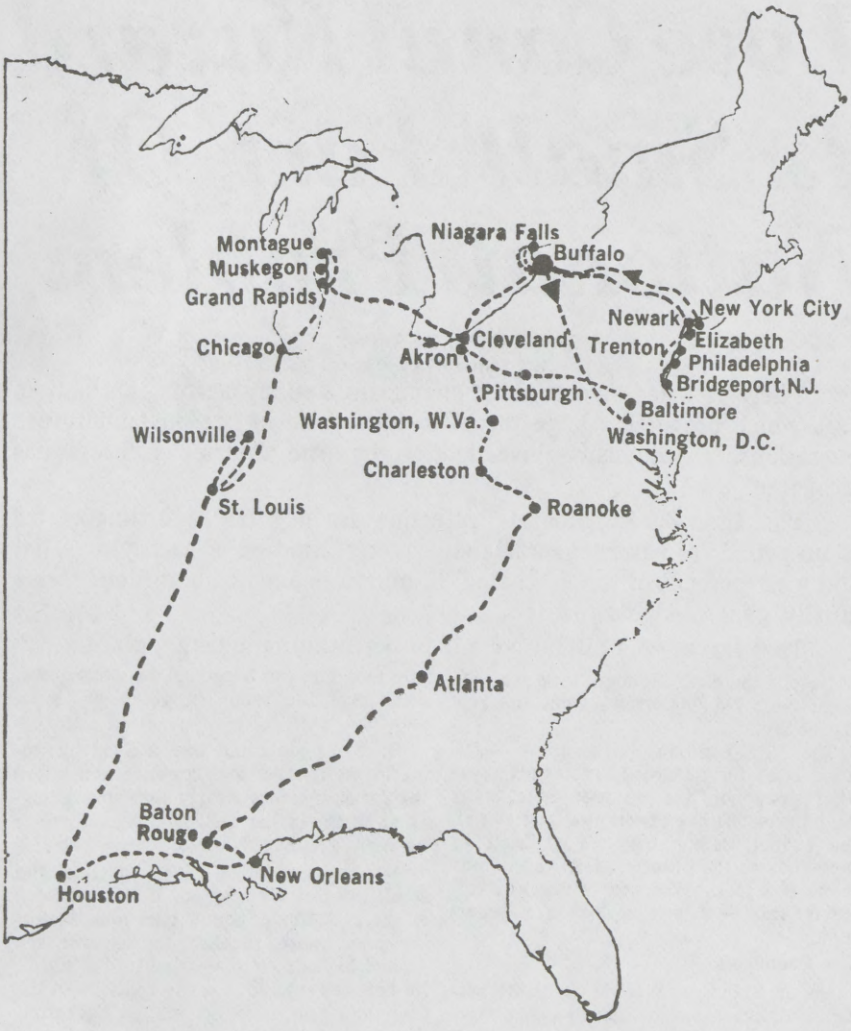
Won Awards

Outside of Buffalo, he has worked for newspapers in Lockport and Utica. He has won awards for news writing from the State Associated Press Association and the Buffalo Newspaper Guild.



Michael Desmond
... Courier-Express reporter

To date, Desmond's pursuit of the scandalous hazardous waste story has taken him to Washington, D.C., Cleveland and Akron, Ohio, Washington and Charleston, W. Va., Baton Rouge and New Orleans, La., Houston, Texas, Chicago and Wilsonville, Ill., Muskegon, Montague and Grand Rapids, Mich., Bridgeport, Trenton, Newark and Elizabeth, N.J., Niagara Falls and New York City, Atlanta, St. Louis, Baltimore, Philadelphia, Pittsburgh, and Roanoke, Va.



The Journey of a Courier-Express Reporter

. . . 5,200 miles in pursuit of the toxic waste story

Love Canal Hazard Is Small Part Of National Problem

By MICHAEL DESMOND

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There is a sea of hazardous chemicals washing across this nation, a sea which provides a huge threat to the health of present and future generations, an extensive investigation by The Courier-Express has discovered.

The U.S. Environmental Protection Agency (EPA) estimates 5.6 billion pounds of hazardous waste is properly disposed of each year. That is only six percent of the estimated 92 billion pounds of hazardous waste actually generated each year.

That leaves 86.4 billion pounds to peril the nation's populace.

Despite the clear numbers they are really guesses: No one knows what the real figures are.

The EPA estimates there are 20,000 dump sites for hazardous materials operating now, but has no idea how many other thousands have been used and closed. The former dumps may be at least as dangerous as the present ones. And no one knows how long a "secure" dump site will remain safe — a year, a decade, a generation.

New Chemicals

No one knows what to do about the new chemicals produced by industry each year.

There are thought to be 1,000 new chemicals born each year, on top of the 70,000 which already exist, and no person or agency knows how to dispose of many of them safely and permanently.

In the Middle Ages, alchemists tried to turn base materials into gold. In a religious and superstitious age, the alchemists were feared because they were playing in a field reserved to God.

Today, scientists are also alchemists. They take oil and gas and water and salt and turn them into profitable chemicals and plastics and textiles.

Legacy of Poison

But, behind them, they are leaving a legacy for untold generations. The waste materials of an industrial age are seeping into the air we breathe, the water we drink and the land on which we grow our food.

Once, people could flee a flood by going to the nearest high grounds and watch the furious waters simply lash unavailingly at them. In the industrial age, there is no high ground: Witness:

—In an industrial area outside the small town of Washington, W.Va., workers at the L.B. Foster metal pipe manufacturing plant were shocked to discover the ground exploded if they tried to dig into it. No one was injured. Research disclosed the tract had been used in 1959 by Carborundum metal and radioactive ore from a zirconimum tube manufacturing plant. When Foster bought the site two years ago, it was a cornfield.

—At a road intersection in the farm country of central Ohio, near Akron, a visit by The Courier-Express found thousands of drums and tanks of chemicals sitting on a former strip coal mine. They contain everything from paint thinner to a complicated chemical used to make the deadly pesticides Mirex and Kepone. The site isn't even fenced.

—In the aging industrial city of Lowell, Mass., waste from a mismanaged waste treatment site is contaminating a river used downstream for drinking water. Chemicals found in the Merrimack river

include two chemicals which cause cancer in laboratory animals, chloroform and trichloroethylene.

—In Bayou Sorrel, La., a few weeks ago, a 19-year-old boy was killed when caustic chemicals he was dumping from a tank truck into a lake of chemicals reacted together producing a deadly gas. He died almost immediately. Government investigators were initially denied admission to investigate by the operator of the lagoon.

—Not far from Bayou Sorrel, a 100-square-mile area around Darrow and Geismar was contaminated with the toxic chemical hexachlorobenzene several years ago. The material was dumped on the land and cattle were contaminated after they grazed on grass growing out of the soil.

—Waste from the Rocky Mountain National Arsenal near Denver has contaminated 30 square miles of underground water, damaged 6.5 square miles of farmland and may have caused earthquakes. The Defense Department recently estimated it will cost $78 million to clean up the mess.

—In Muskegon, Mich., a chemical company went broke. A subsequent site examination by a purchaser and the State Department of Natural Resources turned up thousands of drums of chemicals stashed in the woods behind the plant.

—In the desert of southwestern Idaho, near Boise, Wescon Inc. has taken over a Titan missile silo and turned it into a giant mausoleum for dangerous wastes. Already, giant blast doors intended to protect missiles against atomic blasts have been closed over several silos of waste chemicals, leaving them for the future.

—A "midnight hauler" dumped toxic chemicals called PCBs along 250 miles of road near Raleigh, N.C., in early August.

—In the Gulf of Mexico, along the Gulf Coast of Louisiana and Texas, drums apparently containing metallic sodium waste, have turned up in fishing nets. Some have exploded, wrecking nets and killing at least one fisherman.

—In the chemical industry center of Niagara Falls, an abandoned chemical waste dump in the city's Love Canal neighborhood began to leak cancer-causing chemicals less than 25 years after the best technology of the day was used to seal it. This is what prompted the extensive look by The Courier-Express into the entire hazardous waste situation.

Widespread Hazard

"I'm sure all the states are going to be facing these kinds of problems," commented Tom Cook, hazardous waste section chief for the Washington State Department of Ecology.

Hazardous materials can turn up anywhere. A once thriving fishing industry in Virginia's James River and in parts of Chesapeake Bay has been crippled by the intensely dangerous pesticide Kepone. This material leaked out of two manufacturing plants in Hopewell, Va. Some of it was simply dumped down the drain.

Subsequently, an EPA report cited Life Science Products Co. for its "careless manufacturing and disposal practices" which led to "deleterious health effects on the production workers" of the Hopewell sewage treatment plant.

Shaking Palsy

Many workers at the Life Science and the Semi-Works Plant of the Allied Chemical Corp., nearby, may never recover from a shaking palsy or the internal damage broght on in making the pesticide.

The pesticide Mirex has been found in significant quantities in Lake Ontario. Mirex and the Virginia pesticide were dumped from the Niagara Falls plant of the Hooker Chemicals and Plastics Corp. In addition, some scientists suspect natural action in the lake is turning some of the Mirex into Keponex.

Both are made from a chemical Hooker calls "C-56."

At a Hooker plant in Montague, Mich., a few miles north of Muskegon, waste material from the manufacture of C-56 was dumped on a site inside the plant not far from White Lake, a local source of water and recreation.

Found in Wells

The C-56 has turned up in wells in the immediate plant area and state officials say it is "migrating" toward White Lake.

Bruce Davis, executive vice president of the industrial chemicals group for Hooker, told The Courier-Express Mirex was never made, stored or handled in Montague. But, Mirex has been found in the dump site there.

There is speculation that somehow the C-56 molecules in the dump reacted together to form the dangerous Mirex.

More than two decades ago, the pesticide 2,4-D mysteriously turned up in ground water at Rocky Mountain arsenal. The 2,4-D apparently was produced deep in the earth from a variety of pesticide and chemical warfare wastes dumped into lagoons on arsenal grounds.

Deep Well

After the lagoons were found to be defective because they leaked, the Arsenal

drilled a well more than two miles into the ground and over a three year period pumped 165 million gallons of the wastes into the ground.

A series of earthquakes in the area began shortly after the waste began to be pumped down the well. Some scientists think the material in some way lubricated rock and caused the quakes.

This is the subject of wide dispute. However, EPA noted in a report on the waste problem at Rocky Mountain Arsenal, "Correlation of the injection of large volumes of liquid into the well with earthquakes in the Denver area caused this operation to cease in 1966."

Pays Piper

An industrial society is now paying the piper for the chemical wonders which surround us. Almost every chemical process leaves a waste in the air, the water or the land whose ability to accept what has been dumped has been overloaded.

The ability or the desire of too many governments to do anything about what is going on is doubtful. Without adequate federal regulation, states can attract industry by not checking too closely what industries are doing with their waste.

Some unscrupulous persons or companies proclaim themselves to be waste treaters or haulers and haul the waste off into the night, to dispose of the material by the side of the road, into regular garbage dumps or into scenic areas like the sandy forests of the Pine Barrens of southern New Jersey.

As long as industrial waste is produced, it has to go somewhere.

Perhaps the most truthful response to what happens then came from Burke Lokey, a public health engineer with the Radiation and Hazardous Waste Contamination Division of the Colorado Health Department.

He said, "We don't care as long as they take it out of state."

SUNDAY: EPA and government inaction.

Factory Wastes Heaviest in Dixie

EPA estimates the 14 largest waste-producing industries pour out 28 million tons per year. On o regional basis, the waste is distributed this way, in millions of tons and percentages:

Area	Amount	%
New England	1.2	4.2
New York and New Jersey	1.8	6.5
Middle Atlantic	3.8	13.6
Southeast	4.4	15.6
Middle West	6.3	22.6
Deep South	7.0	25
Great Plains	0.56	2
Rocky Mountain	0.588	2.1
Southwest and Hawaii	1.5	5.2
Northwest	1.0	3.7

The industries are battery making; organic chemicals, pesticides and explosives; inorganic chemicals; petroleum refining; paint and alleid products; textiles; rubber and plastics; primary metals; metal mining; petroleum re-refining; pharmaceuticals; leather; tanning and finishing; special machinery; and electroplating.

Rules on Wastes Due in 1980–EPA

Courier-Express Washington Bureau

WASHINGTON — New regulations governing the management, transportation and disposal of hazardous wastes will not be issued until January 1980, the Environmental Protection Agency announced Friday.

Staffen Plehn, deputy assistant administrator for solid waste, told a packed public meeting that although the law required them to be promulgated last April, the new regulations would be delayed for more than a year.

"If it were within our power we would want to have an operational hazardous and solid waste regulatory program in place immediately," Plehn said. "However, that is not possible."

Difficult Issues Involved

When asked what the agency had been doing for the past 18 months, Plehn replied that it was dealing with the "very difficult technical, financial, legal, and environmental issues" that the law provides.

He refused to answer any substantive questions dealing with the proposed rules themselves, restricting questioning to the limited issue of the timetable.

Congress passed the Resource Conservation and Recovery Act to deal with hazardous wastes. The law stipulated that the regulations should be promulgated "no later than 18 months" after enactment. The law was passed in October, 1976.

More Suits Threatened

The State of Illinois and two ecology organizations, Environmental Defense Fund and Environmental Action, have brought separate suits against EPA for failing to enact the regulations.

Other groups, such as the National Solid Waste Management Association, have put EPA on notice that they also will sue if the rules are not issued soon.

The new timetable is a lengthy list of meetings, hearings, reviews, and assessments. EPA officials said all the actions were needed to insure "full public participation."

"These are the best procedures we've been able to devise as an agency," Plehn said.

Plehn also said that the procedure could be shortened or lengthened, depending on what the agency's review of public comments shows.

Industries Back EPA

At Friday's meeting, representatives from industries who deal in hazardous wastes stood fully behind the expanded timetable.

"The promulgation date was set by Congress without understanding the difficulty," said Robert Harness of Monsanto. "Contrary to popular belief, the extended schedule will not mean open season for hazardous wastes."

Other industry representatives echoed Harness, saying they thought the timetable was "realistic."

They also complained, however, that the new regulations could end up being too broad. Harness said that "relatively innocuous wastes" would be included under the rules.

Some EPA sources said that the new timetable was drawn up because they were afraid to enact tougher rules in the emotional wake of Love Canal and similar situations elsewhere. They said they would prefer to take their time and wait until the clamor had died down.

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Chemical Glossary

Mirex — A pesticide used against fire ants. It is thought to cause liver damage and some animal birth defects.

Kepone — A pesticide used against ants and roaches. It is suspected as a chemical which causes cancer in humans. It is known to cause nerve disorders and liver damage in humans.

Chloroform — A chemical used at one time as an anesthetic. It is a cause of animal cancer.

Trichloroethylene — An industrial solvent. It causes cancer in laboratory animals.

Hexachlorobenzene — A byproduct of the manufacture of industrial solvents. It can eventually cause liver damage.

PCB — The term used to describe about 200 chemicals known as polychlorinated biphenyls. They are used in the electrical industry and in plastics. Manufacture is now banned. They cause liver damage to humans and have a variety of bad effects on fish and wildlife.

Sodium — A metal which explodes on contact with air. It is usually stored so it will not be so exposed.

C-56 — The trade name of the Hooker Chemicals & Plastics Corp. for hexachlorocyclopentadiene. Very little is known about its effects on humans but in industrail use very low exposure is recommended.

2,4-D — A herbicide sometimes used to keep down weeds in roadside ditches. It is known as 2,4-D because the full name is 2,4-dichlorophenoxyacetic acid.

BUFFALO COURIER-EXPRESS, Sunday, September 17, 1978

EPA Slow in Fighting Waste Peril

Behind Schedule In Writing Rules

Bury Now, Pay Later

Chemical waste dumps — past and present — are threatening the health of the nation's men, women and children — present and future. This is the second in a Courier-Express series of articles about the incredible situation. It deals with the inepitude of the federal agency which should be attacking the problem, but which apparently is not even aware of its seriousness.

By MICHAEL DESMOND

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The federal Environmental Protection Agency is so snarled in its own bureaucracy that it apparently has not yet realized it is at war with a deadly enemy: The mountains and rivers of toxic wastes that are threatening the nation's health and safety.

There is no other way to explain why fewer than 200 of EPA's nearly 11,000 employees have been mustered to fight the chemical foe.

The building in which the EPA is located in Washington, D.C., is a perfect match for the agency — almost totally confusing.

The structure, called the Waterside Mall, is a mixture of two towers with a low slung office and shopping section connecting them. Visitors are issued maps to try to help them around the complex and EPA workers admit they frequently get lost themselves.

EPA is a young agency with burgeoning responsibilities. It is supposed to do everything from checking gas mileage on cars to controling the dumping of hazardous chemicals into the environment.

Under Attack

Nearly everything the agency does is controversial. Industry attacks EPA because proposals are too expensive. Environmentalists attack EPA because the agency isn't moving fast enough. Citizens attack EPA for not doing something about myriad problems.

And, even in an era of big government, EPA is big government.

Douglas M. Costle has been administrator of EPA since March 5, 1977.

In the federal fiscal year which starts Oct. 1, EPA will spend $1.2 billion. There are 10,946 budgeted EPA employes. Yet, only $25.2 million will be for hazardous wastes, and only 161 workers — in headquarters and in the 10 regional offices — are working on the problem. Of the $25.2 million, $15 million is going to the states to help them look into the problem.

Environmental groups have sued EPA for administrative sloth. On April 21, the agency was supposed to release regulations to put the Resource Conservation Recovery Act (RCRA) into effect. This was 18 months after President Gerald R. Ford signed the legislation into law. But EPA is 21 months behind schedule.

RCRA has three main goals. They are the encouragement of conserving resources rather than disposing of them; improving the disposal of all solid wastes to protect public health and environmental quality; and, regulating hazardous wastes from generation to disposal. The laws encourage states to act on their own. But, if they don't EPA will enforce the act.

Target Date

Gary Dietrich, associate deputy assistant administrator for solid waste for EPA, told The Courier-Express in his Washington office the current target for "promulgation" of the regulations is January 1980. He called that schedule "pretty damn tight" at the present rate of progress.

Neither the State of Illinois nor the dual group of the Environmental Defense Fund (EDF) and Environmental Action (EA) have much sympathy for EPA.

Illinois Attorney General William J. Scott sued EPA on Sept. 7 over its failure to produce the regulation. He said:

"We've got to provide safe means for storage and disposal of toxic wastes in order to both serve our industry and to protect the health of citizens. We can do it, the law is on the books, and now is the time for the federal government and its employees to live up to the law and act."

"The threat to health posed by hazardous waste is clear," said EDF Science Associate Leslie Dach.

"Unless properly taken care of, it will come back to haunt us and our children," the EDF official continued.

Major Problem

A. Blakeman Early, a legislative representative for EA, noted, "One major problem is that those disposal site operators who know they can not meet EPA's regulations are loading toxic, poisonous wastes into their sites as fast as possible before these regulations are issued. The longer EPA waits to issue regulations, the more the toxic disposal problem grows."

Dach of EDF asked, "EPA acts as if the law were a meaningless scrap of paper. They sit around while nearly two billion more pounds of poisons are unsafely disposed of every week. How many more Love Canals do we need to get some action?"

"The "Love Canal" refers to a former chemical waste dump in Niagara Falls. In 1976, for reasons which are not yet clear, the dump began to leak high concentrations of chemicals, some of which cause cancer in humans and laboratory animals. New York State is committed to moving 237 families away from the area and cleaning it up.

A number of other groups are expected to sue EPA over its failure to issue new, tough regulations.

Law's Delay

Companies in the waste disposal field are reluctant to invest in new facilities to handle hazardous waste because they don't know if the facilities will meet the EPA regulations to be issued in 1980. Earlier proposed regulations have already been drastically changed and there will be more changes.

The money to go into hazardous waste management can be significant. Edward R. Shuster, vice president marketing-sales for Newco Chemical Waste Systems Inc., in Niagara Falls, told The Courier-Express it might cost $20 million to just build one incinerator which could properly handle the widespread pollutant PCB.

Carl Goslin, assistant technical director of the Manufacturing Chemists Association (MCA), in Washington, commented, "It takes $10 million to build a properly designed plant — at an off hand estimate." The MCA is the trade group for the great chemical companies.

There is no great rush into a field which remains so uncertain, without the final rules and regulation.

Much of the EPA effort has been fire fighting. Agency officials and workers are constantly being sent into areas where chemical situations have gone haywire.

In the old textile town of Lowell, Mass., a bankrupt chemical storage and treatment company site is leaking toxic chemicals into a nearby river which provides water for Lawrence, Mass. downstream. There are estimated to be 15,000 drums of a wide variety of chemicals on the site and hundreds of thousands of gallons of chemicals in storage tanks.

Bids Asked

Various chemical waste treatment companies have been asked for bids on cost of removal of the materials and cleanup of the site.

Even without the long-delayed regulations, EPA is stumbling into action. In the fiscal year which ends Sept. 30, the agency has given $3.8 million to states to survey chemical wastes and their ultimate disposal. In the fiscal year which starts Oct. 1, that will rise to $15 million.

According to Dietrich, EPA has to do this. "The statute is silent on inactive

sites. It seems to deal with prospective problems," he noted. So, EPA is doing nothing itself about closed sites.

The view draws fire. Early, of Environmental Action, scoffs. "It's a reaction to a realization that there are more wastes out there than EPA can handle," he said. This group is part of the coalition which sued EPA on Wednesday.

Some of the same groups sued EPA earlier over its failure to issue regulations under the Safe Drinking Water Act of 1974. Under a consent decree, the agency is still working to study list of 129 pollutants.

Control Methods

EPA had been required to establish methods for control and analysis of toxic substances in waste water. When the agency failed to do it, it was sued. On June 7, 1976, EPA signed the consent decree agreeing to do what it was supposed to do.

Of the 129 chemicals, it has finally reached a decision on how it will analyze all of them. Now, it plans to start measuring them at various places around the country. Then, based on the results, rules and regulations will be written.

Since EPA can't meet various deadlines in the consent decree, Early commented to The Courier-Express, "It raises the question of what can be done with a lawsuit." He noted the agency is 18 months late on the consent decree.

Much of the problem is that many of these chemicals have been used for years, without anybody knowing very much about them. Now sophisticated procedures have to be used to set limits on them in water.

EPA is also facing some internal problems. Environmentalists claim some of its regions are not very active in dealing with the problems of hazardous chemicals.

One region often cited is that headquartered in Dallas which covers Texas, Oklahoma, New Mexico, Llouisiana and Arkansas. This is the heartland of America's petro-chemical industry.

Dietrich noted a recent telephone conference among all regional directors to discuss the hazardous waste situation and a planned meeting this month in Washington. He wants all regions active on the problem.

But, the regional structural weaknesses of EPA were clear when he commented, "We at EPA headquarters don't know how many hazardous waste sites there are out there." He said it was up to the states and the regional offices to know, but most of them don't know either.

In an admission that cuts to the heart of the entire problem, Dietrich said. "We don't know very much about where people are tossing hazardous wastes."

Monday: Illegal dumping of toxic wastes.

Illegal Waste Haulers Create U.S. Time Bomb

By MICHAEL DESMOND

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There are two ways to dispose of hazardous chemical wastes — legally and illegally. And the illegal way is by far the most common.

"Midnight haulers," as illegal waste-dumpers are known, are familiar figures in the chemical industry. They are especially familiar among smaller chemically-oriented companies which cannot afford the high costs of legal waste treatment or disposal.

How expensive is legal waste treatment? One operator of a well-known chemical waste treatment plant cited this example to The Courier-Express: To turn one type of chemical into harmless material costs $5 a gallon. The chemical comes in 55-gallon drums. The cost, then, is $275 per drum. Multiplied by the thousands of drums which must be disposed of, and the costs would be astronomical.

duPont Costs

E.I. duPont DeNemours & Co. Inc., for example, will spend $35 million this year to operate its disposal system for chemical wastes from its own vast complex of plants across the nation. The firm said it expects to spend even more next year.

C. Edward Ashby Jr. is well aware of the "midnight hauler" problem. He is vice president-eastern region for Rollins Environmental Services Inc. in Bridgeport, N.J., a disposal firm located not far from the state's rustic Pine Barrens. He grimaces when "midnight hauling" is mentioned as an alternative to proper disposal, but admits it is common.

New Jersey is a chemist's dream. From the industrial complex across the Delaware River from Philadelphia to the miles of industry across the Hudson River from New York City, the state is a giant test tube.

Big Waste Producer

Currently, the state produces 350,000 tons of chemcial waste a year and 1.2 billion gallons more which is dumped into the ocean, according to Dr. Ronald Buchanan, chief of the Bureau of Hazardous and Chemical Wastes in the state's Department of Environmental Protection in Trenton.

But, he is well aware of the Pine Barrens and its counterpart in North Jersey, the Meadowlands, where illegal dumping is common.

Bury Now, Pay Later

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children — present and future. This is the third in a Courier-Express series of articles about the incredible situation. It deals with toxic waste dumping practices, legal and illegal.

Many states have equivalent illegal dumping areas. Kenneth Weiss, a research engineer for the Delaware Department of Natural Resources and Environmental Control in Dover, noted, "From what we have learned from our waste investigation, most of it is going out of state."

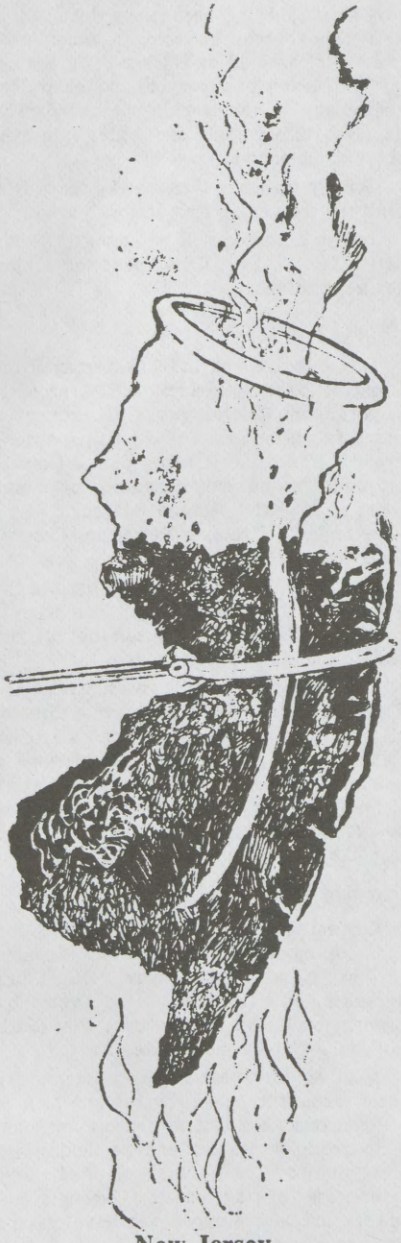
However, the department makes no attempt to verify records showing an out of state destination, he admitted.

Many states have laws or rules on the books to take care of hazardous wastes. But, there is little or no staff to enforce the laws, so they are largely just for show.

Tip of Iceberg

"We don't have the ability with our current staffing to do more than break the tip of the iceberg," was the comment of James Snyder, chief of the operations and compliance section of the Solid Waste Management Division of the Pennsylvania Department of Environmental Resources.

This isn't a problem confined to the large industrial states. "We're certain there are things that are going on we don't know about," commented Dennis Dalley, associate deputy director of health in the Environmental Health Services Branch in the Division of Health in the Utah Department of Social Services. He is one of three state employees in the hazardous waste field.



New Jersey
. . . "giant test tube"

Louisville, Ky. found out about illegal dumping in the spring of 1977. A series of toxic chemicals used to make pesticides were dumped down a sewer. The chemicals contaminated the sewer system and sent 35 sewer plant workers for medical treatment.

Sewage Dumped

For nearly three months, 100 million gallons of raw sewage a day was put into the Ohio River because the Morris Foreman Treatment Plant could not be used.

Final cleanup of sewer lines took more than a year, while much raw sewage continued to flow into a major river. A group of employees and officials of an Indiana chemical firm were indicted in federal court for violating the Federal Water Pollution Control Act.

Recently, midnight dumpers poured toxic PCB along 210 miles of road outside Raleigh, N.C.

"There are states, Minnesota is one, unlike New York who have put their head in the sands," commented Dr. Charles A. Johnson, technical director of the National Solid Wastes Management Association in Washington, D.C. He added:

"As long as we continue to be an industrial society we are going to have industrial wastes."

His group lobbied hard for the Federal Resource Conservation and Recovery Act (RCRA). At the same time, the association doesn't think the law provides enough protection into the distant future.

And, the future is the problem.

Love Canal

When the Hooker Chemicals & Plastics Corp. buried its waste in the industrial dream that was the Love Canal area of Niagara Falls, it was using the standard approach of the time. The chemicals turned into a nightmare which haunts the quiet neighborhood and may haunt its residents for a generation or more.

So, as the horrible example of the Love Canal indicates, there are even problems with legal dumps.

The Love Canal was a chemical waste dump which went wrong. The bad dumps around the country — and there are probably many thousands of them—are ticking time bombs. In the Love Canal, the bomb has gone off. Chemicals from the leaking site are thought to have caused birth defects and miscarriages, and have forced evacuation of a section of Niagara Falls.

What former dump site will go off next? There is no way to tell. The U.S. Environmental Protection Agency, the government unit responsible for protecting the nation's health from such calamities, admits it does not even know where the sites are.

Some waste is supposed to be burned, Federal regulations require that PCBs be burned in special incinerators at 2,100 degrees. But, there is no public incinerator in the country licensed to burn liquid PCBs. So, they have to be stored until EPA can license incinerators.

Waste Fuel

Some chemicals are cleaned and mixed and used as fuels in industrial processes. Since the oil embargo of five years ago, industry is much more aware of this source of heat, one large treatment plant uses about 10 percent of the wastes it handles as a fuel supplement.

Some chemicals can be treated and cleaned and reused. This is especially true of industrial solvents. One plant recycles 10 percent on the average.

Some liquid waste can be treated to precipitate out the contaminant in the form of a sludge. The water is then cleaned and discharged. Usually the sludge is buried. But, some metals can be reclaimed if concentrated enough.

Sometimes waste itself can be exchanged with other companies and used as a source material by the second company. Currently, little of this is being done.

There are three last resorts. Dumping in a secure land fill is one. Pumping material several miles into the ground in a deep well is a second. And, hauling the material out into the ocean or Gulf of Mexico is the third.

Reduce Wastes

Of course, there is an alternative companies have been reluctant to use as long as disposal, at present, is cheaper: Reducing the amount of waste to be disposed of. This can be done by making production more efficient or by changing the basic processes.

James Reilly, corporate director of environmental affairs for DuPont in Wilminton, Del., commented on efficiency: "That gets to be the topic of any manufacturing discussion."

Bruce Davis, executive vice president for Hooker's Industrial Chemicals Group, noted his firm has spent $5 million in Niagara Falls on one of its industrial processes. It resulted in "a hell of a lot more efficency and one of the savings is less disposal of residue."

In another process in Niagara Falls, he said, "We've essentially eliminated any material going to landfill or sewer system."

Davis said the technology involved in this change will be sold to other companies in the field by Hooker. "We are one of the leading purveyors of chloralkali technology in the world," he noted. This involves turning salt and water into commercial chemcials.

Simply trying to throw away the wastes isn't the answer because it dosn't work.

Ocean dumping will be stopped, by law after Dec. 31, 1981. It has been the subject of fierce attack.

Texas Protest

On Aug. 23, shrimp fishermen from Freeport, Texas attacked an EPA proposal to permit the federal energy department to dump salt brine into a into a fish spawning ground. The brine is being pumped out of an underground salt formation to make room for oil storage through the government's Strategic Petroleum Reserve Program.

The oil is being stored to be used in the event of another oil embargo. The brine is so much saltier than the ocean that it could pollute the spawning grounds.

Lonnie Vandergrifft is president of the Freeport Shrimp Association and a director of the Gulf Coast Fishermen's Defense Fund. Both groups are considering a federal court suit against the proposal. Vadergrifft said: "The EPA is supposed to be against ocean dumping. But, this will be just like a sewer line into the Gulf."

Dumping Supervised

Currently, the EPA is supervising the annual dumping of 1.5 million tons of waste off the New Jersey shore, Dr. Peter Anderson, chief of the Marine Protection Branch for EPA's Region 2 in New York City, told The Courier-Express.

Most of the waste is either chemically basic, as is the ocean, or acidic which is neutralized into a salt by the ocean. Some toxic pesticide wastes and pesticides are also dumped. Anderson claimed they deteriorate in the ocean. Garbage and sewage are also dumped and have washed back on shore.

Rep. Bob Eckhardt, D-Texas, was influential in pushing for the now required end to most dumping. He pointed out to The Courier-Express that one steel company used to dump 1,000 pounds of cynide into the Houston Ship Channel each day. Eventually, former Texas Governor John Connally was called in by the company to get EPA off its back about the waste.

Ocean Off N.Y. Is Dumping Site

The New York Bight is a giant blot in the Atlantic Ocean off Long Island and the shore of New Jersey.

The bight is formed by Montauk Point, Cape May, N.J., and the edge of the Outer Continental Shelf. Into this area, under EPA supervision, 1.5 million tons of municipal sludge, acid waste, construction debris and chemical wastes were dumped last year.

There are four specific areas for dumping inside the bight.

A number of scientific investigations have documented several adverse environmental impacts from the dumping

Eighty-six percent of all ocean dumping allowed by EPA is in the New York Bight. Other dumping places are off the coast of Puerto Rico and the Pacific Coast.

"Connally went up to Washington and had some conversations with the Department of Justice. It was out of EPA's hands," Eckhardt told The Courier-Express.

Case Reopened

Eckhardt said a letter turned up which showed EPA was ordered to reopen the case. Connally, who was also formally treasury secretary, was later publicly praised by the president of the steel company.

Finally, tighter controls were put on by congress.

Eckhardt has been pushing on the dumping situation, even though he admits, "I really do have more of the chemical industry in my district than any other congressman."

Touchy Issue

The issue remains touchy:

On Aug. 23, the Ethyl Corp. withdrew a new application for ocean dumping in the Gulf of Mexico when EPA ruled that both Houston newspapers could use the Freedom of Information Act to find out what the company was dumping. Ethyl was the last company to have a federal permit to dump in the Gulf.

When EPA began to regulate Gulf dumping in 1973, there were seven companies dumping. Before that, the practice was loosely regulated by the Army Corps of Engineers.

It isn't known exactly what Ethyl wanted to dump, although in the past the firm has dumped calcium and sodium sludge in an area 50 miles off the Mississippi Delta. Instead, the company said, it will incinerate its waste.

Waste Buried

Some other companies no longer dumping in the Gulf are now burying their waste

At one time, the Gulf was close to being a main dumping ground for Middle America. Rep. Eckhardt noted:

"I started complaining a long time ago. People were shipping drums down the Ohio River to dump in the Gulf of Mexico."

TUESDAY: EPA delay stalls treatment plans.

Public Frets Over EPA 'Laxity' on Dump Sites

By MICHAEL DESMOND

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The federal Environmental Protection Agency is delaying more and better treatment of chemical wastes because of its tardiness in setting ground rules for the industry.

The federal Resource Conservation and Recovery Act (RCRA) of 1976 was designed to manage hazardous and chemical waste. But EPA, headed by administrator Douglas M. Costle, has not yet told potential investors what rules and regulations will be on waste handling. The act required the regulations to be written by April 1978. But EPA said it will not complete the work until 1980.

Sophisticated waste treatment is a small but growing field, facing growing opposition by neighbors of treatment plant sites.

Citizens are worried that the waste treatment plant set up in their neighborhood will go broke and leave behind lakes of chemicals and drums of unknown materials to pose a health threat.

There is reason for that kind of worrying:

—Michigan recently spent $700,000 in Pontiac cleaning up 20,000 drums of toxic wastes after Ankerson Resource Recovery Systems went broke.

—The Coast Guard has just spent $1.9 million in Oswego, cleaning up liquid wastes after Pollution Abatement Services (PAS) went out of business.

New York State's proposed supplemental budget includes $750,000 to be used to find out what is in the PAS drums and how much it will cost to process the wastes. The drums are split between Oswego and a warehouse in nearby Mexico, N.Y.

Make Claim

Companies in the waste treatment field claim that wastes can be "properly" disposed of. But, none says it's easy. And no one can say "permanently."

There is considerable skepticism in the industry about buried wastes. No matter how well designed and how well built the waste burial vaults are, no one is really certain how long they will last.

What burying the waste really does is leave today's problems for future generations.

Bury Now, Pay Later

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children — present and future. This is the fourth in a Courier-Express series of articles about the incredible situation.

"When you get in that business, you have to be in the business of running a chemical plant," according to Carl Goslin, assistant technical director of the Manufacturing Chemists Association (MCA). The MCA is a trade group for chemical producers in Washington, D.C.

Goslin once ran a waste treatment site in Delaware. Since chemicals are going in and chemicals are going out, a treatment plant must be operated as if it were an initial maker of chemicals.

Proper disposal of chemicals and waste which cannot be turned to another use will cost a lot of money.

"We are going to have the costs of disposal built into the cost of the item," remarked Dr. Charles A. Johnson, technical director of the National Solid Waste Management Association. But one thing is for sure: the consumer will foot the bill.

No one can tell what the extra cost will be.

Lobbying Group

Johnson's association is a lobbying group in Washington for the entire solid waste industry. A small segment of the group handles hazardous and chemical wastes.

Johnson admits the federal Resource Conservation and Recovery Act could be a real boon to his group's members in the chemical field. That is, if the EPA ever gets the regulations out to implement the law. EPA announced on Friday that it will issue its regulations in Jan. 1980—21 months late.

The regulations were due in April, 18 months after the RCRA became law.

On Sept. 7, Illinois Attorney General William J. Scott filed suit against the EPA for its failure to put the regulations into effect. Last Wednesday, also in Federal District Court in Washington, two activist groups, Environment Environmental Action and the Environmental Defense Fund, also sued EPA for the lack of regulations.

Without the rules, companies are reluctant to invest in the treatment field because the investments might wind up in violation of the final rules.

At the same time, the rules will guarantee the existence of the waste treatment industry. Basic to RCRA is the idea that the company which generates waste is responsible for whatever happens to it. Under the law, the company must prove its waste was properly disposed of in an aproved site.

There will be much less opportunity for "midnight haulers," the clandestine operators who spill wastes into sewers, roadside ditches, drinking water sources or whatever.

Can Cop Out

Now, chemical waste producers can simply cop out by saying to federal or state investigators they had hired a reputable hauler. The producers can claim to have no responsibility for later illegal disposal.

Jim Hunt, who oversees licensing of waste haulers for the Indiana Board of Health, noted:

"We don't have the controls or manpower to get totally on top of the problem. While this state has a liquid industrial wastes control program, there is still much illicit traffic. It is widespread, with a lot of interstate movement, and difficult to trace."

Basic to the whole problem is that no one really knows how much hazardous waste is generated, exactly where it goes or even exactly how to define hazardous waste.

Only 6 Pct.

EPA throws around estimates of 98 billion pounds a year, with 80 percent going into on-premises factory sites and the other 20 percent going into the 20,000 private dump sites. Only 5.6 billion pounds are properly disposed of, EPA admits. That's only 6 percent.

Hazardous waste obviously include waste which can cause cancer, can cause birth defects, an cause genetic defects or an even cause immediate death. But, there is also waste which can explode or waste which is dangerous only in very high concentrations.

Reputable waste treatment operators offer a variety of services.

Pick It Up

Initially, they test to see exactly what it is a waste generator wants handled. If it is something the treatment firm can handle, the plant can even pick it up. When the material arrives, it is checked again to make certain it is what it is supposed to be.

Proper analysis should clear any obscurities caused by the use of chemical trade names which do not indicate the actual chemical.

Waste treatment firms maintain elaborate facilities for electronic, mechanical and chemical tests of waste to make certain the firm knows what the stuff is.

Some waste must simply be burned. The federal government requires that liquids of the highly toxic PCB family be burned in incinerators which can maintain a temperature of 2,100 degrees Fahrenheit for long periods.

Piling Up

Since not a single public incinerator in the country is licensed to do that, PCB is piling up all over the country. Or, it is being illegally dumped.

EPA estimates that one million gallons a year of liquid PCB waste will be produced for the next 25 years. Disposal firms are unwilling to invest in building incinerators until the EPA issues its long-delayed regulations.

Some materials must be buried in "secure landfills." These aren't just dumps any more, as the Love Canal in Niagara Falls really was. Electrical materias made with PCB in soid form can be buried in secure landfills.

Can Burn Waste

Liquid wastes are handled differently. Treatment depends on exactly what they are. C. Edward Ashby, vice president/eastern region for Rollins Environment Environmental Services Inc., Bridgeport, N.J., said his disposal firm can burn waste which is 99 percent water. Because of the possibility of a patent application, Ashby won't say how. But apparently it involves using heat from the incinerator process to boil off most of the water in the incoming waste.

Right now, however, Rollins can't use the Bridgeport incinerator: Last December, an on site explosion of disputed cause killed six persons and knocked it out of service.

Some liquid wastes are mostly solvents, chemicals used to dissolve other chemicals. Through chemical treatment, some of these solvents can actually be cleaned and put back into use. Some solvents are cleaned and then simply used as fuel because it is not economically attractive to reuse them as solvents.

Dirty Water

Many wastes have a lot of water in them. Sometimes a "flocculant" can be added which turns the contaminant into residue, leaving dirty water. The residue is left to dry and then buried in a landfill. Sometimes various forms of bacteria can be put into the water which will literally eat the waste material.

Whatever liquid waste treatment process is involverd, large amounts of water are produced which also mut be cleaned. The water is pumped through giant tanks of activated carbon to remove organic wastes. Then, it is aerated to provide oxygen for bacteria and cleaning. Finally, the clean water is released.

Fears Abound

But, people are afraid of places where solid hazardous waste is actually buried. Their fears are not without reason, The Courier-Express has found.

The little town of Wilsonville, Ill., fought and won a battle to get rid of a chemical waste dump in an abandoned coal mine there. Mrs. Gwen Molinar, a village trustee, explained to The Courier-Express:

"We've got a good water supply out there. There's no contamination yet. You know how you get the it's-all-right . . . now . . . feeling."

Wednesday: Death in a Louisiana swamp

Chemical Waste Haunts Louisiana Swamp

By MICHAEL DESMOND
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Early one morning in late July, Kirtley Maurice Jackson, 19, of Plaquemine, La., drove out to a chemical waste lagoon in a swamp area of that state, perhaps enjoying the hot windless day.

Jackson was driving a tank truck which belonged to a company owned by his father, Stanley H. "Jackie" Jackson, the chief deputy sheriff in charge of investigation for Iberville Parish, a parish that is essentially a swamp between Baton Rouge and New Orleans.

Iberville is a throwback parish in what is a heavily industrialized state. For many years, it was run by Sheriff Jessel Ourso. When the sheriff died two weeks ago, after

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a prolonged illness, there was even a black stallion with reversed boots to help carry him to his grave, in an old military tradition.

Out in the swamp, Clean Land, Air and Water Corp. (CLAW) operated a deep well where various chemical wastes were pumped two miles into the ground. A report prepared by the state Office of Conservation indicates 39 different companies used the well to bury everything from toluene waste water to recycled styrene.

Kirtley Jackson was driving the SHJ Inc. truck to the lagoon which also was operated by his father's company. What was in the lagoon isn't quite clear, because the records showing what was dumped in it are missing.

Acidic Samples

Parish Coroner Dr. C.E. Blunck Jr. said samples taken later indicated there was sulfuric acid, alcohol and sludge from an oil refinery catalytic cracker. All were acidic.

What was in Jackson's truck? "It was a combination of corrosive materials, many of which should have gone into a deep well," the coroner told The Courier-Express.

When Jackson began to empty his tank truck, there was a "dead calm," an unusual situation in the southern areas of Louisiana. The air and gases from the lagoon were simply sitting there.

But the waste from the truck turned on the youth. The reaction of the alkaline waste from the truck and the acidic lagoon generated massive amounts of deadly hydrogen sulfide gas.

Apparently, Jackson went to the cab of the truck and tried to drive away.

"By the time anyone got to him, he was dead," Dr. Blunck said. "He had absorbed about six times the lethal dose."

It took more than six weeks of investigation to precisely determine the cause of death. The coroner said the body of the youth was checked for all forms of drugs and alcohol to see if his reactions might have been slowed by them. Nothing was found.

Tangling the investigation, the coroner said, was his inability to get the "true sequence of what was disposed of into that pit in the preceding 48 hours."

Highly Industrialized

In a state with limited environmental interest, the case caused an uproar.

Louisiana may have the image of a sleepy southern state. In some ways, it is. But, it is also highly industrialized, with an industry built on oil and gas and the salt from far under the ground.

A visitor to the state capital in Baton Rouge travels to a towering Capitol built

Bury Now, Pay Later

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children — present and future. This is the fifth in a Courier-Express series of articles about the incredible situation.



by Huey Long, once the state's governor and U.S. Senator. From the airport, the visitor passes what may be the largest single chemical and industrial complex in the world. On a cloudy day, it requires no vision to detect it, only a nose.

Visible from the Capitol, between the complex and the river, is a chemical waste dump.

It's the sort of state where Attorney General William J. Guste has one assistant working on environmental matters. Before a budget cut, he had two. At the same time, he does have the former executive director of the Louisiana Wildlife Federation Inc. stashed away on his payroll as a research assitant.

Moratorium Declared

About one month after Jackson's death, the waste disposal problem heated up to the point that Gov. Edwin Edwards took action. He declared a moratorium on new hazardous waste permits.

"I am taking this action to insure the health and safety of our citizens. Proper regulation of the transportation, storage and disposal of hazardous wastes is essential if we are to protect the public and the property of our state," he noted in a statement.

This action by Gov. Edwards seems to have given him some political courage to do a little more. Last Thursday, he said, "When opting for industry or the risk, I will take a position against industry."

"There is no need for a multiplicity of industry if it destroys the very reason for our being," he told the Louisiana Environmental Protection Association.

Five years ago, he told environmentalists he didn't want to hear their concerns or listen to their advice. Now, he plans to go to the State Legislature in April for stronger controls on waste.

This may also partly have been caused by the State Health Department banning fishing in Lake Providence, a prominent fishing spot, on Sept. 12 because of contamination of a deadly pesticide.

At the same time, this concern has not been extended to the State Office of Science, Technology and the Environment. The office is preparing the state rules under the federal Resource Conservation and Recovery Act (RCRA) of 1976. The rules go out to the public for 15 days for comment, officially starting Thursday. No copies are available yet.

The office has two people working on the federal law.

RCRA is the congressional answer to the whole problem of generation, shipment and processing of hazardous waste. But the federal Environmental Protection Agency has never issued the rules to put it into effect.

Delay Until 1980

The EPA rules were due in April. But EPA, headed by administrator Douglas M. Costle, now says it won't issue the rules until 1980.

Louisiana has a new law to regulate hazardous wastes. But, in a replay of the problems of the EPA, regulations to implement the law haven't been written.

Louisiana is one of the many states that have serious chemical waste problems.

One test of this is the widespread contaminating chemical family of PCBs. A 1977 study of water and sediment samples by the EPA in Louisiana waters found widespread PCBs, but admitted testing methods were not adequate.

In releasing the figures, EPA noted the method used to look for PCBs isn't very good. As a result there could be PCBs present, just not measured.

Water pollution in Louisina is under the jurisdiction of the Stream Control Commission. But, the commission is something of a bureaucratic fiction. It is made up of the heads of a number of state agencies and has no staff of its own. Under the new law, jurisdiction will pass to the Department of Natural Resources.

'No Appropriation'

The commission has "no appropriation and no budget," according to Dale Givens, its assistant director. Givens suggested the PCBs are coming down from the air in rain.

He doesn't think there is any particular problem with the state's vast water supplies, but admits no one is really looking. The standard state tests of water are for biological oxygen, suspended solids and the "PH" of the water. The current expanded program is more for heavy metals and some pesticides.

"Which really don't tell you a hill of beans about whether there is a low level of something, that might cause cancer," he noted.

In a few areas, PCBs are so high in water that they can be measured. This indicates they are hundreds of times above the safe level set by the Federal Food and Drug Administration.

Government action on the state level is slow, but the citizens of New Orleans seem to have an unconscious reaction. The old city is a heavy user of bottled drinking water.

Regulations Urged

Dr. Robert H. Harris of the Environmental Defense Fund in Washington, D.C., recently attacked proposals to delay EPA drinking-water regulations. He told an EPA hearing in New Orleans:

"Furthermore, EPA should be reminded that a large segment of the public in New Orleans, as well as elsewhere, has lost confidence in the safety of local water supplies. By seeking expensive alternatives, such as bottled water and home water treatment devices, they are paying many times the rate increase the EPA regulations will require."

A 1974 EPA study found 20 chemicals in the New Orleans drinking water which have the capacity to cause cancer. Some are pesticides. But others are industrial wastes, such as benzene and hexachlorobenzene.

Harris estimated there would be 250 extra cancer deaths a year in New Orleans caused by the local drinking water.

Citizens are suspicious because they know the Bayou Sorrel lagoon where Jackson died is an area where high water would flush it out once or twice a year, putting the wastes into the local water.

The state produces vast amounts of wastes a year. Much of it is dumped down deep wells. Much of it probably just disappears. Givens commented:

"I would safely say there is no report, or one point, where you could go to find out about waste."

Thursday: New England passes the buck.

Courier EXPRESS
ESTABLISHED 1834 Buffalo Family Owned and Operated ESTABLISHED 1846

20 WEDNESDAY, SEPTEMBER 20, 1978

Editorials These opinions represent the judgment of The Courier-Express Editorial Board

EPA on Spot in Waste Glut

Of the estimated 92 billion pounds of hazardous chemical waste generated in the U.S. each year, only 5.6 billion pounds (about 6 per cent) are "properly disposed of," by the federal Environmental Protection Agency's own estimate. These are the startling figures developed in an investigation of the problem by The Courier-Express' Michael Desmond and reported in a continuing series of copyrighted stories.

Obviously, the federal government needs to do more to make a dent in this sea of toxic wastes that is threatening the nation's health and safety. Yet its actions are agonizingly slow.

The Resource Conservation and Recovery Act was passed by Congress in October, 1976. It stipulated that regulations to control hazardous wastes be promulgated "no later than 18 months" after enactment. Despite threats and lawsuits, the EPA has not issued the regulations. At last report, it said they will not be issued until 1980, blaming the "very difficult technical, financial, legal and environmental issues" involved.

Due to this government inaction, many problems have arisen. A number of companies have been trying to increase the amount of dumping before implementation. Companies in the waste-disposal field are reluctant to invest in new facilities because they don't know if they will meet the 1980 EPA regulations. States with tougher waste-disposal laws are, in a way, hurting themselves, since industries in other states, where rules are weak or nonexistent, may be continuing to dump with impunity, thus inviting more "runaway" plants.

Clearly, the EPA ought to issue its regulations to cut off further dumping at once, and iron out the technical details later. This law, spelling out the will of the people, has been on the books for nearly two years while the bureaucrats have failed to take even the first steps toward enforcing it. **It is mandatory that the enforcement picture be evened out among the states, as Congress intended, so that waste-disposal costs to industry can be spread more fairly. It seems to us essential that the EPA embark on a crash program to get this done.**

Bury Now, Pay Later

Toxics Rattle New Englanders, Too

By MICHAEL DESMOND

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The New England states solve the hazardous waste problem by shipping their dangerous materials to other parts of the country.

The Northeast corner of the nation has no good waste disposal site. But, as would be expected in a heavily industrialized area, there are industrial and hazardous wastes.

Bay State Mess

Massachusetts is the possessor of one of the great chemical messes of our time: The Silresim Chemical Corp. in Lowell firm went broke, leaving behind 15,000 drums — 55 gallons each — of various chemicals and hundreds of thousands of gallons of all kinds of liquids in tanks.

The citizens of Methuen and Lawrence, Mass. get their driking water from an intake downstream from where chemicals from Silresim are leaching into the Merrimack River.

In Rhode Island, the residents are starting to worry about chemicals leaching into the Pawtuxet River from a land fill.

In Connecticut, John Housman, principal Environmental Protection, admits there are problems. Asked if the state's wastes are being properly disposed of, he could only say, "Right now, I have no way of knowing."

Vile Odor

In Maine, the little town of Gray found out one day that the vile odor and strange color which turned up in their drinking water in 1975 came from chemicals dumped at a site outside of town. Eventually, the site was closed down.

Gray Town Council Chairman Michael Gibbs put his finger on the issue:

"We discovered our problem pretty much by accident. I shudder to think what some other towns might be drinking in their water."

It's serious point:

Data Listed

The New England Regional Council recently attempted just to get a handle on how much waste there was in the six states. It came up with figures of 18.4 million gallons of reclaimable wastes, that is waste oil and solvents; 5.6 million gallons of treatable wastes; 5.9 million gallons of waste that has to be incinerated; and 17.9 million gallons of waste which has to be landfilled.

Chemical waste dumps — past and present — are threatening the health of the nation's men, women and children — present and future. This is the sixth in a Courier-Express series of articles about the incredible situation. It deals with the practice of the New England states to ship their hazardous wastes elsewhere.

How accurate the figures are is anybody's guess. Housman would only term them "rough estimates."

There are unusual industries in the area. Providences has a large jewelry industry with highly acidic waste. Much of that goes into city sewers, according to Frank Stevenson, a senior sanitary engineer with the Division of Land Resource of the Department of Environment Management.



Lowell Sun

Stacked Silresim waste drums monument to government inaction

. . . some waste went into drinking water

Losing Track

"We are also losing track of th sewage discharge," he noted. The city is getting a system to pre-treat jewelry waste before it goes into the regular system.

Vermont and New Hampshire are believed to produce minimal amounts of hazardous wastes.

Connecticut has a similar water case in the Town of Plainfield where chemicals were dumped into a regular landfill. The state has already spent $600,000 there, including an $80,000 study of underground water. There are a number of drinking water wells nearby and William Hegner, a principal engineer with the Oil and Chemical Section of the Water Compliance

Bureau, agrees the chemicals could turn up in the water.

"There is a potential for that," he admitted.

Bridgeport Problem

The state also had a cleanup problem in Bridgeport, where chemicals were dumped into a gravel area. The contaminated gravel had to be dug up and hauled away. Much of it went to the SCA Chemical Waste Services Inc., formerly Chem-Trol, in Niagara County, N.Y.

But, the biggest chemical waste problem in New England is Silresim. The State Legislature has been asked to put up $1.5-million for a cleanup based on a report from Fred C. Hart Associates, in an environmental research firm in New York City. The Hart report said:

"Results of studies conducted for this contract indicated significant on-site contamination of soils and ground water and the potential for contamination of surface water bodies after the spring thaw. High concentrations of toluene and trichloroethylene were detected in soil and ground water sampled at the facility. High concentrations of total organic carbon were also detected in on-site wells and local sewers."

Causes Depression

Toluene causes depression of the central nervous system, addiction, muscular fatigue and can kill in high concentrations.

There are two forms of trichloroethylene. High exposure to either can kill. Either may also cause kidney or liver damage.

Air Tanks

The situation is so bad that the federal Environmental Protection Agency (EPA) has ordered any of its employees visiting the scene to wear air tanks, rather than filtering masks.

The site has been a problem almost since it opened in 1973. It began as more of a storage site than anything else. But, gradually its owner, Dr. John Miserlis, began to try to turn it into a chemical waste re-processing plant.

In July 1975, the state Division of Water Pollution Control (DWPC) threatened to revoke its license unless changes were made.

When the 1976 license limited what could be handled on site, the corporation took the state to court and the judge removed the restrictions. Some new ones were set in the court order but were apparently never adhered to.

By Bank

In October 1976, the site was taken over by the bank which held the mortgage. The bank studied the situation and reopened the site. Last year, the firm went into bankruptcy, even though the site itself was still in operation.

A year ago, Lowell city workers were overcome by toluene fumes in the sewer. Apparently at that point the city and citizens became aware of how bad the situation had become.

The court order had required the removal of 500 barrels a month to cut down the accumulation. The Hart report indicates the materials in the deteriorating drums were simply dumped into some of the large tanks on the site.

Now the state and the federal government are asking companies to come in and make bids on the cleanup. The Hart report indicates part of the cleanup will include sealing the underground water and putting some sort of cap on the surface to control runoff and air pollution.

"We generally know what's there," commented Hans Bonne of the state DWPC.

At one point, Dr. Miserlis used an aerial photo of the site to take a variety of government agencies on a tour of chemistry. For example, he could tell them area 27 contained chlorinated benzene from Solvent Chemical Co. Inc. of Niagara Falls, N.Y. Or, he could tell them he had no idea what was in area 23. Area 14 had six storage tanks with a combined capacity of 80,000 gallons containing hexane, toluene, methylene chloride, water acetone and what was described by him as "miscellaneous hydrocarbons."

Storage Hank

There is even one 100,000 gallon storage tank filled to the top. In warm weather, the Hart report said, "Due to a decrease in density upon warming, the materials stored in the 100,000-gallon storage tank will likely overflow as soon as warm weather arrives since the tank is full to the top."

The material inside is in three parts. There is a one-foot residue layer on the bottom. Above that is 50,000 gallons of water with a variety of dissolved hydrocarbons. On top is 50,000 gallons of such things as toluene, cancer causing benzene and mineral spirits.

Right now, it's all still there.

Dr. Charles A. Johnson is technical director of the National Solid Waste Management Association, a trade group in Washington, D.C. He called Silresin a "clasic example" of commerical plans to recycle chemical and hazardous wastes.

"He couldn't make it pay," was the verdict.

21 Months Late

Despite problems encountered at Silresim and elsewhere, the EPA has just announced it would be at least 21 months late issuing regulations that could control improper waste disposal. EPA is headed by Douglas M. Costle, an appointee of President Jimmy Carter.

The regulations were required to be issued last April, 18 months after the 1976 Resource Conservation and Recovery Act (RCRA) became law. But those 18 months proved not to be sufficient for EPA to come up with the regulations necessary to institute the RCRA. Last Friday, EPA said it would be unable to come up with the rules until January 1980.

That means the agency will have taken 39 months to complete work on the regulations. Despite the delay, EPA has only 161 of its nearly 11,000 employees nationwide working in the area of hazardous wastes.

Nowak, Kemp Pressing For Toxic Waste Action

Courier-Express Washington Bureau

WASHINGTON — Rep. Henry J. Nowak, D-Buffalo, on Thursday urged the administrator of the Environmental Protection Agency (EPA) to speed up the issuance of toxic waste disposal regulations as decreed by the Resource Conseration and Recovery Act (RCRA).

At the same time, Rep. Jack F. Kemp, R-Hamburg, alerted his colleagues to the national threat posed by unregulated chemical waste disposal.

Both Buffalo area congressmen said they were reacting to an on-going series of articles in the Courier-Express on the hazardous waste problems throughout the nation.

'Deeply Concerned'

In a letter to EPA head Douglas M. Costle, Nowak said he is "deeply concerned with the EPA's failure to comply with the requirements of the RCRA and promulgate the regulations within 18 months."

I am ever more concerned by indications that the final rules for this vital program are not expected before January, 1980," Nowak added.

The act was passed by Congress in 1976 to control the generation, treatment, transportation, storage and disposal of hazardous or toxic wastes.

The state of Illinois and two environmental groups have sued EPA for its failure to issue the rules that were due last April.

Nowak said he realized the complex problems EPA faces in making these rules, but "your projected 1980 issuance of the final regulations presents an intolerable delay in what has been clearly identifyed as a critical problem for years."

His letter went on to say "The Courier-Express series illustrates the scope of the national problem. He also sent Costle a complete set of the articles for his review and comment.

In remarks prepared for insertion in the Congressional Record, Kemp said he, his staff and scientific and legal advisers and studying the entire question of hazardous waste disposal to prepare for introducing legislation early next fall.

"A significant contribution to this has been made by The Courier-Express in a series of copywrited articles by Michael Desmond, a staff writer for the paper who traveled extensively around the country in determining the extent of the problem, the status of incidents, the responses of the environmental protection agencies, et cetera," Kemp said. "This series has shown convincingly that this is a national problem, one requiring a national solution, if not a federal one,"

Kemp said he meant the problem requires a joint solution from all levels of governments in the nation, rather than leaving it all to the federal government.

EPA

Unit Admits It's Unable To Fix Sites

$1.5 Billion Needed For Cleanup Job

By DAVID E. LYNCH

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WASHINGTON — The Environmental Protection Agency admitted on Thursday that it knows of 300 chemical waste dumps that are an immediate threat to the nation's health and safety, but that the agency is powerless to do anything about them.

Top EPA officials told The Courier-Express that it would cost $1.5 billion to clean up the 300 hazardous dumps, but that there is no money available for that purpose.

Further, the EPA said, there is no law giving the agency — or any other agency, for that matter — authority to deal with the problem of cleaning up the 300 dumps.

"Tip of Iceburg"

The EPA said the 300 known dump sittes are just the tip of the iceburg because, it said, hundreds if not thousands of hazardous dumps could come to the surface over the next few years.

Besides, one top official conceded, the EPA is more concerned with preventing the formation of hazardous dumps in the future than it is in attacking the immediate problem.

That EPA official is Gary Dietrich, associate deputy assistant administrator for solid waste.

Asked if the EPA is taking this problem as seriously as it should, Dietrich said:

Stress Prevention Program

"That's in the eye of the beholder. We're putting all our energies in a prevention program right now. If we stopped to look at the retroactive problem, we would have to divide our resources, and the prevention program would be slowed down."

The prevention program is known as the Resource Conservation and Recovery Act (RCRA), which was enacted in 1976 to control the generation, treatment, transportation, storage and disposal of hazardous or toxic wastes.

But EPA said the long-delayed RCRA will not give the agency a role in the dealing with retroactive hazardous vaste emergencies.

"Off the top of my head I know of 300 situations like the Love Canal (Niagara Falls) problem that stick out like sore thumbs," Dietrich said.

He said it would cost $50,000 to assess the problem at each of the 300 sties, and it would probably cost about $5 million to remedy the problem at each site.

$1.5 Billion Total Cost

"That adds up to $1.5 billion," he said, "and that doesn't go into $10 million."

He was referring to the federal Water Pollution Act which authorizes a $10 million emergency pollution fund that would provide that role.

But the Carter administration firmly opposes the appropriation of monies for that fund. So it's a fundless fund that Dietrich says wouldn't come near to providing the money necessary to clean up the abandoned but deadly hazardous waste sites.

How does the EPA feel about the administration, principally the Office of Management and Budget (OMB), killing this fund?

"The president's the boss. We just work for him," Dietrich said with a smile. "Actually, EPA isn't as opposed as OMB. We recognize it will open the barn door to state and local governments that want to use it for any pollution problem, but we also recognize it has to be opened to some degree. It just has to be limited."

$10 Million Not Enough

In any event, Dietrich says the $10 million wouldn't even scratch the surface of the problem.

Upon enactment of RCRA, Congress mandated that the EPA draw up regulations for the implementation of this law within 18 months. That deadline passed in April, and EPA Administrator Douglas M. Costle last week announced that the regulations won't be ready now until January of 1980.

The EPA will spend $1.2 billion this fiscal year. There are 10,946 EPA employees. Of this budget only $25.2 million will be for hazardous wastes, and only 161 workers — in Wqashington and in the 10 regional offices — are working on the problem. Of the $25.2 million, $15 million is going to the states to help them look into the problem.

Asked if 161 people are enough to combat the chemical waste problem, Dietrich said:

"Of course not, but we've got 500 people plugging their thumbs into industrial discharges; 500 more working on industrial air pollution; 500 working on the toxic substances act and 1,000 people in research.

"Those aren't exact numbers, but it's not as though the other 10,000 people in EPA are sitting around on their thumbs."

All this overlooks another problem the EPA says money won't solve — what to do with the waste. "Love Canal has caused a backlash," Dietrich said. "No one wants to live near these dumps now, and while everyone wants them moved, they don't want them moved near them."

The solid waste executive ways the government is capable of handling the problem. "We've always been able to find an answer to our problems throughout history."

Optimistic Over Future

He predicted the growing public awareness of this problem will eventually lead to public policy and law that will give EPA the authority to clean up the mess.

He said the bottom line is found in RCRA that will eventually 'make the cost of a disposable product part of the purchase price."

Until that happens, he said, the mountains and rivers of toxic wastes threatening this nation's health and safety will have to be dealt with one day at a time.

Love Canal Tops List of Disasters

By MICHAEL DESMOND

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New York State has a prominent place among centers of industry. But, it is also the location of at least five major environmental disasters involving hazardous chemical wastes. They are:

1. The Love Canal area in Niagara Falls, where a closed waste dump has begun to leak a variety of dangerous chemicals, at least one of which cause human cancer, forcing the evacuation of hundreds of families.

2. Extensive contamination of the Hudson River and its fish with the toxic PCB chemical family.

3. Contamination of drinking water wells on Long Island with chemicals, including the cancer-causing vinyl chloride.

4. Spills into Lake Ontario from a bankrupt chemical waste processing plant in Oswego and an expensive program to clean up waste left behind by the company.

5. Contamination of Lake Ontario and its fish by the dangerous pesticide Mirex, a contamination so bad that at one point the state banned catching fish from the lake.

Love Canal Dump

The Love Canal, a chemical waste dump in Niagara Falls, was closed in 1953. About two years ago, the dump began to leak dangerous chemicals, at least one of which is known to cause cancer in humans. The leaking chemicals are forcing the evacuation of hundreds of families. It isn't known if they will ever be allowed to return.

As a result of the Hudson River PCB spill and the Lake Ontario Mirex situation, New York is probably far ahead of other states in its program to systematically sample and look for chemical contamination.

Yet the state still is in the early stages of finding out how serious its toxic waste problem really is.

Three days ago the State Department of Environmental Conservation said it has asked regional officials to find out where the hazardous waste dump sites are throughout the state.

The list is expected to be completed by the end of next week.

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children—present and future. This is the seventh in a Courier-Express series of articles about the incredible situation. It deals with how New York State has reacted to several environmental disasters.

Head Start for State

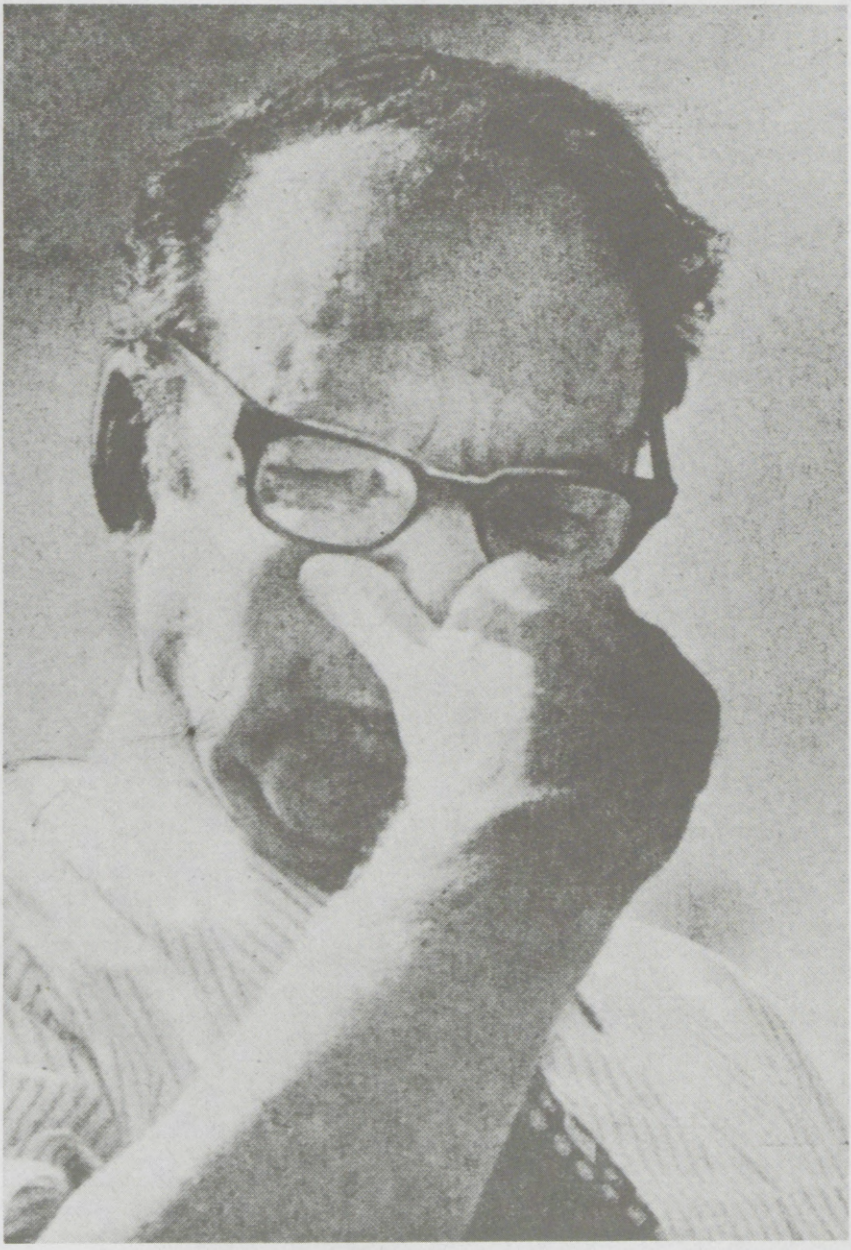
So, despite the head start afforded New York State by its series of environmental disasters, the state obviously is far from gaining the upper hand on its chemical waste mess.

Charles Goddard is chief of the Hazardous Waste Management Section of the Division of Solid Waste Management of the New York State Department of Environmental Conservation. He recently declared:

"In New York State, industry generates approximately one million metric tons of hazardous waste per year. In more descriptive terms this quantity would cover a square mile to a depth of slightly greater than one foot."

New York must control this waste carefully, not only because the material can be dangerous but also because the state has 5.2 million persons who obtain their water supply from ground water.

The most extreme example of this is on Long Island. In the heavily populated counties of Nassau and Suffolk, all 2.5 million people drink water which comes from wells. To protect this area the federal Environmental Protection agency established special regulations went into effect Sept. 1.



Courier-Express

Federal Investigator William Wilcox strikes an eloquent pose
. . . during his recent visit to Love Canal area

Special Limits

Limits on dissolved solids were established because the underground water table is the principal source of drinking water; if the water table were contaminated, it would create a significant hazard to public health.

Long Island became aware of drinking water problems in 1972, when taste and odor problems were reported at wells serving the 20,000 workers of the Grumman Aerospeace Corp. in Bethpage in Nassau County.

It was not until March, 1974, that an industrial waste dump at Grumman was found to contain the human cancer causing chemical vinyl chloride and chemical solvents.

A nearby Nassau County plant of the Hooker Chemicals & Plastics Corp. that was making polyvinyl chloride was also found to have both vinyl chloride and chemical, solvents in its wells. In Oct. 1975, two Grumman wells were found to contain the known animal cancer-causing solvent trichloroethylene along with tetrachloroethylene.

Vinyl Chloride Found

Vinyl chloride was found in one well. Both were immediately shut down. Further testing of wells across Nassau County showed a wide variety of chemicals, including chloroform and carbon tetrachloride, two other chemicals that can cause cancer in animals.

The County Health Department has limited use of a number of wells. Much of the contaminants apparently come from household and commercial activity that entered the ground water after being dumped down drains. The state and county are trying to remove many products from use and to limit casual commercial dumping.

New York's reaction to this is complicated by its knowledge that more than 200 lakes in the Adirondack State Park are too acidic for fish, apparently because airborne chemicals are washed from the sky by rain.

The Empire State has vast recreational programs, especially in fishing. In two areas, chemical waste has crippled those programs:

1. Several years ago, it was learned that the General Eelctric Co. had dumped significant amounts of PCBs from two plants near Albany.

Burning Permit for PCBs

Now, GE has the only permit in the country to burn PCB in a special incinerator for its own use. It is not licensed to handle PCB for any one else.

But, the PCBs have ruined fishing in most of the Hudson because levels are so high. Apparently, the actual bottom of the river will have to be dredged in various places, and the material carried away some place to be buried.

2. Mirex is a different situation. Canadian scientists found this strong pesticide, used against fire ants in the South, in Lake Ontario fish. It is closely related to the pesticide Kepone which contaminated Virginia's James River and part of Chesapeake Bay, shutting their fishing industry.

Hooker has long since stopped making or processing mirex in its Niagara Falls plant. But, it has sent 153 tons of it to the SCA Pollution Control Services Corp. plant in the Niagara County Town of Porter for storage.

Fishing Ban

Initially, New York banned the taking of fish from Lake Ontario. Later, the ban was modified to advice to eat only a limited amount of Lake Ontario fish. Pregnant women were advised by the state to eat none of it. The state also has a program for women from Lake Ontario areas to check mother's milk for Mirex. The chemical is thought to cause liver damage in humans and is known to cause birth defects in animals.

Exactly what can be done about the chemical isn't really known.

Ironically, new research indicates the fire ant might not be such a bad thing after all. It apparently is the mortal enemy of boll weevils, the curse of cotton growers because they damage cotton crops.

The priority concern in New York right now is Pollution Abatement Services, the bankrupt chemical waste processing plant on the shore of Lake Ontario in Oswego. The Coast Guard has spent $1.9 million to try cleaning up the chemical mess.

Seeking Information

"Right now, we are negotiating to find out what is there. The company has no records," Goddard said of the 15,000 drums of material left behind by the company.

The state's proposed supplemental budget contain $750,000 to pay for testing to find out what is in the drums. Then, the state will apparently have to pick up the tab for treating the chemicals and disposing of the drums.

Chemical waste drums can be cleaned and reused. But, usually, the most decrepit

drums are used to ship the materials to waste treatment sites.

Goddard claims New York now has its waste problem pretty well under control, saying: "Most of it now goes to proper disposal sites."

Chemical Glossary

1. Carbon Tetrachloride — A chemical used at one time as a common household cleaner. It causes animal cancers.

2. Chloroform—A chemical used at one time as an anesthetic. It is a cause of animal cancer.

3. Kepone—A pesticide used against ants and roaches. It is suspected as a chemical which causes cancer in humans. It is known to cause nerve disorders and liver damage in humans.

4. Mirex — A pesticide used against fire ants. It is thought to cause liver damage and some animal birth defects.

5. PCB — The term used to describe about 200 chemicals known as polychlorinated biphenyls. They are used in the electrical industry and in plastics. Manufacture is now banned. They can cause liver damage to humans and have a variety of bad effects on fish and wildlife.

6. Polyvinyl chloride—Frequently referred to as PVC. It is a plastic used in such products as household pipe.

7. Tetrachloroethylene — A chemical solvent also used in some soaps.

8. Trichloroethylene — An industrial solvent. It causes cancer in laboratory animals.

9. Vinyl chloride—A chemical used to make plastics, especially polyvinyl chloride. Vinyl chloride can cause human cancer.

Two Disposal Operations

The state benefits from having two of the best known companies in the disposal field within its boundaries, SGA in the Town of Porter and Newco Chemical Waste Systems Inc. in Niagara Falls.

In addition, the state cooperates with other states to keep track of wastes shipped from one state to another. Without the rules under the Federal Resource Conservation and Recovery Act (RCRA), there is no system to keep track of wastes shipped across state lines.

For example, a company seeking to dispose of wastes could give New Jersey a form showing the material was sent to New York. But, without cooperation among the states, there would be no guarantee it actually went.

Goddard is annoyed at federal EPA for its delays in getting out the RCRA rules.

'More Discouraged'

"I'm getting more and more discouraged at what I'm seeing of their time schedule," he said.

EPA was supposed to have the rules last April, 18 months after the act became law. Now EPA, headed by Douglas M. Costle, administrator, says it will not issue the rules until January 1980, 39 months after enactment.

Part of Goddard's unhappiness involves his state's Industrial Hazardous Management Act.

Regulations Delayed

As a result of bargaining with Associated Industries of New York, an industrial lobbying group, the state law will not take effect until the EPA rules are issued.

Currently, New York has increasingly tighter controls on industrial waste, including transportation and design rules for hazardous waste treatment facilities and secure dumps.

Goddard noted, "In the last few years and especially in recent months, industry has become acutely conscious of the problem."

Saturday: Texas Fishermen Net Exploding Drums.

Bury Now, Pay Later

Texas Coast Attempting Comeback After Years of Toxic Waste Neglect

By MICHAEL DESMOND

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Working inland from the Gulf of Mexico along the Houston Ship Channel in Texas is one of the nations greatest industrial complexes, a complex traditionally not fettered by any government rules on pollution controls.

Then a tropical storm or a hurricane would sweep in from the Gulf every once in a while and flush the channel clean for a new season of dumping.

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children—present and future. This is the eighth in a Courier-Express series of articles about the incredible situation. It deals with toxic waste problems in Texas.

In 1971, the Federal Environmental Protection Agency (EPA) said the Ship Channel each day was receiving 55,000 pounds of oil and grease, 7,900 pounds of zinc, 5,000 pounds of cadmium, 1,600 pounds of lead, 1,000 pounds of cyanide, 400 pounds of phenol and 200 pounds of chromium.

The only surprising thing is that one day the chemicals didn't mix and turn the whole thing solid.

After the EPA estimate, it called for a limit on dumping in the channel. "The Texas Water Quality Board scoffed at this," noted Keith Ozmore, environmental assistant to Rep. Bob Eckhardt, D-Texas, to The Courier-Express.

He added, "The Water Quality Board did not do very much about reductions from industry along the channel."

New Department Set Up

At the same time, a couple of environmental messes have attracted some attention.

The Houston Ship Channel was one, although it has been partially cleaned up. Another involved French Ltd. of Houston Inc,, a waste disposal firm, with a dump in Crosby, near Houston.

"The odor would gag a maggot," a neighbor told a Courier-Express reporter when the dump was operating.

In discussing what happened there, EPA put it rather succinctly: "Environmental damage — Contamination of ground and surface waters. Air pollution from occasional fires. Destruction of local vegetation."

Wastes Go in River

Over a period of about six years at French Ltd., 70 million gallons of waste were dumped into an unlined sand pit near a truck stop. Then, on June 15, 1973, a heavy flood flushed the disposal site, removing most wastes into the San Jacinto River. Later, a $5,000 fine by a state court was ordered paid to Harris County. The site was turned over to the state instead of paying a separate state fine.

This may all be in the past, at least according to J. C. Newell, director of permits for the Waste Waters Division of the Texas Water Resources Department.

Texas now requires permits for dumping solid industrial waste, monitors the waste and requires a manifest system to indicate where it goes. The dump site permits also include the requirements for closing a site.

He cited the Ship Channel as an example, "It's not suitable for swimming. But, considerable progress has been made."

Eckhardt agrees. The Deer Park Democrat must balance between the environment and a district of which he admits, "I really do have more of the chemical industry in my district than any other congressman."

Sponsored Control Act

He has been a leader against dumping of chemicals in the Gulf of Mexico and was the key sponsor of the Toxic Substances Control Act (TOSCA), one of the greatest forward steps ever by government in attempting to get a control on the alchemists of industry.

TOSCA gives EPA the authority to regulate the production and use of all chemicals harmful to public health or to the environment. The law requires EPA to list all such chemicals now on the market, to limit the use of those found to be harmful and if necessary to ban their production.

This law also banned the manufacture of PCB.

The EPA has been slow in implementing TOSCA.

It also has been slow in drawing up the regulations to implement the Resources Conservation and Recovery Act (RCRA) signed into law in 1976.

EPA Slow to Start

That law gave EPA 18 months — until April, 1977 — to draft the implementing regulations. The deadline has passed. Now, EPA — headed by Administrator Douglas M. Costle, an appointee of President Jimmy Carter — has announced it will not have the regulations ready until January, 1980. That would be 39 months after enactment of RCRA and 21 months after the deadline established by Congress.

Meanwhile, EPA admits it doesn't have a handle on the problem of hazardous chemical wastes which the regulations would help to control.

TOSCA was written after scientists made public that vinyl chloride, a common industrial chemical, caused a rare and invariably fatal form of liver cancer in chemical workers.

There had already been several previous cases of common industrial chemicals or materials turning out to be cancer causing. These include asbestos and a series of coal tar dies.

TOSCA Complements RCRA

Ironically, the federal government has just discovered the EPA offices in New York City are located in a building filled with asbestos used in construction.

TOSCA amounts to a companion to RCRA. TOSCA will control what chemicals are allowed into industry and which should be removed; RCRA will regulate the disposal of industrial chemicals.

"Of course the toxic substances act is relatively new and it has a very small budget," Eckhardt noted. He hinted why it may have a small budget. "Perhaps industry is willing to go along and they feel they could kill it by not putting up money."

One area in which Eckhardt feels he has been successful is ocean dumping of chemical wastes. It's a long standing practice to dump drums of waste in the Gulf of Mexico. Many contain sodium sludge and will explode if exposed to water. The idea is to put holes in the drum and then it is supposed to explode under water. But, some have blown up in fishermen's nets or, in one case, on the boat itself.

It was open season for chemistry. Said Eckhardt: "I started to complain a long time ago. People were shipping drums down the Ohio River to dump in the Gulf of Mexico."

There is an underwater coral reef not far from Houston in a dump area, the congressman noted.

"Lord knows what damage they may have done in terms of the marine life and beauty of the area," he said.

SUNDAY: Hazardous wastes in the West.

20,000 Dumps Are Hazard In U.S.: EPA

Agency Has No Way To Counter Peril

By DAVID E. LYNCH

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WASHINGTON — The federal Environmental Protection Agency (EPA) now estimates there are as many as 20,000 inactive hazardous waste dumps throughout the country.

But a top EPA official admitted to The Courier-Express, the agency does not even have an accurate inventory of the 300 dumps it says are an immediate health and safety hazard.

In fact, Gary Dietrich, associate deputy assistant administrator for solid waste for EPA, said he is just now preparing a memo ordering his regional staff to prepare an inventory of these, the most dangerous, sites.

30 Days

He said this inventory will take up to 30 days.

In an interview earlier this week, Dietrich told The Courier-Express that his agency has neither the law nor the money to remedy the health and safety hazards posed by these inactive chemical dumps.

At that time, Dietrich acknowledged the 300 known dangerous dump sites and added there might be hundreds or thousands more across the country. At that time, he gave no indication that the figure might reach 20,000.

But, he said, the EPA is more concerned with preventing the formation of these dangerous disposal sites in the future than with attacking the immediate problem.

Disposal Disasters

He said he had his 10 regional staff members in for a meeting a few weeks ago, and he asked each of them to give him examples of chemical disposal disasters on the magnitude of the Love Canal, Niagara Falls, contamination.

"Each one of them had three to five examples," Dietrich said, "and virtually every one of these cases were generally known about for two or three — and some cases up to 10 — years. And nothing's been done about them."

He said he expects the 10-member regional staff, the only EPA employes working on the hazardous waste problem outside of headquarters, to come up with a complete inventory on anywhere from 100 to 300 such sites.

Of the 11,000 EPA employes, only 161 are involved in the hazardous waste area.

Locations Unknown

Dietrich, as everyone else at EPA, admits the agency does not know where these death traps are. He estimates there are some 300 of the Love Canal "time bomb" nature, and agency estimates of the total number of inactive hazardous waste dumps range up to 20,000 throughout the country.

The associate deputy says there was no federal law to deal with chemical waste until 1976 when Congress enacted the Resource Conservation and Recovery Act (RCRA). The act required EPA to come up with regulations to implement it by April, 1978.

This legislation promises "cradle to grave" regulation of chemicals and other hazardous substances, but EPA delay in drafting the regulations now makes implementation of this law impossible before 1980.

Investigation Asked

On Friday, Rep. Henry J. Nowak, D-Buffalo, called for a Congressional investigation of the EPA delay. He made the call in a letter to Rep. John E. Moss, D-Calif., chairman of the House Subcommittee on Oversight and Investigations. That subcommittee deals with enforcement of Congressional acts.

Dietrich said the chemical industry has been expanding in leaps and bounds since the early part of this century, but it wasn't until the 1960s that the states began programs to regulate the disposal of chemical wastes.

And he is critical of the state program saying "they're still not very good."

For the moment, EPA is leaving the problem in the hands of the states, "and putting all our energies into the prevention program (RCRA)," Dietrich said, adding:

"If we stopped to look at the retroactive problem, we would have to divide our resources, and the prevention program would be slowed down."

Bury Now, Pay Later

Now Used for Hazardous Wastes Idaho Launching Sites for Missiles

By MICHAEL DESMOND
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Two $55 million relics of the missile age have become one of the more ingenious methods of disposing of the hazardous wastes of the industrial age.

Wes-Con Inc. of Twin Falls, Idaho, owns two complexes each built to launch three Titan missiles. The siloes are 160 feet deep and 50 feet across. The concrete is 16 feet thick at the bottom and 11 feet thick on the sides. The sites were built about 20 years ago and were closed in 1964.

The firm has already filled two of the three silos at a near-desert site near Grand View, Idaho, and is well on the way to filling the third. A second site about 40 miles away in Bruneau, is being prepared to take waste in its three siloes.

Perhaps 300 miles away, in an equally dry area of eastern Oregon, Chem-Nuclear Systems Inc. of Bellevue, Wash., operates a disposal site based on the ability of dry desert air to dry out wet waste. Chemical wastes are simply put out in 400,000 gallon ponds and left to dry in the sun.

California a Leader

California has some hazardous waste treatment sites which use the same approach. That state may also have the nation's best system of rules and regulations governing disposal of hazardous chemicals. California also has more good disposal sites than any other state, according to James Stahler, environmental engineer in the San Francisco regional office of the Federal Environmental Protection Agency covering California, Arizona, Hawaii and Nevada.

"It's one of the most aggressive, progressive states in the union," Stahler said of the state's hazardous waste program.

He should know. Stahler was loaned by EPA to California in 1973 to write the state regulations governing solid and hazardous wastes. That was three years before Congress passed the Resource Conservation and Recovery Act of 1976 (RCRA) which is supposed to handle the problem on a national basis.

Chemical waste dumps—past and present—are threatening the health of the nation's men, women and children—present and future. This is the ninth in a Courier-Express series of articles about the incredible situation. It deals with the practices of Western states in coping with hazardous wastes.

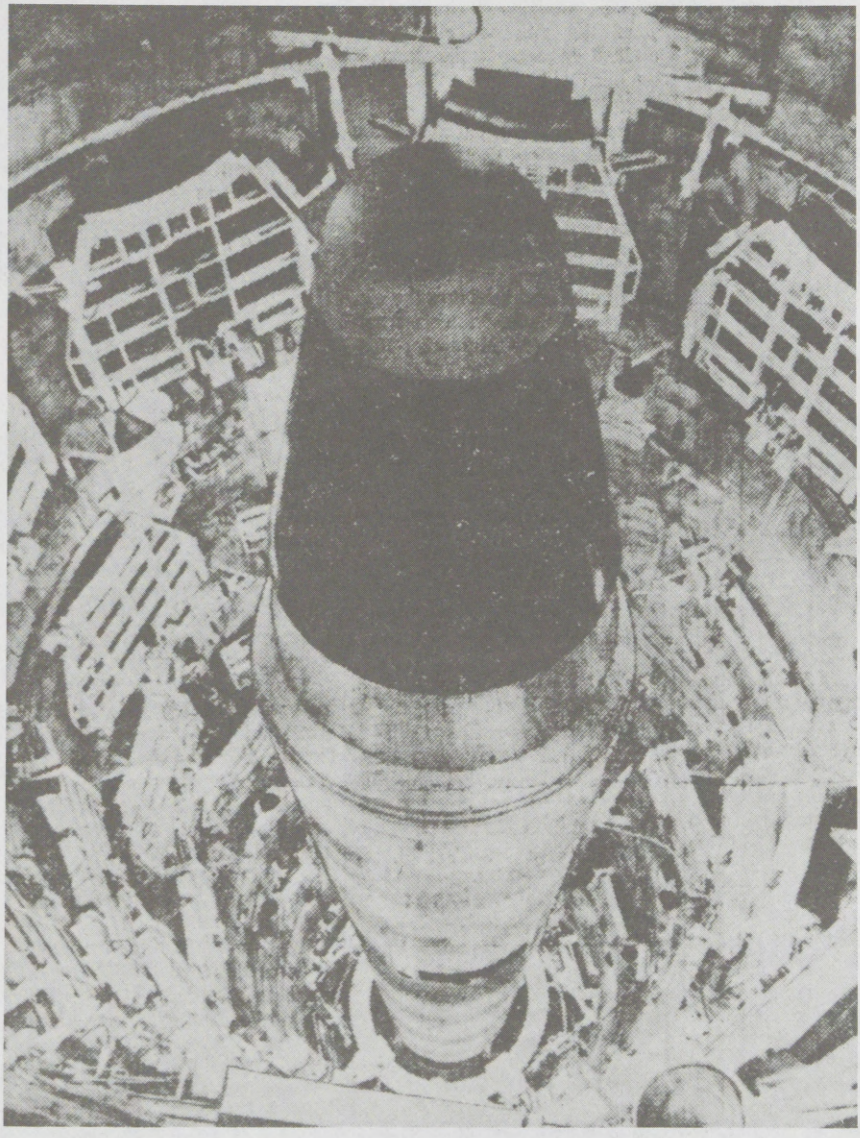
"Before RCRA was a dream," he commented, California was working on its law.

But, EPA is years away from putting the regulations to implement RCRA into effect.

California has to watch the chemical disposal problem: The state has an estimated 10 percent of the national total of 92 billion pounds of hazardous waste.

The Golden State now has nine hazardous waste sites licensed to handle hazardous wastes. When the law took effect on July 1, 1973, there were 18. The steady expansion of the state — "urban encroachment" — has cut into the total.

Recently a site near San Diego was closed because the operator decided residential areas were closing in on the location. A closed site like this in a residential area opens up the possibility of a situation similar to that of the Love Canal in Niagara Falls. There, a hazardous waste dump went bad forcing the evacuation of the neighborhood.



Associated Press

An Idaho Titan silo similar to this is now used as tomb for chemical waste
. . . missile age recycling

There is plenty of need for more sites in California.

"I cannot think of anything that this state doesn't produce or use or throw away," he commented on the state's industries.

Until recently, Stahler noted, "perhaps 50 percent" of hazardous waste disposal or treatment "left something to be desired."

There are bad past sites. Perhaps the worst is in Riverside, Calif., just outside Los Angeles. A quarry company operated a dump site there for several years, mostly taking heavy metal sludge and acids. The wastes were dumped in a series of pits running down a hillside on the edge of residential Pyrite Canyon.

"When the stuff was dried up, they would dig out the middle of the pit and dump it on the side," explained Stephen Herrera, staff engineer with the Santa Ana Regional Water Quality Board.

The site has been closed for five years and the previous owners "just walked away," he said.

But, last year, heavy rains washed into the pits, threatening to wash the entire complex and everything it contained down the hill and into a residential area. So, perhaps a million gallons of water and waste were pumped out into a nearby stream. The stream then overflowed onto adjacent land.

The pollutants also somehow seeped into the well of an elementary school 7,000 feet away, according to Mrs. Ruth Kirkby, secretary of a citizens group agitating for a cleanup of the entire site.

It isn't completely clear what went into the site. But, it is known to have received a variety of acids and a lot of metal sludges, especially from metal plating operations.

Mrs. Kirkby has been so involved in trying to get the site cleaned up she has even talked to Dr. Roger Herdman, New York State director of public health. She said she talked to Dr. Herdman because of the Love Canal situation in Niagara Falls.

She explained that she was worried that the air and water pollution in the area of the Pyrite Canyon might create the same sort of environmental disaster that occured in Niagara Falls, where dangerous chemicals seeping from a closed dump have forced evacuation of a whole neighborhood.

California has appropriated $375,000 to clean up the Pyrite Canyon scene. Stahler has some doubts that the money is anywhere near enough.

"Like Love Canal, they were first talking $4 million, then $8 million," he said. "Now they're talking $10 million."

Said Mrs. Kirkby:

"We just wish we knew what to do about this. It's a terrible thing."

Both the Chem-Nuclear Oregon site and the two Wes-Con Idaho sites are attempts to get around the location problem. That is also true of a site in Beatty, Nev. All four sites are located in extremely isolated, nearly desert areas.

The sites are located in far, out of the way places, with essentially no neighbors. In addition, the soil on the site will not carry waste materials far away. Ground water is so far below the site, it is not likely to flush waste away to threaten neighbors.

For exampe, at the Chem-Nuclear Oregon site, if a pond were filled with 53 inches of water on Jan. 1 of an average year, it would be dry on Dec. 31 of the same year because of evaporation. There is negative precipitation there.

Tight State Rules

The site operates under rigid controls by the State of Oregon. The state must approve every waste material which goes into the site.

"Our policy is that if a chemical can be recycled, we require it," Eduardo G. Chiong, an engineer in the Hazardous Waste Section of the Oregon Department of Environmental Quality, told The Courier-Express.

Ironically, the man who set up the Oregon system as a state chemical engineer is now on the other side of the fence. Patrick H. Wicks is now manager of chemical disposal and treatment for Chem-Nuclear.

Oregon agents make frequent visits to the site. The company relies on the producer of the waste for analysis of the contents.

"We don't do any testing. That's done before it's shipped. It would be prohibitive. It's up to the integrity of the manufacturer," said Frank Dement, site manager.

"Bathtub Rings'

Chem-Nuclear has five work areas. Two are essentially waste lakes. These are 400,000 gallon areas. One contains acids and the other contains basic wastes. The basic waste lake has rings of color around it from the different wastes, like rings on a bathtub.

Another pit started out as 500 feet long and 30 feet deep. It is gradually being filled from one end with a variety of solid wastes. In its bottom is a vast, sealed concrete box. It contains road and roadside materials which were contaminated when a tank truck load of pure cyanide was wrecked and spilled onto the highway.

A wrecked truck is also buried at Chem-Nuclear. It was contaminated in a highway wreck and simply buried because it wasn't worth cleaning and fixing.

The Oregon area has two large pits for liquid waste, other than the acid and basic tanks. Here also, the dry air is used to simply dry out the waste. As with much chemical waste, there is a lot of water in it.

Dirt Cap Applied

The firm has piled up to 11 feet of sludge in the bottom of two other pits used for other liquids in 30 months of operation.

38-748 0 - 79 - 4

When 27 feet thick, the dumping will be stopped and the material allowed to dry. Then, a three foot thick dirt cap will be put on it.

At the Grand View Idaho site, Wes-Con has a little different approach. The site in use now is located in the middle of a vast natural deposit of the special "bentonite" clay used to seal hazardous wastes. So, a machine just digs the clay out and piles it up to be used as back fill.

The drums of waste are put into the hole with a special bucket and covered over with clay. Originally, drums of chemical wastes were just dropped into the hole. But, there were fires and explosions and government objections. So, the procedure was changed.

Most of the material going into the silos comes from agriculture, according to Gene Reinbold, the company president. This covers pesticides, wastes from making pesticides and related materials and pesticide containers. A small underground room is used for disposal of aerosol containers, many of them full of varying types of chemicals.

Valuable Copper Stored

There are about 3,000 cardboard drums of copper sludge stored around the Idaho site. Reinbold said the material is about 30 percent copper.

"We're now trying to get an engineer to get the copper out," he said. "There's a million dollars worth of copper out there."

The Wes-Con site in Bruneau is now different. In about six months, Reinbold said, dumping will start in the three siloes there. Now, in a site tour conducted for The Courier-Express, it can be seen where the $55 million went when the Air Force built this missile site.

Both the Grand View and Bruneau sites are located not far from Mountain Home (Idaho) Air Force Base, which is still operating.

One vast, vaulted underground room held a complete power plant to operate the entire complex without outside power. Another three story area held the living quarters and the control center. Seemingly endless tunnels link the sections.

Deep Water Table

In both Grand View and Bruneau, the water table is 2,000 feet down below the site. (At Chem-Nuclear in Oregon, the water is only 800 feet down, but there are two layers of hard rock in between.)

Wes-Con is licensed to take solid materials contaminated with PCB, but it can't take liquid PCB.

Reinbold said he plans to use underground areas in addition areas beside the six silos for special storage.

"We haven't decided yet. It depends on what we get. We want to use it for long term heated storage of some materials which can be recycled four or five years down the line," Reinbold said.

Materials for the site come from all over, he said. Some come from as far east as New Jersey, he told The Courier-Express.

Various wastes, also especially PCB, come in from Canada.

Roger Fuentes, a chemical engineer with the EPA regional office in Seattle, was unable to say how much chemical waste comes from Canada, however, he said:

"We don't have the information as far as movement of hazardous waste. We don't have the facilities to keep track of that without RCRA."

Law Not Implemented

RCRA is a federal law which provides for "cradle to grave" handling of hazardous waste. But, EPA has not yet been able to provide the regulations to implement the law in the almost two years since it became law.

As a result, the law is essentially a dead letter.

There doesn't seem to be much urgency about the hazardous chemical waste situation in some western states.

Washington, for example, has no hazardous waste disposal site yet. But, it does have an elaborate set of rules which took effect Aug. 1 to define what is an "extremely hazardous" waste. The state estimates there are somewhere between 20,000 and 60,000 tons generated each year of extremely hazardous waste.

"They are currently very soft numbers," according to Tom Cook, head of the hazardous waste section of the Department of Ecology in Olympia, Wash., meaning the estimates are very rough.

Cook said firms in his state can treat the waste, store it on site or send it out of state. That sent out of state usually goes to Wes-Con in Idaho or Chem-Nuclear in Oregon.

Small Chemical Industry

The State of Idaho keeps an eye on Wes-Con. The firm takes care of one of the state's problems, the disposal of empty pesticide drums.

Jerome Jankowski, senior environmental quality specialist in the Solid Waste Section in the Idaho Department of Health and Welfare, noted, "We don't have much in the way of a chemical industry."

Perhaps the longest shipments are from Hawaii. EPA's Stahler said there are no chemical waste regulations in Hawaii. All Hawaiian waste ostensibly is shipped to the U.S. mainland. However, there is some evidence of improper dumping of chemical wastes in the Aloha state.

Arizona is now completing its hazardous waste regulations, with a target date of Nov. 1 for effectiveness. Stahler said they are based on the California rules. The state will lease a treatment and dump site to a private operator for hazardous waste after the regulations are completed.

An isolated site is being considered.

Stahler put his finger on one of the key issues when he told The Courier-Express:

"Nobody wants a garbage dump in their backyard. But, God knows the stuff has to go somewhere."

SUNDAY, SEPTEMBER 24, 1978

Editorials

These opinions represent the judgment of The Courier-Express Editorial Board

Get Busy on Waste Cleanup . . .

The federal Environmental Protection Agency (EPA) poses an intolerable problem when it claims that it is powerless to do anything about chemical waste dumps which it admits are an immediate threat to the nation's health and safety. There are 300 such hazardous dumps, according to the EPA, and it would cost $1.5-billion to clean them up.

The EPA, according to Gary Dietrich, the agency's associate deputy assistant administrator for solid waste, is concentrating on "prevention" through the Resource Conservation and Recovery Act (RCRA), enacted in 1976 to control the generation, treatment, transportation, storage and disposal of hazardous or toxic wastes. The agency is already months behind schedule in issuing implementing regulations for the act, and does not expect to release such rules until January, 1980. Rep. Henry J. Nowak, D-Buffalo, has called for a House probe of the delay and for legislative hearings on the waste problem.

While the prevention aspect is important, it should not preclude doing something about the present critical situation. EPA says that it doesn't have the necessary authority—but we find that hard to believe. What apparently is true, however, is that out of a $1.2-billion budget and almost 11,000 employes, the agency is utilizing only 161 workers and spending only about $25-million to deal with the problem of hazardous wastes. Incredible!

EPA says it doesn't have the money or the authority to deal with what amounts to 300 Love Canal situations. It's time EPA got both. It's hard to imagine that the funds should be any insoluble problem. **In a $500-billion federal budget, surely $1.5-billion, or at least a start on that amount, can be found to remedy existing toxic threats to the American public's health. Come on, Mr. President, how about taking some money from the $7.1-billion to $9.2-billion being considered for foreign aid—some of it destined for such communist-led countries as Yugoslavia, apparently—in current legislation in Congress?**

. . . More Action on Canal Funding

Meanwhile, we were pleased by the House of Representatives' action last Tuesday approving an appropriation bill which includes $4-million for the scheduled cleanup efforts in the Love Canal area of Niagara Falls. The funds are part of an omnibus appropriation for the Department of Housing and Urban Development and other such independent government agencies.

In the Senate, where Sens. Daniel P. Moynihan and Jacob Javits earlier attempted — unsuccessfully — to tap a $10-million emergency pollution control fund authorized under the Water Pollution Control Act, we hope there will be prompt action on the agencies' appropriation bill containing the Love Canal cleanup money. **Frankly, it's hard to understand the reported White House objections to appropriation of the emergency pollution control funds. In a way, it ties in with the picture, sharply etched in The Courier-Express' continuing series on waste-disposal problems, of a general foot-dragging.**

Shouldn't the President be ordering the Environmental Protection Agency to bolster its forces in the toxic waste cleanup field? What sense of priority is being used in this matter? If the EPA, on the other hand, is not following the actual presidential wishes with regard to it redirecting its resources, as has been suggested by at least one congressman, then certainly someone at EPA should be called to an accounting.

Still No Rules

EPA Lags Badly On Waste Curbs

By DAVID E. LYNCH
Courier-Express Washington Bureau

WASHINGTON — Back in 1976, the sponsors of the Resource Conservation and Recovery Act called the vexing solid-waste problem "the stepchild of the environmental movement."

But Congress responded with surprising speed and unanimity as the solid-waste measure sailed through, supposedly making resource conservation and recovery a legitimate member of family.

That was on Oct. 21, 1976, almost two years ago, and the environmental groups are now saying the Environmental Protection Agency (EPA) is still treating the problem like a stepchild.

THE LAW THAT WAS enacted on Oct. 21 "required" the EPA to issue regulations needed to implement the hazardous waste section of the statute within 18 months.

The EPA now says those regulations won't be ready until January of 1980. The environmentalists who are suing to speed up this process say they probably won't be ready by then.

HERE'S WHAT THE LAW required EPA to do concerning hazardous wastes:

—Issue regulations within 18 months defining the ter hazardous wastes and listing specific hazardous wastes.

That won't be completed until 1980, according to Douglas M. Costle, administrator of the EPA.

—Issue regulations within 18 months requiring permits to operate hazardous waste treatment, storage or disposal facilities.

That won't be completed until 1980, according to the EPA.

ESTABLISH A CIVIL penalty of up to $25,000 a day for hazardous waste violations that take place after state or federal compliance deadlines; set a criminal penalty of up to $25,000 a day and/or one year in prison for knowing violations.

Because the regulations are not in place, there are no compliance deadlines to violate and, therefore, no penalties under the law.

Those who have been highly critical of the EPA's delay say it is contributing to the deadly chemical waste problem that it is supposed to be solving.

FIRMS PRODUCING chemicals wastes are loading toxic, poisonous wastes into their less than totally safe sites as fast as possible before these regulations are issued.

And the "midnight haulers," the illegal waste dumpers who operate under the cloak of darkness, have one less federal penalty to worry about while EPA struggles with the regulation.

CONGRESSS HAS BEEN attempting to come up with an efficient national policy on solid waste since 1965, when it passed the Solid Waste Disposal Act. The Resource Conservation and Recovery Act actually amended that statute, which was strengthened in 1970 by the Resource Recovery Act.

The 1976 bill authorized $365.9 million for solid-waste programs in fiscal years 1978-79. That included $80 million for EPA's general use, and $70 million to finance state programs, $50 million for state hazardous-waste programs and $35 million to help finance demonstration projects.

The bill also required states receiving federal grants to ban all open dumping within five years of enactment.

EPA Expects More Suits Once Rules On Hazardous Wastes Are on Books

By MICHAEL DESMOND
Courier-Express Staff Reporter

SAN FRANCISCO — Puffing away on a pipe, Steffen W. Plehn had a look of casual superiority as he sat on a platform looking out over a room full of people who are in the garbage and hazardous waste business.

Plehn is the Environmental Protection Agency's deputy assistant administrator for solid waste. In that post, he is in charge of the Federal Resource Conservation and Recovery Act (RCRA). This is the federal law supposed to be the solution to all problems in the field of solid and chemical waste.

It is also not in effect.

Regulations governing the application of the law are now not due until January 1980, despite the mandate, in the law passed by Congress in 1976, to have them completed April 21.

PLEHAN WAS here to address the seventh National Congress on Waste Management Technology and Resource and Energy Recovery, sponsored by the National Solid Waste Management Association.

Ironically, the association has notified EPA it will be suing the agency for its failure to produce the RCRA rules. EPA already has suits by the state of Illinois and two activist groups, the Environmental Defense Fund and Environmental Action, pending against for the same reason.

Other suits are expected.

Once the rules are finally ready to go, he said, "We'll probably be sued by a lot of people."



Steffen W. Plehn
. . . expects litigation

THE GOVERNMENT official said the rules are late because of the complicated procedures for putting them out. Then, speaking to The Courier-Express, he took a shot at Congress:

"It's only in the environmental area that Congress sets deadlines for regulations. In almost all cases, the deadlines set by Congress are more ambitious than the agency is capable of achieving."

At the same time, he doesn't think any more money would speed up the rules. "The Congress has given us all the resources requested in the budget," Plehn said.

THE SOLID WASTE chief is a professional bureaucrat. He is a graduate of Harvard College, where he also received a master's degree in public administration.

From 1972 until 1975, he worked for the U.S. Council on Environmental Quality, then switched over to be executive assistant to then EPA Administrator Russell Train. When Douglas M. Costle was named to head the agency by President Jimmy Carter in March 1977, Plehn stayed on as executive assistant. He was named to his present post by Costle 10 months ago.

The official is neither a lawyer nor a technician in the solid and hazardous waste field. In person, he looks more like an Ivy league college professor, with impeccable suit and wing tip shoes.

Plehn claims the agency is slow on the rules because of legal worries.

"OUR CONCERN is that our regulations be technically sound and fully defensible legally. Nothing would be gained by putting out regulations that would not hold up in court," he said.

He denied more resources would help:

"Any agency can use more resources. You can always use more resources. But, I don't think that's the primary constraint in achieving the regulations."

Plehn said government is simply slow to put out regulations.

Among the red tape, he cited requirements for environmental impact statements, economic impact analyses, public comment periods and complicated reviews inside each agency issuing rules.

PLEHN IS COUNTING on the individual states to do much of the future work in the hazardous waste field. RCRA will allow states to administer their own programs, with federal grants to pay for them. If the states can't or won't do it, he said, it will cost the federal government a lot of money.

In the fiscal year which starts Oct. 1, EPA is putting up $15 million to help states locate hazardous wastes and start their own cleanup programs. Last year, EPA put no money into such activities. This year, the agency put up $4.7 million.

"That's a fairly significant rate of increase," Plehn said.

EPA is handling things that way because the agency claims it has no money or legal authority to look into past and closed dump sites. In fact, the agency claims it can't do anything about dump sites now open but to be closed by the time the regulations take effect.

EVEN WHEN the rules are in effect, they won't do anything about situations such as the chemically devastated Love Canal area of Niagara Falls, for example.

EPA admitted to The Courier-Express Thursday that 300 closed chemical waste dumps around the nation are an immediate threat to the nation's health and safety.

"Off the top of my head, I know of 300 situations like the Love Canal problem that stick out like sore thumbs," according to Gary Dietrich, associate deputy administrator for solid waste. He said there are hundreds of thousands more that the EPA does not know about.

The agency has estimated it would cost $1.5 billion to clean up just the 300 known dumps.

EPA said President Carter would not release even the $10 million that could be used toward cleaning up some of these sites.

BUFFALO COURIER-EXPRESS, Sunday, September 24, 1978

$6 Million Vanishes in Hudson PCBs, $25 Million More Sought

By MICHAEL A. HITZIK

After spending $6 million in the last two years studying how to rid the Hudson River of toxic PCBs and dispose of the chemicals, New York State still doesn't have much of an answer.

Furthermore, Environmental Conservation Commissioner Peter A.A. Berle is seeking $25 million from the federal government to complete the chore.

PCBs (polychorinated biphenyls) were manufactured until July, 1977, by the General Electric Corp. for use as fire retardants and coolants in electrical transformers.

After gathering evidence that the compounds could cause nervous disorders and other ailments, the federal government banned their manufacture last spring. Existing PCBs, however, may be recycled for use until 1983.

State Hearing

It was General Electric's plants in Fort Edward and other Hudson River communities that dumped PCBs into the river, contaminating it so thoroughly that commercial fishing is now banned from Fort Edward to New York City.

General Electric had dumped more than 600,000 pounds of PCBs into the river basin between 1950 and 1976. Although it had obtained state and federal discharge permits, a state hearing officer found the company guilty in 1976 of violating water quality standards.

The official placed full blame for the contamination of the river, however, on a combination of "industrial abuse and regulatory failure," according to Dr. Leo Hetling, research director for the State Department of Environmental Conservation.

Accordingly, the state and GE reached an agreement in September, 1976, calling for a joint $7 million research and cleanup fund. GE was to provide $3 million for a cleanup study and $1 million for chemical research, and the state was to contribute the rest.

'Various Alternatives'

All but $1 million has been spent, said Dr. Hetling, mostly for a comprehensive study of the extent of contamination and of proposed solutions.

"The report looked at various alternatives," he said "ranging from doing nothing at all to dredging the entire river."

The favored approach, approved by an independent PCB advisory committee of state and federal officials and medical and chemical authorities, was to dredge just those "hot spots" where contamination of the river sediment was heaviest, removing 300,000 pounds of PCBs.

Under the agreement, GE began developing an environmentally-safe substitute for PCBs, which it claims to have found and placed into production.

The company's effort to find a means of disposal or decontamination of the PCB-laden river sediment has been less productive, however.

GE investigated three methods: pyrolysis, or "cooking" the sediment to degrade the PCBs; incineration, and finding whether bacteria exist naturally to destroy the chemicals.

Expensive Burning

It acquired a special permit to send 40 drums of sediment to a New Jersey laboratory for incineration and found that temperatures of 1,000 degrees Fahrenheit and higher destroy the compounds.

"But to reach those temperatures," said Dr. Manuel Aven, manager of GE's physical chemistry laboratory in Schenectady, "you have to burn an awful lot of oil to run the furnace."

Figures developed by the state show that the cost of incinerating the 1.6 million cubic yards of river bottom produced by "hot spot" dredging would come to $16 million in fuel alone, added to $21 million in dredging costs and undetermined transport charges.

Aven's conclusion was that incineration is "rather prohibitive economically," although GE will leave to the state the decision on whether the method is worthwhile.

Matter of Evolution?

Pyrolysis, in essence another form of incineration, was similarly deemed overly costly.

GE scientists, however, did discover that bacteria exist in the environment with an appetite for PCBs, breaking them down into water, carbon dioxide, and carbon-based acids. The organisms, apparently evolved precisely because PCBs were available for them to feast on.

"But it's premature to discuss practical applications of the finding," said Dr. Ronald Brooks, manager of the Schenectady laboratory's environmental unit.

He said GE's goal is to determine the conditions under which the bacteria work best and most rapidly to consume PCBs, "conditions we are quite far from predicting in the lab."

Tempory Solution?

Aven said that, although GE's obligation to continue its study has expired under the terms of the agreement, investigation of bacterial disposal will continue as part of the company's general microbiology program.

In the meantime, the state's effort to clean the river will be limited, money permitting, to dredging the hot spots and depositing the sediment indefinitely in carefully constructed landfills.

"The problem there is maintenance," commented Dr. Hetling.

No sure way has been found to guarantee that a toxic landfill will be properly maintained through what could be decades of research.

Nevertheless, the department has combed all land within three miles of the Hudson seeking adequate landfill sites, away from residential areas, wetlands, pine forests, historical sites and other important regions.

Forty acres in the upper Hudson basin meet the department's "strictly technical criteria," said Dr. Hetling, but still face public and political resistance and extensive environmental studies.

Dreging the Worst

The remaining $1 million from the GE-state agreement is being used to dredge a section of the Hudson just south of Fort Edward where contamination was worst and was compounded by the demolition of an unused Niagara Mohawk Corp. power dam in 1975.

The demolition sent PCB-laden sediment that had accumulated behind it downsteam. The dediment is being removed and the local shoreline covered with "riprap," or crushed stone, to end the infiltration. The sediment is deposited in a clay-lined landfill in the Town of Moreau, across the river from Fort Edward and about 40 miles north of Albany.

Critics See EPA Head As Too Cautious to Act

By DAVID E. LYNCH

WASHINGTON — Douglas M. Costle, 38, the administrator of the Environental Protection Agency is a cautious man, a man who says his agency "should do its homework" before taking any action.

He said that early in his administration when national environmental groups hailed his appointment as a signal that President Carter would give a high national priority to preserving and enhancing the environment.

The environmental groups that have been waiting almost two years for Costle to issue regulations on hazardous waste disposal now say he is too cautious, that he is over doing his homework while the health and safety of the American people are imperiled by almost daily discoveries of hazardous waste dumps.

THE ENVIRONMENTAL Defense Fund and Environmental Action as well as the State of Illinois earlier this year lost their patience. They sued the EPA for failing to issue regulations on the Resource Conservation Recovery Act (RCRA).

The law that regulates solid wastes from "cradle to the grave" was enacted by Congress in 1976 with instructions to EPA that the regulations were to be issued within 18 months. That deadline was up last April, and Costle now says the regulations necessary to implement the law won't be ready until January of 1980.

Leslie Dach, the science associate at the Environmental Defense Fund, doubts that they will be ready by then.



Douglas M. Costle

. . . a cautious man

Top Priority

Dach and other environmental leaders met with Costle about three weeks ago to discuss the delay. Dach said the administrator assured them that the RCRA regulations were his top priority. But he is being especially cautious in an effort to make sure the rules stand up to the inevitable court suit that will follow their issuance.

"I don't think Costle is purposely delaying the regulations," Dach said. But Dach is highly critical of Costle's approach to the job.

He said the EPA has all the data it needs to start writing the rules. "It's just that they're afraid to bite the bullet on tough policy issues such as how broad and stringent the rules should be."

Faults Costly

He faults Costle for not stepping in and putting down the "quiet warfare" between the EPA departments that has arisen through the rule making process.

Dach says RCRA has the potential to virtually control air and water standards, and the people working in those departments and others in the agency are afraid RCRA will take away some of their authority.

He says Costle's schedule for issuing the regulations is "filled with fat," calling for a six-month policy review period after the public has had 180 days to comment on the proposal.

Review Period

The actual rules are expected to be ready this coming January. A year-long review comment period is to follow. Dach and his associates say this can be cut inhalf.

He says the policy questions should be answered by now, never mind next year. "Costle is being too cautious."

This cautious Costle has caused many in the environmental movement to take another look at the man they thought would give them the "get tough" administration they were looking for.

They say he let the Carter administration get away with too much in its energy and anti-inflation programs.

CLEAN Air

Energy Department Head James R. Schlesinger has publically opposed Costle's enforcement of clean air standards, saying it runs counter to the administration's push for the increased use of low sulfur coal from the west.

Robert S. Strauss, the former Democratic party chief who heads Carter's anti-inflation efforts, has called on Costle to ease off on environmental regulations to help businesses hold the line on prices.

Dach and others in the environmental movement say Costle was at first cowed by Strauss and Schlesinger, who were pressing their points in speeches throughout the country.

Opportunity Missed

Dach said Costle missed the opportunity to "get out in the public arena" and fight for his programs against Schlesinger and Strauss.

The science associate says the EPA administrator seems to be flexing his muscles a bit now. He is fighting against the pressure coming from Schlesinger and Strauss, but he lost some important early time.

Asked to rate Costle's performance to date, Dach gives him a "B", saying the administrator has "done a lot better than his predecessors."

Costle was viewed as a natural for the job when he was first appointed by President Carter in 1977.

In Carter Mold

He was a relatively young 37, a Liberal to moderate Democrat in the Carter mold, a member of the federal commission that recommended the creation of the EPA back in 1970. A former justice department lawyer, he was commissioner of the Connecticut Department of Environmental Protection.

His work in Connecticut earned him the respect of both the environmental groups and industry.

He also came into an administration that promised to give its EPA more support than the administrators under former Presidents Nixon and Ford had.

Incurred Rath

Costle has had it relatively easy up to this point. Like every EPA administrator before him, he has at one time or another incurred the rath of industry and the environmentalists. It comes with the territory.

But that has been a "piece of cake" compared with what he faces now. His delay on the RCRA regulations has angered the environmentalists.

The actual rules are sure to disappoint both the environmentalists and the industrialists, with the environmentalists seeing the rules as too narrow and the industrialists as too broad.

And the people living around the estimated 20,000 chemical dumps located throughout this country might complain that the regulations are neither too tough or too weak, they're too late.

Bury Now, Pay Later

Jailed Jerseyites Haunted by Waste

By MICHAEL DESMOND

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William J. Carracino, president of the Chemical Control Corp. of Elizabeth, N.J., will have time in the next couple of years to think about ilegal dumping of chemical waste.

On Sept. 8, Carracino was given a two- to three-year sentence in a New Jersey state prison after he was convicted on a series of charges involving illegal disposal of chemical wastes. He also was fined $22,000 in Essex County, N.J., Superior Court.

He was not alone. Convicted with him was a group of his employees, on the same charges. One was given the same jail sentence and fined $20,000. Another was given one year in the county jail. An employee who testified for the prosecution received 30 days in the county jail.

The corporation was fined $75,000. It has new ownership, New Jersey officials said.

The firm operates from a waterfront site in Elizabeth. There is no fence and waste drums are piled up right to the curb line, a visit from The Courier-Express found. A stench hangs over the area.

Rhode Island Suit

Chemical Control has been a well-known problem firm in the waste disposal field. A suit is pending against it in Rhode Island over a site in Smithfield, R.I., where many different chemicals were dumped.

The Elizabeth firm is a small one. But large corporations can have problems in waste disposal, too.

The Hooker Chemicals & Plastics Corp. has received a great deal of attention recently as the company which once operated a dump site in the Love Canal section of Niagara Falls.

A variety of potentially d e a d l y chemicals have seeped from the site, forcing officials to develop contingency plans for the evacuation of hundreds of families, perhaps permanently, if necessary.

But Hooker also is well known to officials in Ohio and Michigan because of the disposal of chemical waste from the firm's plant in Montague, Mich.

Tennessee Incident

State and local officials on Long Island are familiar with the firm, since vinyl chloride formerly made in a Hooker plant turned up several years ago in wells at the Grumman Aerospace Corp. in Bethpage.

Anglers in the Niagara Frontier area are familiar with Hooker because of discharges of Mirex from its Niagara Falls plant found in fish in Lake Ontario.

Chemical waste dumps — past and present — are threatening the health of the nation's men, women and children—present and future. This is the tenth in a Courier-Express series of articles about the incredible situation. It deals with the case histories of several disposal incidents.

The Love Canal situation has made many average citizens more likely to spot similar activities.

Buty in Toone, Tenn., last winter, it took only the sudden addition of color to local drinking water to make local residents wonder what was going on. The water developed a strange odor, like that of an insecticide, and a rash of stomach cramps and dizzy spells hit.

Velsicol Chemical Corp. of Chicago had dumped 350,000 55-gallon drums of waste

Chemical Glossary

CHLORDANE — A pesticide whose use is now banned.

C-56 — The trade name of the Hooker Chemicals & Plastics Corp. for hexachlorocyclopentadiene. Very little is known about its effects on humans, but in industrial use very low exposure is recommended.

HEPTACHLOR — Another now banned pesticide closely related to Chlordane.

KEPONE — A pesticide used against ants and roaches. It is suspected as a chemical which causes cancer in humans. It is known to cause nerve disorders and liver damage in humans.

MIREX — A pesticide used against fire ants. It is thought to cause liver damage and some animal birth defects.

PHOSVEL — A pesticide which causes severe nerve damage to humans and kills in relatively low doses. It was made in this country but was never formally licensed for use here.

TRIS-BP — A flame retardant used in children's sleepwear. It was banned when research indicated it may cause human cancer and that did cause genetic damage in laboratory tests.

VINYL CHLORIDE A chemical used to make plastics, especially polyvinyl chloride. Vinyl chloride can cause human cancer.

from its Memphis plant in a field outside Toone. The waste included toluene, hetaclorobenzene and tetrachloroethylene.

Company Denial

But the company denies that, just because many of the same chemicals are in the water and in the wells, the two are connected.

"We don't believe there is any evidence or reason to believe up to this time that any underground contamination could have taken place," according to Richard Blewitt, Velsicol director of public affairs.

"One or more chemicals found in those wells could not have come from our former site," he told The Courier-Express.

The firm operated the site from 1965 to 1972.

Velsicol and Tennesee are now doing a study to try to determine exactly what did happen in that rural area of southwest Tennesee.

The industry journal "Chemical Week" said in its Aug. 23 issue of company difficulty:

"No chemical company has probably faced a greater one: survival after a series of environmental calamities and perhaps just plain bad luck. For after a relatively uneventful first 40 years or so of existence, Velsicol in the past four years has shot into prominence as an 'environmental bad guy,' the butt of snide remarks even within the industry."

Seweage Plant

In addition to Toone, Tenn., the company is known for its manufacture of the pesticide Phosvel which allegedly caused nerve damage in production workers; its manufacture of the now banned pesticides Chlordane and Heptachlor; manufacturer of the fire retardant Tris — investigated as a suspected cause of cancer — used in children's sleepwear, and an incident of allegedly illegal waste dumping.

On March 29, 1977, a total of 35 employees of the Morris Forman Sewage Treatment Plant in Louisville, Ky., were taken to a hospital for care of blisters, sore throats and chest pains.

For the next two months, 100 million gallons of sewage per day was diverted straight into the Ohio River. The plant and sewer lines were found to be contaminated with three highly toxic chemicals used to make pesticides.

Eventually, investigators claimed to have tracked the material back to Velsicol. The Chicago chemical firm had hired a company to dispose of waste. The first firm hired a second firm. The president, secretary-treasurer and an employee of the second firm were subsequently indicted,

charged with dumping the wastes into a sewer in an abandoned lot.

Points to FBI Verdict

Velsicol claims an investigation by the FBI found the firm "did not act negligently."

Bruce Davis, executive vice president for the Industrial Chemicals Group of Hooker, made a similar claim — that a reputable company was hired to dispose of waste — to The Courier-Express in two separate incidents involving the Montague, Mich., plant.

In one case, Davis said he was unaware of the facts until they were pointed out to him by The Courier-Express.

He was asked about 6,500 gallons of a chemical known as C-56, used to make pesticides, which were sitting in a decrepit Summit National Services chemical treatment site outside Akron, Ohio. Davis initially denied the chemicals in a tank truck and a standing tank were from Hooker.

Several hours later, he called back to admit the materials were from Hooker. He said lower-level company officials were aware of the material and had pictures of the messy site.

Michigan's View

On Friday, Davis said the material was still in the Ohio field. If Michigan officials have their way, it won't come back to their state. It has been in Ohio for nearly two years.

On March 11, 1977, Jack D. Bails, chief of the office of program review and project clearance for the Michigan Department of Natural Resources (DNR), reported on Summit National Services to Howard A. Tanner, DNR director. He reported on a meeting with Summit owner Don Georgeoff:

"You will note on page 2 of the meeting notes that the owner of the facility, Mr. Georgeoff, proposes to divert other waste sources to Michigan while he rebuilds his incinerator. At this point, I think a letter from the attorney general indicating that no such wastes will be allowed back into Michigan without an approve plan and disposal location."

'We Will Get it Out'

Davis later commented to The Courier-Express, "I don't know how the hell we're going to get it out. But, we will. From a legal point of view, we don't know if we have any responsibility. But, we will get it out."

Hooker and Michigan were involved in an earlier battle over waste from Montague. In the summer of 1976, Approved Industrial Removal was hired by Hooker to take away waste from the Michigan plant.

Hooker said it was told by the hauler the waste was going to a special disposal site near Detroit.

Instead, the hauler buried a 10,000-gallon tank in a garbage dump in central Michigan. About 5,000 gallons of C-56 was put into the tank. Later, 3,000 gallons of C-56 was put into another buried 5,500-gallon tank.

Someone blew the whistle on the situation. The state obtained a court order and dug up the waste site. The tanks were found and dug up. The C-56 was sent back to Hooker and, ultimately, sent to an incinerator in El Dorado, Ark., for burning.

Some C-56 is reported "migrating" in underground water from the Montague plant toward White Lake, a drinking water source there. Other chemicals allegedly have been found in nearby wells.

The state of New Jersey has a serious chemical waste problem. It is so serious that illegal dumping is a formal subject of investigation of the White Collar Crime Unit of the State Department of Law and Public Safety.

Deputy Attorney General Robert Ford told The Courier-Express he has a grand jury looking into the whole problem of waste disposal and "midnight dumping."

He added, "We're actually surveilling the industry."

It was the work of the White Collar Crime Unit which led to the indictments of the Chemical Control foursome.

The four were accused of emptying a tank truck containing chemical wastes into Elizabeth Creek and into a sewer which leads into Newark Bay; dumping drums of chemical waste at various locations, and digging pits with a bulldozer, filling them with dry garbage, saturating the garbage with chemical waste and hauling the contaminated garbage to landfills intended for municipal refuse.

Robert T. Winter is chief of the Enforcement Bureau in the Division of Criminal Justice of the New Jersey Department of Law and Public Safety. He admits it's not an easy area to investigate. Winter noted to a reporter:

"They make a quick dump and they're gone."

Tuesday: What can be done.

Bury Now, Pay Later

Waste Handling Solutions Can't Wait

By MICHAEL DESMOND

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Since hazardous waste isn't going to go away or stop coming, something has to be done, and done quickly, before it buries every citizen.

That may seem obvious to some, but it is apparently not obvious to a wide array of bureaucrats in various levels of government.

For example, the federal Environmental Protection Agency (EPA) is still dawdling on the rules which should turn the Resource Conservation and Recovery Act of 1976 (RCRA) into something more than a dead letter.

The federal Commerce Department has the legal responsibility to study recycling of wastes to re-use them. It has no money for studies.

Small Staff, Big Problem

California has one person assigned to try to find companies which can use waste from other companies. The Golden State produces an estimated 10 percent of the national annual total of hazardous waste. EPA estimates the national total at 92 billion pounds.

The federal Maritime Commission is paying for a study of sending waste out to sea to be burned in a special incinerator ship. The Courier-Express was present on Wednesday when Steffen W. Plehn, EPA deputy assistant administrator for solid waste, learned of that project for the first time.

EPA is now planning to look for former waste dump sites to see what is in them. Those plans were not announced until Thursday.

New York: History of Calamities

New York State has a history of chemical waste calamities. It has no record of where many waste dumps are. But it is doing a survey to determine where present sites might become future disasters.

Congress must bear strong criticism because it has done essentially nothing to force EPA to meet the mandates Congress wrote into RCRA. It has also provided very little money for research into newer and better methods for handling waste.

While all of this has been going on, the taxpayers are being hit for massive cleanup bills. A recent Michigan study indicates it will cost state taxpayers there $100 million to clean up a string of environmental disasters.

Industry Avoids Court Precedent

One attempt to determine who should pay for the cleanup in Michigan fell through when a group of major industries picked up the cleanup cost in one site rather than allow a court to set a precedent by deciding who should pay.

In general, the situation is a little like the old joke about having to hit the mule over the head with a two-by-four to gain his attention. Perhaps if some of the bureaucrats wandering through the problem were forced to live along the Love Canal in Niagara Falls or drink from wells in Toone, Tenn., or live downwind from the Silresim Corp. in Lowell, Mass., they might do something.

Courier-Express reporter Michael Desmond traveled 11,670 miles around the nation gathering material for a series of articles on the health and safety threat posed by the mishandling of toxic chemical wastes. This is the 11th and final installment. It deals with ways in which the huge chemical problem may be solved.



Three Urgent Areas

There are three distinct areas of activity which have to be undertaken. They are:

1. Completion of rules for the entire waste disposal industry.
2. Large amounts of research into re-using waste.
3. Research to change production methods and cut down the amount of waste.

Finding past dump sites is interwoven with all three.

The basic missing ingredient in the whole situation is any sense of urgency. Life in Washington, D.C., moves along at a steady, even pace, undistracted by any of the harsher realities of life.

Insularity in Washington

High EPA officials don't worry about what is going on outside of Washington. It is the lower level bureaucrats who have to go out and actually deal with the situations. It is an Eckhardt Beck (EPA Region 2 chief in New York City) personally going around Washington to get action on the Love Canal disaster in Niagara Falls, or a James Stahler (EPA environmental engineer in San Francisco) helping California put together a good hazardous waste program and then helping to sell the same program to other states.

There isn't a lot of that.

Instead, there is Plehn, who admits that no matter what the RCRA rules are, the

EPA will be sued by someone. But the agency is racing through the rules process like a snail.

Rules Delay Increases Dangers

Every day that the rules are delayed — they were due April 21 — bad dumps around the country are filling up and posing a future threat. EPA can do nothing until the rules are completed. So the federal government and many state governments are doing nothing about dumps that are being closed, in the absence of rules.

In trying to control the situation, government officials must watch for a different approach from industry. Based on past examples, some companies may just transfer the manufacture of chemicals overseas, leaving the waste overseas, also.

Many countries have no environmental protection rules at all.

Obviously, moving the production overseas might ease the waste problem in this country. It would still not end waste as a problem to human beings, but simply shift it.

Public Decisions Needed

The public is also going to have to make some decisions. If some of the chemicals and chemical products are going to continue in use, it is going to cost.

EPA's Plehn threw out an interesting figure in an interview with The Courier-Express the other day. He estimated it might cost $600 million to $800 million a year to meet the eventual RCRA requirements, when they take effect. That is a substantial amount of money, but only $3 to $4 a year for each citizen.

He pointed out the cost itself may bring about changes. EPA has studied the situation in West Germany, where chemical companies and other hazardous waste makers are now required to pay the full cost of getting rid of the waste. So the consumers foot the bill.

Under the long-delayed RCRA, that system would be instituted in the U.S.

Industry's Burden Eyed

"The volume of waste will be less. The amount of waste will be less when this program is in full operation," Plehn said.

The current target date for completion of RCRA regulations is January 1980. But environmentalists predict EPA will not meet that date.

Without a bludgeoning of EPA by Congress or the public, the agency will continue on its leisurely way. Congress required EPA to come up with the RCRA regulations within 18 months of enactment, which was in 1976. So EPA will be 21 months late — if it sticks to its own schedule.

Industry is already moving in the area of cutting down waste. For example, the Hooker Chemicals & Plastics Corp. has spent $10 million in its Niagara Falls plant on two of its manufacturing operations. One change cut out waste products completely. The other cuts the waste production drastically.

Waste Can't Be Hidden

Joe Louis once talked of the boxing ring as a place where you can run, but can't hide. This is true of hazardous waste. As has so often been horribly proven, it's everywhere.

The public has a stake in the situation. That is true for the captains of industry as well as the average citizen. Sometimes it seems as if every day brings another report of the bad effects of another chemical in another locale.

Today, the National Cancer Institute will release a report on the widely used chemical ethylene dichloride (EDC). The study indicates the chemical causes a wide variety of cancer in laboratory animals. The chemical is used to make vinyl chloride, which causes cancer in humans.

Hazardous Chemical Added to Food

The chemical is widely used for everything from making other toxic chemicals to producing spices. In a release, the Institute noted, "EDC may appear as a food additive as a result of its use to extract spices such as annatto, paprika and tumeric." Both annatto and tumeric are used to color food.

Long-Term Dangers Posed

A 1974 study estimated 163 million pounds of the chemical were lost into the environment in 1974 and that use is growing. In an EPA study of surface water in industrialized areas, the chemical was found in 26 percent of the waste samples.

The chemical also causes physical ailments of other kinds, especially blood disorders, and large doses are deadly.

The public must develop an awareness of the long-term dangers. The Love Canal dump had been closed for less than a quarter of a century when it failed to contain wastes. Whether newer and better designed burial sites will be more effective,

only time can tell. A "safe" site today could be the next generation's Love Canal.

Both in the long run and the short run, better controls on waste disposal are no substitute for not having as much waste to dispose of.

But there are problems. Richard Herbst is a lawyer and mechanical engineer who is a senior policy adviser in the U.S. Commerce Department. Asked what that department was doing in the chemical waste field, he said, "To be quite frank, we were not given appropriations under the law to undertake the sort of program we should have."

Paper Flows, Money Trickles

Another Commerce Department official commented, "There's a constant flow of paper from EPA and others in resource conservation." He added, "There's never been a penny appropriated for the Department of Commerce to carry out this act (RCRA)."

The Metallurgy Research Center of the federal Bureau of Mines is doing some research in the field of toxic wastes, especially with sludges containing some metal.

But, basically little is being done by either government or the private sector about hazardous wastes.

From his field perspective, Stahler commented, "We think there should be tax disincentives or even tax incentives." That is, toxic waste producers should be punished or rewarded for inaction or action.

Oregon has a somewhat different approach. Its policy is that if a material can be recycled, it must not be thrown away.

Occasionally, Plehn can cut to the heart of the issue. He told The Courier-Express:

"The problem does not go away. To the extent that wastes are not properly handled or disposed, they tend to come back and lay themselves at your feet. That's one of the grisly facts."

End of a series.

Courier EXPRESS
ESTABLISHED 1834 Buffalo Family Owned and Operated ESTABLISHED 1846

THURSDAY, SEPTEMBER 28, 1978

Editorials These opinions represent the judgment of The Courier-Express Editorial Board

'Silent (Till) Spring' on Waste?

With the federal Environmental Protection Agency (EPA) dragging its feet in dealing with the gargantuan problem of hazardous chemical wastes, must Congress do the same?

Rep. Fred B. Rooney, D-Pa., whose Subcommittee on Environment and the Atmosphere had scheduled hearings on the waste problems in June—they were never held—now says that he will not hold hearings until next spring on why the EPA has not put the Resource Conservation and Recovery Act (RCRA) of 1976 into effect and also on the problem of handling wastes already in the ground. (The EPA, which was supposed to come up with implementing regulations by last April 21, now says that the rules won't be ready until January, 1980.)

Why should a concerned public have to wait for hearings until the spring? Both houses are moving toward adjournment and the November elections. But surely a start could be made on the hearings immediately after the elections are over. **With a national waste problem as alarming as that disclosed in the recent series of articles in The Courier-Express, there is absolutely no excuse for untoward delay. We hope the Western New York congressional delegation, which has an acute problem in its own backyard, will push for prompt hearings.** Rep. Henry J. Nowak, D-Buffalo, has already requested the House Subcommittee on Oversight and Investigation to schedule hearings as soon as possible.

Meanwhile, only now is the EPA moving to acquire an inventory of the most dangerous waste dumps (an agency official has labeled 300 sites as being immediate health and safety hazards, but there are said to be 20,000 inactive, hazardous dumps throughout the country). Only 10 regional staff members are working on the inventory, which is expected to take up to 30 days. We find it incomprehensible that of more than 11,000 EPA employes, only about 160 are assigned to the solid-waste problem. This situation lends further support to the need for accelerating the pace of the investigation.

Courier EXPRESS
Buffalo Family Owned and Operated
Published Daily at 787 Main St., Buffalo, N.Y. 14240 © 1978 Buffalo Courier-Express Inc. Registered U.S. Patent Office SATURDAY, SEPTEMBER 30, 1978 Second Class Postage Paid at Buffalo, N.Y.

House Panel Schedules EPA Hearing

Unit to Eye Rules Delay On Wastes

Nowak Bid Results In Oct. 25 Session

By DAVID E. LYNCH
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WASHINGTON—A House subcommittee on Friday announced that it will hold a hearing Oct. 25 on the Environmental Protection Agency's failure to issue regulations to control the disposal of hazardous wastes.

As requested by Rep. Henry J. Nowak, D-Buffalo, the Subcommittee on Oversight and Investigations will also look into the possible need for legislation to deal with some 300 inactive disposal sites that the EPA says are immediate health hazards.

The subcommittee is the chief oversight panel in the House, with the main function of investigating the enforcement of congressional acts.

Cites Growing Concern

"The decision to conduct this hearing signals the growing concern in Congress and in the nation about the gravity of the problem confronting us and the need to begin an accelerated effort to develop a more comprehensive solution," Nowak said.

The congressman also said "The Courier-Express and reporter Mike Desmond are to be commended for the public service function they performed in the presentation of the series of articles that has focused intense attention on the depth and breadth of the hazardous waste disposal problem."

Staff reporter Desmond traveled 11,870 miles throughout the country collecting data on hazardous waste problems in preparation for an 11-part series that concluded in The Courier-Express Tuesday.

The subcommittee will try to find out why the EPA is more than five months late in issuing regulations necessary to implement the Resource Conservation and Recovery Act (RCRA) of 1976. The act would provide "cradle to grave" control over and protection from hazardous wastes.

Regulations Delayed

And the EPA now says these regulations, which were due April 21, will not be ready until January of 1980.

The subcommittee will also try to find out whether legislation is necessary to take care of the retroactive aspect of hazardous waste. RCRA is supposed to prevent further chemical contaminations arising from inadequate disposal of hazardous substances.

But the EPA says there is no law that now gives the agency the authority to deal with the 100 to 300 abandoned disposal sites that present an immediate health hazard.

The agency estimates that it will cost $1.5 billion to deal with those 300 sites alone, and that money is not available. Further, EPA estimated there are a total of 20,000 chemical dumps in the U.S.

Nowak, who first asked for the hearing last Friday, said Subcommittee Chairman John E. Moss, D-Calif., will not be able to conduct the hearing because of a scheduling conflict.

Rep. Gore in Charge

Rep. Albert Gore Jr., D-Tenn., will chair the hearing.

The subcommittee is working on a witness list. Nowak said he expects the first witnesses to be EPA officials charged with administering this program.

"It is our hope that as a result of this hearing, the congress can reaffirm its urgent intent that EPA move a great deal more expeditiously in implementing this vital program of controlling the haphazard disposal of toxic wastes," Nowak said.

Mr. GORE. Thank you, Mr. Nowak.

This hearing would not be taking place but for the efforts of you two. You mentioned it to me personally, and I read the excellent series of articles you referred to when they were placed in the Congressional Record by John LaFalce, and our next witness is the Honorable John LaFalce.

STATEMENT OF HON. JOHN J. LaFALCE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. LAFALCE. Thank you very much, Mr. Chairman and Mr. Waxman.

As the Congressman for the Love Canal area, I have been living with this problem on a daily basis since it first came to my attention in 1976–77. This testimony today on the progress that the Federal Government has made in the implementation of the Resource Conservation and Recovery Act of 1976 is extremely important.

On August 2, 1978, the attention of the world came to the Love Canal area of Niagara Falls, attention which was only previously given by a tremendous series of articles in the Niagara Gazette over the previous year and then followed up very, very well by the Buffalo Courier-Express and Buffalo Evening News.

But on August 2, 1978, when the New York State Commissioner of Health advised pregnant women and children under the age of 2 to evacuate the Love Canal area of Niagara Falls, the world began to pay attention to the serious problem posed by hazardous toxic substances.

Eventually over 230 families moved from the area. Their homes were being polluted by toxic chemicals seeping from the ground from an abandoned canal which had been used as a hazardous waste landfill site; 82 chemicals, some of which are suspected carcinogens, have been detected by the U.S. Environmental Protection Agency to be in the ambient air in the canal area.

This terrible tragedy, caused by toxic wastes having been indiscriminately buried in the canal over 25 years ago, has been referred to as just one of the many—perhaps thousands—ticking bombs, just one of the abandoned landfill sites around the country.

Let me first discuss RCRA. Congress, when it passed RCRA in 1976, hoped to prevent such incidents by providing for a hazardous waste regulatory program; a program to eliminate open dumping, a program for financial and technical assistance for planning enhanced solid waste management programs; a grant program to rural communities to improve solid waste management systems; and authority for research, demonstrations and studies.

Let me take a few minutes, because I think it is important, to outline in more detail the law as Congress passed it in 1976. In the interest of brevity, I have extracted only those portions which I think are relevant to today's testimony.

Subtitle A of the act requires the formulation of guidelines for solid waste recovery and the publication of guidelines on alternative solid waste management practices. These guidelines were to be issued within 1 year of enactment of the law.

Descriptions of levels of technical performance, leachate control, ambient air quality, diseases, safety, and esthetics were to be included in similar guidelines published after 2 years.

Subtitle B establishes an Office of Solid Waste within the Environmental Protection Agency headed by a Deputy Assistant Administrator to oversee the implementation of RCRA. This position is currently held by Mr. Stefan Plehn.

Subtitle C is the key to the bill as this is the section which is concerned with hazardous waste management. The law directs EPA, within 18 months of enactment, to identify which wastes are hazardous and in what quantities, qualities, concentrations, and forms of disposal they become a threat to health or the environment.

Additionally, EPA is mandated to issue standards for generators and transporters of hazardous wastes, respecting recordkeeping, practices, labeling, appropriate containers, use of a manifest system, and reporting of quantities and disposition.

Perhaps most importantly, persons owning or operating facilities for the treatment and storage of hazardous wastes are required to obtain permits within 90 days after identification and listing.

Permit applications must indicate composition, quantities, the rate at which such wastes are to be disposed of, and the location of the disposal site. EPA or States—in jurisdictions having hazardous waste programs—may revoke permits of nonconforming users.

Eighteen months after enactment of the law, the Administrator was to publish guidelines to enable the States to develop approved hazardous waste programs.

In order for EPA and State officials to enforce these requirements, the act authorizes them to inspect facilities, copy records, and obtain samples. The information obtained is to be made public.

Compliance provisions of the law are to be enforced through civil and criminal penalties.

Subtitle D requires EPA within 6 months of enactment to publish guidelines identifying areas with common solid waste management problems and appropriate units for planning regional solid waste management services.

The agency was also to promulgate within 18 months after enactment guidelines to aid the States in the development of solid waste management plans.

It is important to note that each plan must prohibit the establishment of new open dumps and require that all nonhazardous wastes be either used for resource recovery or disposed of in sanitary landfills. Existing open dumps were to be improved or phased out.

Within 1 year after enactment, the EPA was to promulgate regulations setting forth criteria for determining which facilities would be classified as sanitary landfills and which as open dumps.

Open dumps are prohibited except in situations where a compliance schedule is arrived at pursuant to a state plan. EPA under section 4005 of the act must also publish an inventory of all open dumps within the United States.

Another provision in this subtitle to be noted is one which allows for special communities. A special community is defined in RCRA

as one which has a low population and a high level of solid waste disposal.

States with special communities will be eligible for grants to be used for conversion, improvement, consolidation or construction of solid waste disposal facilities.

Grants will also be provided for rural communities assistance to be used to upgrade solid waste management facilities and will be apportioned by EPA to the States on a population ratio basis.

I am going to pass over my summary of subtitles E, F, G, and H, although all of them are extremely important and all of them require regulations to implement them.

Mr. GORE. Without objection, we will include the complete text of your statement in the record, including your discussion of these subtitles. [See p. 72].

Mr. LAFALCE. Thank you very much, Mr. Chairman.

Having outlined in brief the requirements of the law in the areas of solid waste, hazardous waste, and resource recovery, let me take up the issue of promulgation or lack thereof of regulations, which is so necessary for the implementation of this act.

The law is intended to regulate solid wastes from the cradle to the grave. However, most of the provisions which I outlined above have not yet been implemented because the U.S. Environmental Protection Agency, the Federal agency responsible for implementing this act, has not issued regulations.

As you will recall, the regulations for subtitle C, hazardous waste management, were to be issued within 18 months of enactment of the law. EPA now states that it will not be issuing the regulations for this section of the law until 1980 because it needs to resolve what are admittedly very complex technical, financial, legal, and environmental issues.

EPA's main concern, and perhaps to an extent justifiably so, is to issue regulations which will not be tossed out by the courts. However, by not issuing regulations until January 1980, which means that the regulations would not take effect for an additional 6 months after issuance, EPA is delaying by 2 years putting into effect a program which is urgently needed now.

By delaying the issuance of regulations for such important sections of the law as guidelines for solid waste management landscaping practices, hazardous waste criteria, identification and listing, standards for generators of waste, standards for hazardous waste treatment, storage and disposal facilities, guidelines for development of State solid waste management programs, criteria for classification of disposal facilities, and guidelines for procurement practices, we are rendering the law totally ineffective.

For all the good this law is currently doing, Congress might well not have passed it at all.

I have great respect for the Environmental Protection Agency. The individuals I have worked with on the Love Canal problem have been unceasing and untiring in their efforts.

It has been a difficult task to protect our environment, but EPA has still proven itself derelict in its duties and oblivious to its responsibilities for RCRA so that it can be implemented immediately.

By delaying issuance of the RCRA regulations, EPA may be compounding its problems by allowing those who handle, haul, or dispose of hazardous wastes to do so in an unsafe manner.

Additionally, those companies which are involved in the waste disposal business are hesitant to invest in new equipment for fear that the new facilities will not meet EPA standards when the regulations are issued in 1980.

Also, since the laws concerning dumping now in effect are primarily State laws rather than Federal laws, States with strict dumping regulations are hurting themselves because industries are moving to those States with weaker laws so that they can dump without penalty.

The solid wastes which we generate in this country as a result of our highly industrialized economy are here to stay. They will not go away but rather will increase exponentially in the future.

Thus, in order to prevent landfill operators from being able to conduct their businesses in an irresponsible manner, EPA must regulate.

The public fears the placement of these landfills which have created serious health and environmental problems for the surrounding areas due to a lack of regulation of the landfills' activities.

We cannot allow the public to remain fearful because the hazardous waste landfill must exist as long as our society continues to manufacture products from materials which are made from toxic substances which are not biodegradable.

We can only stem the legitimate, understandable fears of the public if we insist that the solid waste producers, handlers, haulers, and landfill operators be forced to conduct their businesses in the safest manner known to man.

I must make note at this point that I am not in favor of regulating for the sake of regulating. Government has a tendency sometimes to overregulate and cost Government and the consumer inordinate amounts of money.

However, there are times when I believe that Government must step in and regulate in order to protect the health and welfare of its citizens. This is such a time.

The President, as part of his phase II anti-inflation message delivered last week, requested Federal agencies to avoid issuing regulations which would prove to be adverse to the public interest, inflationary or not cost-effective.

EPA must not take this message to mean that the President does not want important laws such as RCRA to be implemented, and implemented immediately.

EPA should follow the President's directives by redirecting its resources toward necessary regulations and issuing them as expeditiously as possible. In this manner, the agency will also meet the public's expectations by living up to its obligation to preserve public health, safety and the environment.

Love Canal is a prime example of a ticking timebomb, an abandoned landfill full of toxic substances which literally exploded in the faces of the people who lived in the surrounding area because a law, such as RCRA, had not been on the books 25 years ago and

had not been enforced during the 1940's and 1950's when indiscriminate dumping occurred in the canal.

Unfortunately, RCRA does not adequately address the issue of abandoned chemical dumps. There are few provisions in the act which can directly aid us in effectively coping with the problems they leave behind, except perhaps section 8001(a), which provides for demonstration projects and under which we did get $4 million in funding and section 7003, relating to imminent hazards.

Congress, I believe, in all its wisdom should have properly addressed this issue in 1976 when it originally passed the law. However, it did not and, therefore, I have introduced legislation during the final days of the 95th Congress, which I believe might help us address the problems created by abandoned wastesites. I will discuss this bill's provisions a little later.

Nevertheless, RCRA as it exists today can help us prevent future Love Canals but only if EPA acts and acts immediately. There are hazardous waste disposal areas currently being operated which need to be regulated better so that the people who live near them can be assured that a future Love Canal does not exist in their backyards.

I have several such areas operating currently in my own congressional district. We in New York are fortunate because we have strict State legislation on the books.

However, the citizens who live, for example, in my congressional district in Lewiston, N.Y., near the SCA Services, Inc. site are very leery of the operations at the site because they do not have the assurance that it is being regulated according to Federal standards.

Not only are people afraid that these sites are not being regulated enough due to the lack of RCRA enforcement, but we also have the examples of PCB's being disposed of along the roads in North Carolina by a midnight hauler and illegal waste dumpers strewing wastes along cancer alley in New Jersey.

The results of these actions are additional pollutants in our drinking water, increased burdens on our sewage treatment plants, increased pollution in our rivers and streams, and increasingly higher amounts of unhealthy and even toxic chemicals in the air we breathe.

This additional pollution, much of which could have been prevented, costs taxpayers additional money, irreparably harms the environment and creates costs—both health and financial—for the individuals who suffer from these activities.

Many of us unknowingly suffer due to the toxics entering the food chain. The toxic wastes settle on the floors of the bodies of water from which we fish. I can give example after example. These are just a few of the examples of the total extent of the harm that has been done to our environment, health and well being.

By not having issued regulations for RCRA, EPA is creating a gaping hole in our national policy to reduce the amount of uncontrollable pollutants in the environment.

Mr. Chairman, Congress has passed other landmark legislation as well, and I detail that legislation in my prepared testimony, and I will pass over it for purposes of my verbal presentation.

They include the Federal Insecticide, Fungicide and Rodenticide Act of 1972, the Clean Air Acts of 1970 and 1977, the Hazardous

Materials Transportation Act of 1974, the Water Pollution Control Act of 1972, the Clean Water Act of 1977, the Safe Drinking Water Act of 1974, and the Toxic Substances Control Act of 1976.

What I would now like to turn to, however, is the Water Pollution Control Act of 1972 and the Clean Water Act of 1977 on page 11 of my testimony because I do think that there are provisions within that present legislation which if implemented could be of assistance to situations such as the Love Canal disaster.

When I first learned of the potential horrors at the Love Canal—all of which unfortunately proved to be real, not just potential—I approached EPA for funding of the cleanup of the canal under both RCRA and the Clean Water Act.

Specifically, I discussed sections 201, 208, 311, and 504. I believe that each section, if implemented in a creative manner, could be most useful in situations such as the Love Canal. Let me explain.

Section 201 provides for grants for construction of wastewater treatment works. It is a $40 billion program. The solution which has been designed for cleaning up Love Canal is a micro sewer system. French tile drains are being laid so the leachate can be collected. The contaminated wastes will then be flushed through a pretreatment plant and eventually through the municipal sewage treatment plant. If EPA were to recognize the fact that this plan of action is, in essence, a micro sewer system, then 201 funds could be used in this innovative way. However, EPA resisted this approach for use of 201 money, stating that it is not a traditional use of these funds. Love Canals are not traditional problems, and I think EPA should be looking for innovative uses of its programs for new problems as well as traditional ones.

Section 208 is the section of the law which calls for State and areawide planning and management programs to address nonpoint source discharges. It provides for local input and localized planning, 208 agreements must be certified by the Governor and no 201 grants can be awarded without the 208 agreement in place. It too must be reviewed and updated each year as necessary.

Section 311 provides for the designation of hazardous substances which, when discharged, present an imminent and substantial danger to the public health or welfare, and provides for penalties for such discharges. That was on the books for 5 years, and I contacted President Carter and I said it still hasn't been implemented. Regulations haven't been promulgated. A short while after I contacted President Carter, EPA did issue regulations, but then they were tossed out in the courts, and we still do not have regulations for section 311.

Finally there is section 504 of the Clean Water Act which authorizes the Administrator to provide assistance in emergencies caused by the release into the atmosphere of any pollutant or other contaminant including, but not limited to, those which present, or may reasonably be anticipated to present, an imminent and substantial danger to the public health or welfare. And this most fittingly addresses situations such as the Love Canal. But there, Mr. Chairman, Congress has been derelict. We have authorized money to the tune of approximately $10 million but we have not appropriated one red penny for implementation of section 504, and until we do so we can't use it.

Let me turn to what I think are also needed changes in RCRA and also in a new law on page 15 of my testimony.

I introduced two bills into Congress during the last days of the 95th session which I hope will serve as a basis for discussion and be included in the reauthorization bill for RCRA.

The first bill I introduced is intended to help prevent hazardous substances from being handled or disposed of in ways that threaten injuries to American citizens or to the environment.

My bill will, I believe, help fill the gaps which have become evident in RCRA by amending it to: establish a program for the identification and reclamation of abandoned hazardous wastesites; set fees to be paid by private organizations which store or dispose of hazardous wastes; provide for a process for the selection of sites for future disposal of hazardous wastes.

More specifically, my bill states that a concerted effort must be made to identify all abandoned landfill sites that do or may contain hazardous wastes, and once they are identified they must be reclaimed, if feasible. If reclamation is not feasible, they must be monitored to insure that public and environmental health and safety are not endangered. My bill establishes a joint State/Federal procedure for accomplishing these directives.

Additionally, when RCRA was passed in 1976, few foresaw the widespread public opposition to new hazardous waste disposal sites which has swept the Nation. The general public was not then fully aware of the large number of abandoned sites throughout the country, the deleterious effects they were having on people's health and safety, and their dire impact on the environment. Now that public awareness has grown, in large part due to the Love Canal emergency, citizens are understandably leery about the dubious honor of having a new site proposed for location in their backyards.

However, as I noted earlier, the hazardous waste disposal situation is here to stay. Our advanced technology and manufacturing processes must produce wastes as byproducts of those very activities which allow us to enjoy one of the highest standards of living in the world.

Therefore, we must create a program and process for locating new facilities for the treatment, storage, and disposal of hazardous waste materials in as rational, effective, and equitable a manner as possible. That is precisely what my bill is intended to provide.

Mr. Chairman, I also ask that we include within the body of my remarks the remainder of my prepared statement which details in greater extent the first bill I introduced and also, the second bill, the Toxic Pollutant Compensation Act, which I designed to provide relief to all persons injured as a result of toxic pollutants in our environment, regardless of fault, enabling EPA, after compensation of the victims, to then go after the polluters.

Thank you very, very much for your kind attention to what I do admit was a rather extensive testimony.

[Testimony resumes on p. 90.]

[Mr. LaFalce's prepared statement follows:]

STATEMENT OF HON. JOHN J. LaFALCE, A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman: It is an honor for me to testify before you today on the progress the Federal government has made in the implementation of the Resource Conservation and Recovery Act of 1976 (RCRA).

On August 2, 1978, the New York State Commissioner of Health advised pregnant women and children under the age of two to evacuate the Love Canal area of Niagara Falls, which is in my Congressional District. Eventually over 230 families moved from the area. Their homes were being polluted by toxic chemicals seeping from the ground from an abandoned Canal which had been used as a solid waste landfill site. Eighty-two chemicals, some of which are suspected carcinogens, have been detected by the U.S. Environmental Protection Agency to be in the ambient air in the Canal area. This terrible tragedy, caused by toxic wastes having been indiscriminately buried in the Canal over 25 years ago, has been referred to as just one of the many "ticking timebombs", just one of the abandoned landfill sites around the country.

RCRA

Congress, when it passed RCRA in 1976, hoped to prevent such incidents by providing for a hazardous waste regulatory program; a program to eliminate open dumping; a program for financial and technical assistance for planning enhanced solid waste management programs; a grants program to rural communities to improve solid waste management systems; and authority for research, demonstrations and studies.

Let me take a few minutes to outline in more detail the law as Congress passed it in 1976. In the interest of brevity I have extracted only those portions which I think are relevant to today's testimony.

Subtitle A of the Act requires the formulation of guidelines for solid waste recovery and the publication of guidelines on alternative solid waste management

practices. These guidelines are to be issued within one year of enactment of the law. Descriptions of levels of technical performance, leachate control, ambient air quality, diseases, safety and aesthetics will be included in similar guidelines published after two years.

Subtitle B establishes an Office of Solid Waste within the Environmental Protection Agency headed by a Deputy Assistant Administrator to oversee the implementation of RCRA. This position is currently held by Mr. Stefan Plehn.

Subtitle C is the key to the bill as this is the section which is concerned with hazardous waste management. The law directs EPA, within 18 months of enactment, to identify which wastes are hazardous and in what quantities, qualities, concentrations and forms of disposal they become a threat to health or the environment.

Additionally, EPA is required to issue standards for generators and transporters of hazardous wastes, respecting record keeping, practices, labeling, appropriate containers, use of a manifest system, and reporting of quantities and disposition.

Perhaps most importantly, persons owning or operating facilities for the treatment and storage of hazardous wastes are required to obtain permits within 90 days after identification and listing. Permit applications must indicate composition, quantities, the rate at which such wastes are to be disposed of, and the location of the disposal site. EPA or States (in jurisdictions having hazardous waste programs) may revoke permits of non-conforming users.

Eighteen months after enactment the Administrator must also publish guidelines to enable the states to develop approved hazardous waste programs.

In order for EPA and State officials to enforce these requirements, the Act authorizes them to inspect facilities, copy records, and obtain

samples. The information obtained will be made public.

Compliance provisions of the law will be enforced through civil and criminal penalties.

Subtitle D requires EPA within 6 months of enactment to publish guidelines identifying areas with common solid waste management problems and appropriate units for planning regional solid waste management services.

The Agency will also promulgate within 18 months after enactment guidelines to aid the States in the development of solid waste management plans.

It is important to note that each plan must prohibit the establishment of new open dumps and require that all non-hazardous wastes be either used for resource recovery or disposed of in sanitary landfills. Existing open dumps will be improved or phased out.

Within one year after enactment, the EPA will promulgate regulations setting forth criteria for determining which facilities will be classified as sanitary landfills and which as open dumps. Open dumps are prohibited except in situations where a compliance schedule is arrived at pursuant to a state plan. EPA under Section 4005 of the Act must also publish an inventory of all open dumps within the U.S.

Another provision in this Subtitle to be noted is one which allows for "special communities". A special community is defined as one which has a low population and a high level of solid waste disposal. States with special communities will be eligible for grants to be used for conversion, improvement, consolidation or construction of solid waste disposal facilities.

Grants will also be provided for "rural communities" assistance to be used to upgrade solid waste management facilities and will be apportioned by EPA to the states on a population ratio basis.

Subtitle E concerns resource recovery. It directs the Secretary of Commerce to stimulate broader commercialization of proven resource recovery technologies by providing accurate specifications for recovered materials and encouraging the development of markets for recovered materials. Within two years after enactment, the Secretary must publish guidelines for the development of specifications and classifications of recovered materials and identify the geographic location of existing or potential markets for recovered materials. The Secretary is also empowered to evaluate the commercial feasibility of resource recovery facilities.

Subtitle F outlines further federal responsibility in the area of resource recovery. It states that two years after enactment each federal procurement agency will be required to procure only those items composed of the highest percentage of recovered materials. This provision will apply to all items exceeding $10,000 in purchase price.

EPA is given authority to enter into contracts with public agencies or with private persons for construction and operation of full-scale demonstration facilities or provide financial assistance in the form of grants for new or improved technologies.

The Agency will also conduct special studies on markets for energy recovered from solid waste and it may then implement demonstration projects to test study findings. This Subtitle also directs EPA to prepare guidelines to aid procuring agencies in complying with the recovered materials requirement.

Sections 7002 and 7003 in Subtitle G are extremely important. These provisions state that any person may commence a citizen suit against any person (including the U.S. Government) who is alleged to be in violation of any permit, standard, or regulation under the act or against the administration for

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alleged failure to perform any duty under the Act which is not discretionary.

The Administrator may bring suit to enjoin any handling, storage, treatment, transportation or disposal of any solid or hazardous waste which is presenting an imminent hazard to public health or the environment.

EPA, under Subtitle H, is to conduct and encourage studies and research on financing solid waste programs, health effects of solid waste disposal, marketing of recovered resources, production of fuel from solid waste, collection of solid waste, resource recovery source separation systems, land disposal practices, sludge, hazardous waste and the effect of burning solid waste on air quality.

PROMULGATION OF REGULATIONS UNDER RCRA

Now that I have outlined the requirements under the law in the areas of solid waste, hazardous waste and resource recovery, I would like to take up the issue of the promulgation of regulations which is necessary for implementation of this Act.

The law is intended to regulate solid wastes from the "cradle to the grave". However, most of the provisions which I outlined above have not yet been implemented because the U.S. Environmental Protection Agency, the Federal agency responsible for implementing this Act, has not issued regulations. As you will recall, the regulations for Subtitle C - Hazardous Waste Management - were to be issued within 18 months of enactment of the law. EPA states that it will not be issuing the regulations for this section of the law until 1980 because it needs to resolve very complex technical, financial, legal and environmental issues. EPA's main concern, and perhaps to an extent justifiably so, is to issue regulations which will not be tossed out by the courts. However, by not issuing regulations until January 1980, which means that the regulations would not take effect for an additional 6 months after issuance, EPA is delaying by two years putting into effect a program which is urgently needed.

By delaying the issuance of regulations for such important sections of the law such as: Guidelines for Solid Waste Management Landspreading Practices; Hazardous Waste Criteria - Identification and Listing; Standards for Generators of Waste; Standards for Hazardous Waste Treatment, Storage and Disposal Facilities; Permit Regulations for Hazardous Waste Treatment, Storage and Disposal Facilities; Guidelines for Development of State Solid Waste Management Programs; Criteria for Classification of Disposal Facilities; Guidelines for Procurement Practices; is to render the law totally ineffective. For all the good this law is currently doing, Congress may well not have passed it at all. I have great respect for the Environmental Protection Agency, it has a difficult task in protecting our environment, but it has proven derelict in its duties and oblivious to its responsibilities to the people of this country by not having issued all the regulations for RCRA so that it can be implemented immediately.

By delaying issuance of the RCRA regulations, EPA may be compounding its problems by allowing those who handle, haul or dispose of hazardous wastes to do so in an unsafe manner: Additionally, those companies which are involved in the waste disposal business are hesitant to invest in new equipment for fear that the new facilities will not meet EPA standards when the regulations are issued in 1980. Also since the laws concerning dumping now in effect are state laws rather than federal laws, states with strict dumping regulations are hurting themselves because industries are moving to those states with weak laws so that they can dump without penalty.

The solid wastes which we generate in this country as a result of our highly industrialized economy are here to stay - they will not go away but rather increase exponentially in the future.

Thus, in order to prevent landfill operators from being able to conduct their businesses in an irresponsible manner, EPA must regulate. The public fears the placement of these landfills which have created serious health and environmental problems for the surrounding areas due to a lack of regulation of the landfills' activities. We cannot allow the public to remain fearful, because the hazardous waste landfill must exist as long as our society continues to manufacture products from materials which are made from toxic substances which are not biodegradable. We can only stem the legitimate fears of the public if we insist that the solid waste producers, handlers, haulers and landfill operators be forced to conduct their businesses in the safest manner known to man.

I would like to make note at this point that I am not in favor of regulating for the sake of regulating. Government has a tendency sometimes to overregulate and cost government and the consumer inordinate amounts of money. However, there are times when I believe that government must step in and regulate in order to protect the health and welfare of the citizens. The President, as part of his Phase II Anti-Inflation Message delivered last week, requested federal agencies to avoid issuing regulations which could prove to be adverse to the public interest, inflationary, or non cost-effective. EPA must not take this message to mean that the President does not want important laws such as RCRA to be implemented. EPA should follow the President's directives by redirecting its resources toward necessary regulations and issuing them as expeditiously as possible. In this manner the Agency will also meet the public's expectations by living up to its obligation to preserve public health, safety and the environment.

The Love Canal is a prime example of a "ticking timebomb" -- an abandoned landfill full of toxic substances which literally exploded in the faces of the people who lived in the surrounding area because a law, such as RCRA, had not been on the books and had not been enforced during the 1940's and 50's when indiscriminate dumping occurred in the Canal.

Unfortunately, RCRA does not address the issue of abandoned chemical dumps. Therefore, there is no provision in the Act which can aid us in coping with the problems they leave behind. Congress, I believe, in all its wisdom, should have addressed this issue in 1976 when it originally passed the law; however, it did not, and therefore, I have introduced legislation during the final days of the 95th Congress which I believe might help us address the problems created by abandoned waste sites. I will discuss this bill's provisions a little later.

Nevertheless, RCRA can help us prevent future Love Canals, but only if EPA acts and acts immediately. There are hazardous waste disposal areas currently being operated which need to be regulated better so that the people who live near them can be assured that a future Love Canal does not exist in their backyards. I have several such areas operating currently in my own Congressional District. We in New York are fortunate because we have strict legislation on the state books. However, the citizens who live, for example, in Lewiston, New York, near the SCA Services, Inc., site, are very leary of the operations at the site because they do not have the assurance that it is being regulated according to federal standards.

Not only are people afraid that these sites are not being regulated enough due to the lack of RCRA enforcement, but we also have the examples of PCB's being disposed of along the roads in North Carolina by a "midnight hauler", and illegal waste dumpers strewing wastes along "cancer alley" in New Jersey. The results of these actions are additional pollutants in our drinking water, increased burdens on our sewage treatment plants, increased pollution in our rivers ans streams, and increasingly higher amounts of unhealthy and even toxic chemicals in the air we breathe. This additional pollution, much of which could have been prevented, costs taxpayers additional money, irreparably harms the environment, and creates costs -- both health and financial -- for the individuals who suffer from these activities. Many of us unknowingly suffer due to the toxics entering the food chain. The toxic wastes settle on the floors of the bodies of water from which we fish. The sediments are eaten by phytoplankton, which in

turn are eaten by the zooplankton, which in turn are consumed by small fish. The small fish are eaten by larger ones and then you and I consume the larger fish, bringing the toxics into your system and mine. New York's Commissioner of Environmental Conservation had to ban the consumption of fish from Lake Ontario due to unhealthy amounts of Mirex, a pesticide, being present in the fish. PCB's in the Hudson is another prime example of how toxic wastes harm not only the consumer, but also the person who is trying to earn a living from our natural resources, which would be protected if we would enforce our laws.

These are just a few examples of the total extent of the harm that has been done to our environment, health and well-being.

By not having issued regulations for RCRA, EPA is creating a gaping hole in our national policy to reduce the amount of uncontrollable pollutants in the environment.

OTHER LEGISLATION

Congress has passed other landmark legislation, such as the Clean Air Act; the Clean Water Act; the Safe Drinking Water Act; the Federal Insecticide, Fungicide and Rodenticide Act, the Hazardous Materials Transportation Act; and the Toxic Substances Control Act to control toxic substances. RCRA is only one link in the chain of environmental safeguards Congress has enacted. Yet as we all know, a chain is only as strong as its weakest link. Thus, without full implementation of RCRA, the Chain Congress has created is not complete.

Yet Congress, too, has been lax in its responsibility to fund the authorizing legislation listed above to its full extent, and thus has helped to cripple EPA's implementation efforts. Let me just outline briefly what each of these acts does, how they tie together, and the need to fund those sections dealing with toxics to make the chain a strong one.

The Federal Insecticide, Fungicide and Rodenticide Act of 1972, commonly referred to as FIFRA. This act was amended during the 95th Congress. FIFRA helps to control the entry of pesticides into our waterways. All pesticides in the U.S. must be registered with EPA and classified by EPA for general or restricted use. EPA must establish procedures for the storage and disposal of pesticides. Proper implementation of this Act helps to prevent water pollution from non-point sources.

The Clean Air Acts of 1970 and 1977. These laws provide for the protection and enhancement of air quality through regulation of pollutant emissions and establishment of air quality standards. Levels of pollutants, such as sulfur oxides, particulates, hydrocarbons, carbon monoxide, nitrogen oxides, lead, etc., are set for ambient air standards. Section 112 covers national emission standards for hazardous air pollution; these pollutants are contained at the source. Asbestos, beryllium, mercury, and vinyl chloride are currently regulated. Arsenic, benzene, and others are currently under-study.

Atmospheric fallout from such emissions is not recognized as an important factor in water pollution. Scientists estimate that as much as 60% of the PCB's in the Great Lakes comes from the atmosphere, possibly as a result of improper incineration.

The Hazardous Materials Transportation Act of 1974. This law regulates the transportation in commerce of hazardous materials. The Secretary of Transportation is given wide latitude in defining "hazardous" under this law. However, it is generally defined as flammable and combustible solids, liquids or gasses; poisons; oxidizing or corrosive materials; compressed gasses; explosives and the like.

The Secretary issues regulations which apply to those offering hazardous materials for transport, to those manufacturing containers for use in such transport, and to the trensporters themselves.

The Coast Guard regulates marine transport.

The Secretary is authorized to establish criteria for handling, such as number,

qualification and training of personnel; inspections; use of equipment; and monitoring and safety procedures.

The Water Pollution Control Act of 1972 and the Clean Water Act of 1977. These laws provide for uniform, enforceable national standards for clean water and regulations to enforce them; a national permit program for point-source discharges; federal funds to construct sewage treatment systems; and state and area-wide planning and management programs to address non-point source discharges.

Section 307 requires EPA to publish a list of toxic pollutants for which an effluent standard will be established.

The Clean Water Act, amending the Water Pollution Control Act of 1972, has several sections concerning toxics which I would like to discuss with you for a moment.

When I first learned of the potential horrors at the Love Canal -- all of which unfortunately proved to be real, not just potential -- I approached EPA for funding of the cleanup of the Canal under both RCRA and the Clean Water Act.

Specifically, I discussed Sections 201, 208, 311, and 504. I believe that each section, if implemented in a creative manner, could be most useful in situations such as the Love Canal. Let me explain.

Section 201 provides for grants for construction of wastewater treatment works. It is a $40 billion program. The solution which has been designed for cleaning up Love Canal is a micro sewer system. French tile drains are being laid so the leachate can be collected. The contaminated wastes will then be flushed through a pretreatment plant and eventually through the municipal sewage treatment plant. If EPA were to recognize the fact that this plan of action is, in essence, a micro sewer system, then 201 funds could be used in this innovative way. However, EPA resisted this approch for use of 201 money, stating that it is not a "traditional" use of these funds. Love Canals are not traditional problems, and I think EPA should be looking for innovative uses of its programs for new problems as well as traditional ones.

Section 208 is the section of the law which calls for state and areawide planning and management programs to address non-point source discharges. It provides for local input and localized planning. "208 agreements" must be certified by the Governor and no 201 grants can be awarded without the 208 agreement in place. It must be reviewed and updated each year as necessary.

I attempted to get New York State to agree to use some of its funds from the 208 program for planning at the Love Canal. This was also met with resistance, however, because the problem was not interpreted to be within the intent of the law. Toxic contamination of groundwater at Muskegon, Michigan, was traced to seepage lagoons, buried sludges and corroding waste barrels at a chemical plant. No one yet knew if the Love Canal problems had reached such extremes because deep water wells had not yet been dug by either the State or EPA. However, it would seem to me that the question of whether there was deep water contamination, and the planning which would have to go hand in hand with such a program, would fit under the intent of Section 208. Again, I think we need to use more creativity in the implementation of the laws we have to address problems of which we are only now becoming aware.

Section 311 provides for the designation of hazardous substances which, when discharged, present an imminent and substantial danger to the public health or welfare, and provides for penalties for such discharges. A National Contingency Plan is to provide for effective action to minimize damage from oil and hazardous discharges. A revolving fund is authorized to pay for clean up of spills of oil and hazardous wastes, with EPA's Administrator given authority to seek to recover costs from polluters through the judicial process.

EPA was five years late in issuing the regulations for hazardous substances under 311. It was after my urging that these regulations were finally promulgated, in March of this year. The regulations, however, were challenged in the courts and dismissed by the judge, who called them arbitrary and capricious. Thus, use of Section 311 is once again a moot point. I hope EPA will not take as long the second time as it did the first, and issues a new set of regulations immediately.

Finally there is Section 504 of the Clean Water Act which authorizes the Administrator to provide assistance in emergencies caused by the release into the atmosphere of any pollutant or other contaminant including, but not limited to, those which present, or may reasonably be anticipated to present, an imminent and substantial danger to the public health or welfare.

This Section addresses most fittingly situations such as the Love Canal. I, along with the assistance of my Senate colleagues from New York, tried to obtain funding for the Canal under Section 504. Both Mr. Javits and Mr. Moynihan spoke very eloquently on the floor of the Senate in behalf of an amendment to the Supplemental Appropriations bill of Fiscal Year 1978 in an attempt to obtain funding for the clean up of the Love Canal in order to abate the health and environmental emergency. However, funding under Section 504 was objected to due to a fear that funding under Section 504 for any situation would "open the proverbial floodgates" for funding for any similar situation. I'm not sure this argument is a good one when balanced against our duty to protect the health and welfare of our citizens when they are unable to protect themselves without outside assistance. Congress included Section 504 in the Clean Water Act of 1977 for situations just like the Love Canal. Congress authorized $10 million for this Section and yet, to date, not one penny has been appropriated for it. This is one area in which it is up to the Congress to act.

The Safe Drinking Water Act of 1974. This law requires EPA to establish regulations for drinking water applicable to public water systems. These apply only to water after treatment and address maximum contaminant levels allowed (health related) as well as those affecting taste, odor, or appearance.

To protect underground sources of drinking water, EPA must also develop regulations for state underground injection control programs.

The Act gives the states primary enforcement responsibility, but if they fail to act, EPA must assume responsiblity.

Very little money is available under this law to the municipalities to bring their drinking water supplies into compliance with federal standards - a fact which is now causing many communities to suffer a heavy financial burden. However, the costs for cleaning up our drinking water supplies perhaps would not be so high if the Clean Water Act, Clean Air Act, and all the others which form the chain were to be enforced to the maximum extent.

The Toxic Substances Control Act of 1976. This law gives EPA broad discretionary authority to control hazardous chemical substances, excluding pesticides which are covered under FIFRA. It provides for direct control of new and existing chemicals, requires premarket screening of new chemicals, and provides authority to require the testing of a chemical's toxicity.

If an unreasonable risk is posed by a chemical, the EPA can prohibit or limit its manufacture, processing, distribution, use and disposal through administrative rulemaking.

The EPA can also initiate civil action in a federal district court to alleviate any imminent hazard to health or environment.

Information is now being gathered under TSCA about the 70,000 commercial chemicals now in use and the potential hazards we might face from any one of them. This Act will help us in the future to control toxics at the source, while RCRA will help us control toxics during the course of their disposal.

As you can note, each of these laws forms a link in the chain to protect us against toxic substances in our environment. But without implementation of RCRA, the chain falls apart. Both a new law and changes in RCRA are needed.

But today's hearings should go even farther than to discuss the oversight of the present law, for RCRA comes up for reauthorization next year. Thus, we must be concerned with the future as well as the past. We must ask ourselves if RCRA would go far enough to protect the environment and citizenry even if it were fully implemented.

BOTH CHANGES IN RCRA AND A NEW LAW ARE NEEDED

I believe there are some inherent problems with the law as it is now written and some holes in the overall approach we have taken to the compensation or lack of compensation of victims of toxic pollutants in the environment.

I introduced two bills into Congress during the last days of the 95th Session which I hope will serve as a basis for discussion and be included in the reauthorization bill for RCRA.

The first bill I introduced is intended to help prevent hazardous substances from being handled or disposed in ways that threaten injuries to American citizens or tothe environment.

My bill will, I believe, help to fill the gaps which have become evident in the RCRA by amending it to: establish a program for the indenitification and reclamation of abandoned hazardous waste sites; set fees to be paid by private organizations which store or dispose of hazardous wastes; provide for a process for the selection of sites for future disposal of hazardous wastes.

More specifically, my bill states that a concerted effort must be made to indentify all abandoned landfill sites that do or may contain hazardous wastes, and once they are indentified they must be reclaimed, if feasible. If reclamation is not feasible they must be monitored to ensure that public and environmental health and safety are not endangered. My bill establishes a joint state/federal procedure for accomplishing these directives.

Additionally, when RCRA was passed in 1976, few foresaw the widespread public opposition to new hazardous waste disposal sites which has swept the nation. The general public was not then fully aware of the large number of abandoned sites throughout the country, the deleterious effects they were having on people's health and safety, and their dire impact on the environment. Now that public awareness has grown, in part due to the Love Canal emergency, citizens are understandably leery about the dubious honor of having a new site proposed for location in their backyards.

However, as I noted earlier, the hazardous waste disposal situation is

here to stay. Our advanced technology and manufacturing processes must produce wastes as by-products of those very activities which allow us to enjoy one of the highest standards of living in the world.

Therefore, we must create a program and process for locating new facilities for the treatment, storage, and disposal of hazardous waste materials in as rational, effective and equitable a manner as possible. That is precisely what my bill is intended to provide. A permit system will be established under which permits will be issued only after assurances are given about the environmental safety and soundness of any new facility's location. Affected local residents, local governments and states would be included in the process and must be consulted, and panles of scientific experts would be formed to help answer the many questions that arise in such situations.

My bill also creates a program for the termination of existing or new hazardous waste disposal sites in a safe manner. This is most important, for it will provide assurances to committees surrounding such sites that they will not cause problems in the future such as those we are experiencing as a result of past landfill sites being abandoned and improperly sealed.

The bill would initiate a system of fees to be levied on permit-holding operators of hazardous waste treatment, storage or disposal facilities. The fees will be deposited into a fund to be used for two purposes: 1) the maintenance of new or existing sites and 2) the maintenance and reclamation of abandoned sites.

Half of all fees collected will be paid into a special account and used for new site maintenance. The fees will be set at a level sufficient to assure that all costs for maintenance will be borne by this account, thus making this a program funded entirely by the industry which created the need for the program in the first place. These costs, previously borne by society in general through environmental and health hazards and damages, will now be shifted to the industry through this user fee.

The other half of the fees will be deposited into a second fund to help

defray the costs of monitoring and reclaiming abandoned sites. It is anticipated that the fees will provide 50% of the costs; the remainder needed for these purposes would be provided through a federal/state program funded on a 90-10 basis.

My bill would also establish a program and contingency fund for emergency assistance and payment of costs for clean up operations in the event that any pollutant or contaminant associated with any facility for the treatment, storage or disposal of hazardous waste present an imminent and substantial danger to the public health and welfare. This provision is accompanied by the provision that the government may bring action against owners or operators of facilities where such emergencies arise to recover the costs of the clean up operations.

The second bill I introduced was the Toxic Pollutant Compensation Act, designed to provide relief to all persons injured as a result of toxic pollutants in our environment. Essentially the bill distinguishes among three classes of victims - those who have sustained their injuries as a result of the fault of the manufacturer, those victims who sustained their injuries in the course of their employment, and those victims who sustained their injuries as a result of a toxic pollutant, but without fault. While the bill treats each of these three classes somewhat differently, it does provide a central theme: The Environmental Protection Agency is directed to study physical injuries and to determine which such injuries are caused by toxic pollutants. In making this determination, EPA will take into account the exposure to the toxic pollutant - both as to time and place - necessary to produce the physical injury. EPA's determination will greatly expedite the compensation process since the bill provides for the utilization of this finding in subsequent legal and/or administrative proceedings.

The measure also provides for the creation of a compensation agency. Generally, this agency will pay benefits up to $50,000 to persons (other than employees) who have sustained injury as a result of toxic pollutants. These benefits will be available regardless of whether or not a manufacturer is ultimately determined to be responsible for the physical injuries. However, in the event that a manufacturer is at fault, EPA will be subrogated to the rights of the

injured person, and will either share in any recovery he may receive or initiate its own action against the person at fault.

CONCLUSION

As I have tried to point out throughout my testimony, there is a need for a greater legislative and regulatory role in the control of toxics in the environment, especially in regard to its ultimate disposal. EPA, as the federal regulatory agency and Congress, as the legislative body, have both moral and legal obligations to the citizens of this country to do everything possible to protect their health, welfare and environment.

The Environmental Protection Agency has stated that there are more than 25,000 ticking timebombs around the country, Do you know if there are any in your backyard, neighborhood or Congressional District?

I know there are 39 abandoned dumps in Niagara County alone in my Congressional District, much of the contents of which are unknown. I know that there are cases pertaining to environmental incidents in Danville, Illinois; Akron, Ohio; Lowell, Massachusetts; and Seymour, Indiana, which the EPA enforcement divisions consider to be emergencies.

If another ticking timebomb explodes, can we as federal officials and members of Congress say that we have acted responsibly?

But more importantly, the citizens of this country entrusted us to legislate and EPA to enforce laws to safeguard their health and welfare, and to protect the environment so that our country can be a suitable place in which successive generations can live. Can we say that we have done all we can to prevent another environmental and health tragedy from occuring?

Thank you for allowing me to appear before you this morning.

Mr. GORE. With the tragedy you have experienced in your congressional district, I understand the amount of attention you want to devote to it. It was a very excellent statement. I have read it in its totality and it will be included in totality in the record.

Thank you both very much for helping us in our investigation into this very serious problem. You are welcome to join us on the dais for participating in questions, if you wish.

Our next witnesses are Mr. and Mrs. Woodrow Sterling from Toone, Tenn.

If you would come and join us at the witness table there. Would you stand and be sworn, please. This is a procedure we normally go through. Do you swear the testimony you are about to give will be the truth, the whole truth, and nothing but the truth, so help you God?

Mr. STERLING. I do.

Mrs. STERLING. I do.

Mr. GORE. Would you identify yourselves to the reporter.

TESTIMONY OF WOODROW STERLING AND CHRISTINE STERLING, TOONE, TENN.

Mr. STERLING. Yes. My name is Woodrow Sterling.

Mrs. STERLING. And I am Christine Sterling.

Mr. GORE. Thank you very much. I am going to ask our counsel, Tom Greene, to get a lot of the facts on the record with you so we can lay out the incredible story you have lived through.

Mr. GREENE. Thank you, Mr. Chairman.

Let me deal very quickly with two business matters first. Staff will request permission to introduce documents as necessary and appropriate in the course of today's hearing.

Mr. GORE. Without objection, it is so ordered.

Mr. GREENE. Second, I would like the clerk to provide the Sterlings with the packet of documents which we have prepared for their review and for the review of the members today.

Mr. GORE. Without objection.

Mr. GREENE. Thank you, Mr. Chairman.

[Testimony resumes on p. 212.]

[The documents referred to follow:]

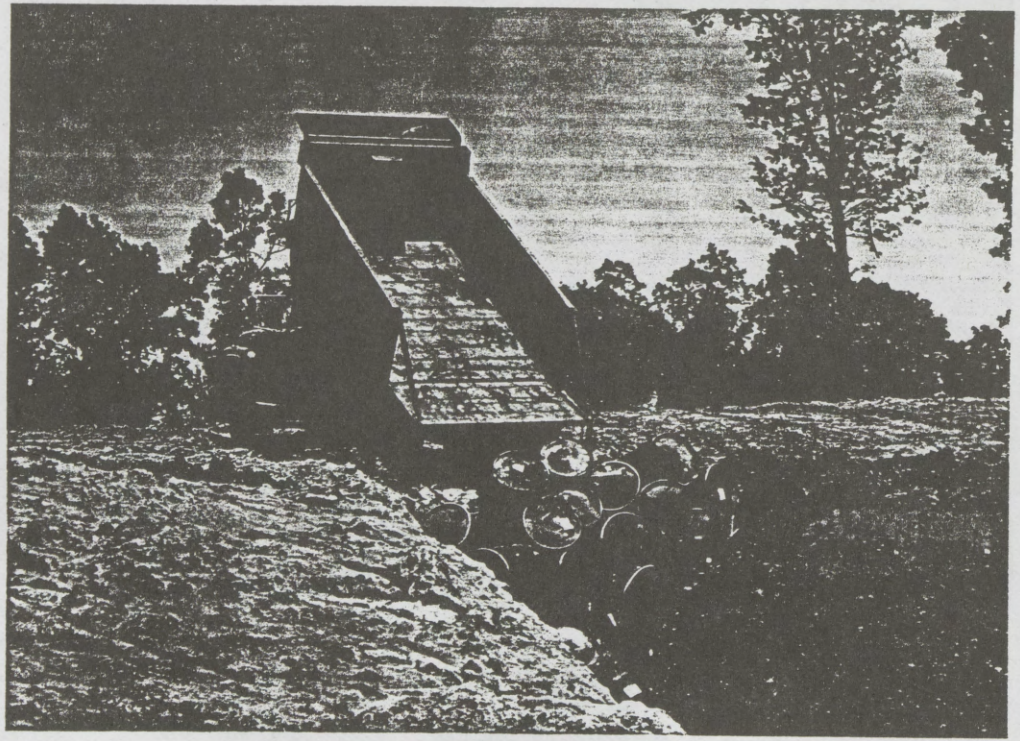
38-748 O - 79 - 7

EXHIBIT A

Velsicol truck with waste drums at trench. Photograph taken at the Velsicol Pesticide Waste Dump; Toone-Teague Road; Hardeman County, Tennessee; taken June 1966



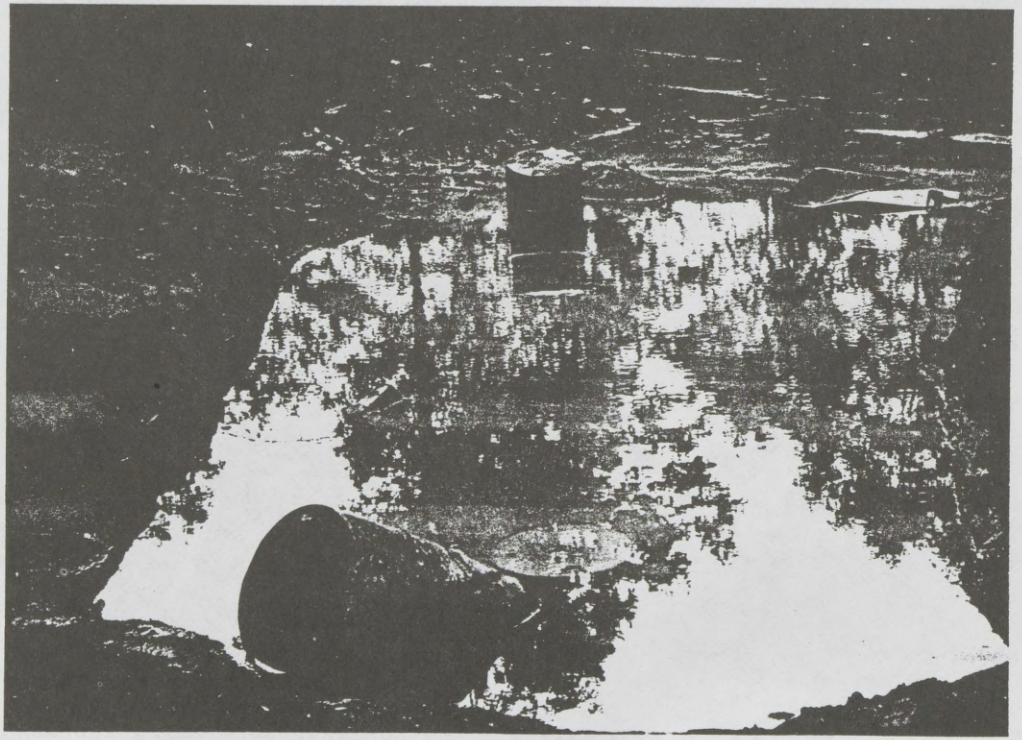
Wastes are dumped into trench.



Damaged barrels release contents in trench.



Wastes and drums surface prior to fill.



Waste drums are covered with shallow layer of earth.

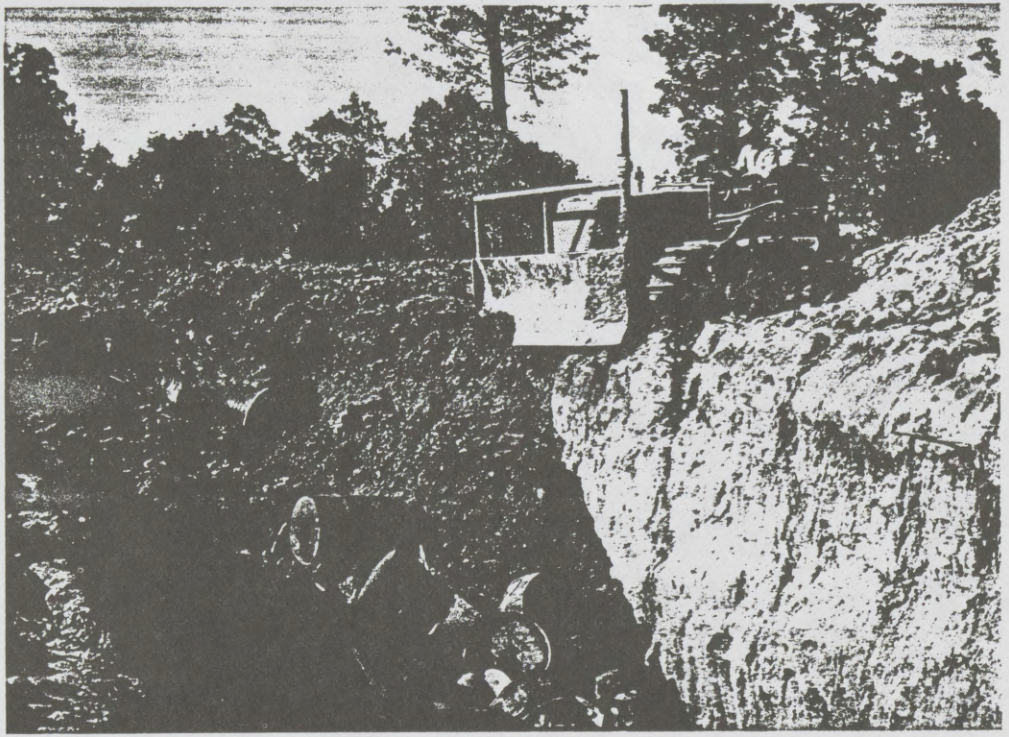


EXHIBIT AA



HARDEMAN COUNTY DUMP SITE...DEPRESSION IN EARTH DEVELOPED ABOVE BURIAL TRENCH.

EXHIBIT B

PARTIAL LIST OF PESTICIDE AND PESTICIDE DEGRADATION COMPOUNDS BURIED AT THE VELSICOL HARDEMAN COUNTY DUMP SITE (1964-1972)

Heptachlor *

Dieldrin *

Endrin *

Heptachlor Epoxide *

Pentachlorocyclopentadiene

Hexaclorobicycloheptadiene

Chlordene

Isodrin

Aldrin *

* Carcinogens or Suspected Carcinogens

EXHIBIT C

PUBLIC HEALTH DEPARTMENT OF THE STATE OF TENNESSEE

IN THE MATTER OF	X	
	X	
	X	DIVISION OF WATER QUALITY CONTROL
	X	DAVIDSON COUNTY,
	X	
	X	
VELSICOL CHEMICAL CORPORATION	X	
MEMPHIS, SHELBY COUNTY, TENNESSEE	X	

COMPLAINT

Comes now the Commissioner of the Department of Public Health, State of Tennessee, Eugene W. Fowinkle, M.D., or his duly authorized representative, W. Henry Jones, Director, Division of Water Quality Control, and states that:

1. Velsicol Chemical Corporation, Memphis, Shelby County, Tennessee, owns and has possession of approximately 242 acres of land located in Hardeman County, Tennessee. The description of said property found in Deed Book C-4, page 417, County Registrar, Bolivar, Hardeman County, Tennessee, is as follows:

> Beginning at a point in the Toone and Teague Public Road south 55½ degrees west 56 links from One hickory pointer and south 31 degrees east 32½ from another hickory pointer, north 37½ degrees east (variation for Hillhouse 65 acres along this road is about 4½ degrees east in 1915 and for all other lines of this Bradford tract along road was 3-3/4 degrees east in 1915) 11 poles to the point in road, white oak pointers, north 17½ degrees east 40 poles to a stake on the west margin of road; north 12-3/4 degrees east 20.9 poles to a double white oak, the corner absolute on west margin of said Toone and Teague road, the southeast corner of a 65 acre tract conveyed by Geo. Bradford to Jack Willoughby; thence with the same as before named north 16 degrees east 50½ poles to a point in road; north 26 degrees east 12 poles to the point in road; north 18 degrees west cutting across an abrupt bend of road 36 poles to a point in the west margin of road, formerly a double red oak; north again cutting across bend of road 39 poles to a point in said road, with a crab apple pointer, also a persimmon pointer standing south 30½ degrees west 32 links from the corner; thence leaving said

Hillhouse's northeast corner about following said road north 36 degrees west 44 poles to a point on the west margin of said road; north 11-3/4 degrees west 36 poles to a pointer on east margin of said road; north 28½ degrees west 26 poles to a stake on north side of said road, south 2½ degrees west 31½ links from a double sassafras on northwest corner of field; north 62 degrees east 24.6 poles to a stake on east margin of said road; north 9-3/4 degrees east 23-1/3 poles to a stake in near center of said road; north 36 degrees west 15½ links from a black oak pointer, and south 58¼ degrees east 20 links from a small double sweet gum pointer on the south boundary of William J. Rhodes land; thence with the same east (V. 3-3/4 degrees east in 1908) 84.6 poles to a stake with post oak and dogwood pointers, the northeast corner of a 192½ acre tract granted to W. D. Ruffin Dec. 1, 1951 and on the west boundary of Entry No. 339 for 142 acres in the name of J. B. Miller; thence with the west line of a 17 acre tract sold by William J. Rhodes to Geo. L. Bradford, north 2 degrees east (V. 3-3/4 degrees east in 1915) 12.6 poles to a white oak with dogwood pointers, the northwest corner of the same; thence north 65½ degrees east 30.3 poles to a stake with black gum and dogwood pointers, the northeast corner of said 17 acres; thence east 43.4 poles to a stake with two black gum pointers on the right-of-way of the I. C. R. R.; thence with the same south 1½ degrees east 54.7 poles; south 2½ degrees west 16 poles; south 10-3/4 degrees west 40 poles; south 12-1/8 degrees west 34 poles; south 7½ degrees west 72 poles; south 10-7/8 degrees west 14 poles; south 21¼ degrees west 56 poles; south 15 degrees west 19 poles; south 7-1/8 degrees west 12 poles; south 4½ degrees west 80.16 poles to a stake on said right-of-way line with a black oak stump pointers, the northeast corner of B. M. Hillhouse's land; thence with the same west (V.4 degrees east in 1915) 102.6 poles to the beginning, and being the same tract of land conveyed to Bond Bros. and Howard Powell by J. B. Bradford by deed recorded in Deed Book L-3, page 133, and said land being conveyed by Bond Bros. and Howard Powell to Chas. G. Frady.

And being the same real estate conveyed to Wilson G. Keyes by warranty deed dated the 9th day of July, 1964, and recorded in Book C-4, at page 377, in the office of the Register of Hardeman County, Tennessee.

Velsicol Chemical Corporation uses said property as a burial ground for residues, by-products and solid waste materials from the production of chlorinated hydrocarbon pesticides at its plant in Memphis, Shelby County, Tennessee.

2. Velsicol Chemical Corporation has been using the property described in paragraph 1, as a dump for approximately seven (7) years. The Company transports by truck the aforementioned substances, contained in 55 gallon drums, from Memphis, Tennessee, to said property in Hardeman County, and deposits

them in trenches 15 feet deep, 12 to 15 feet wide and covered with approximately 3 feet of soil. There is in the ground now, approximately one quarter million, 55 gallon drums of residues. In many instances, the drums burst upon impact with the ground, spilling their contents into the soil. No care is taken to insure against bursting drums and the trenches are not lined with any impermeable material to prevent these chlorinated hydrocarbon compounds from leaching into the soil.

3. The aforementioned substances being buried at the Hardeman County dump site contain significant percentages of chlorinated hydrocarbons. The dangers presented by these compounds are directly related to their high toxicity, and persistent toxicity over long periods time. Among the compounds found at the dump are endrin, dieldrin, aldrin, heptachlor, isodrin, hexachlorocyclopentadiene, and hexachlorobicycloheptadiene. The characteristics of these compounds which create a danger to both man and the environment include extreme toxicity over long periods of time, indicating very slow degradation; near insolubility in water with the tendency to cling or adhere to particulate matter; and the ability to accumulate in the fatty tissues of most animals and to be absorbed by vegetable crops from contaminated soil, thereby, entering man's food chain.

4. In 1966 and 1967, the United States Geological Service (U.S.G.S.) conducted an indepth survey of a portion of the area used by Velsicol as a dump. The northern section of the property was first used by Velsicol and contains almost all the wastes. This northern area comprised most of the survey as shown in Figure 1, attached to this complaint. Figure 4, attached to this complaint, sets forth the position of the wastes in relation to ground water. See also Figure 5, attached hereto. The perched water zone increases and decreases seasonally with rainfall, and discharges to draws and ravines on the sides of ridges. The local water table aquifer is used by local residents along the road to the west of the dump,

and flows northeast, discharging to Pugh Creek and its tributory of the north end of the dump. Below the local aquifer is an artesian aquifer which slopes and flows westward. This aquifer is used as a water supply by many West Tennessee cities, including Memphis.

5. The findings of the U.S.G.S. survey are best understood by referring to Figures 2, 3, and 4 attached hereto. U.S.G.S. found that surface and ground contamination had already taken place; and that contamination of the perched zone had taken place, and had almost reached the local aquifer. U.S.G.S. concluded: "The contaminates that are entrained in the flow systems of the perched water zone and the water table aquifer will move laterally toward the discharging boundries of those groundwater bodies."

6. With the extension of the burying operations to the middle and southern portions of the property, two major hazards have developed. The first is that the underground conditions and groundwater movement directions are not known in these areas. Contaminated groundwater could move westward and contact water supplies. The second danger is presented by the proximity of the southern boundary of the dump to the headwaters of a stream which flows southwest through the town of Toone, Tennessee. See Figure 5. This factor is significant because this stream probably serves as a recharge for the groundwater supply used by Toone. Therefore, expanded burying activities means: (1) an increase in the amount of potential contaminates; (2) increased hazard for local water supplies near the dump; and (3) a possible hazard to the water supply of Toone, Tennessee.

7. Finally, the immediate dangers of these chlorinated hydrocarbon compounds, as set forth in paragraph three (3), when buried, are directly related to two characteristics: (1) persistence of high toxicity; and (2) insolubility in water. It is common scientific knowledge that chlorinated hydrocarbons remain toxic for long periods of time. This

is the quality that makes them desirable as insecticides. The time needed for complete degradation of the compounds buried in Hardeman County by Velsicol is unknown, even by the Company; but it is known that the extremely slow degradation afforded by the surface and aquatic environment is not available to buried wastes, and the breakdown of some chlorinated hydrocarbons creates by-products that are as toxic, if not more toxic, than the original compound. The movement of these compounds into the surface environment would not mean their disappearance. In addition, the compound's insolubility and clinging characteristic can only mean that water can be, and is, a medium by which contaminated particulate matter is moved. There is every reason to believe that the continuous action of water moving through the contaminated subsurface zones of Velsicol's dump in Hardeman County would slowly move the contaminates along its path.

8. The existence of a pesticide dump in an area using groundwater supplies, and located close to the headwaters of the Hatchie River, Hardeman County, presents grave risks to water quality. The conclusion reached by U.S.G.S. after its 1966-67 study is:

> "In view of the severity of the risks involved, it must be assumed that any groundwater originating in or passing through the contaminated zone is susceptible to contamination and therefore becomes a serious threat to any water supplies downgradient from the disposal area."

For the reasons stated in the foregoing seven (7) paragraphs, and with the knowledge that the aforementioned contaminates are buried and are being buried in such close proximity with subsurface waters that they will likely cause pollution of such waters, and further, with the knowledge that if such pollution occurs, the harm done to said waters will be irrepairable and irretractable, it is concluded that the burying of chlorinated hydrocarbon compounds and any other contaminated substances on the property described in paragraph one (1) is a violation of T.C.A. Section 70-336 of Chapter 164 of the Public Acts of 1971.

9. In addition to the foregoing data, the Department of Public Health, Division of Water Quality Control has been made aware of feasible, alternate methods of disposal of chlorinated hydrocarbon compounds. The Division has had communications with the Canadian Defense Research Establishment, Sussifville-Ralston, Alberta, Canada, and Dow Chemical Corporation, Midland, Michigan, both of which presently incinerate solid and liquid pesticide and insecticide residues. In addition, the Division is aware that Dr. Fred Schuman, Professor, Mississippi State University, Starkville, Mississippi, is conducting a study on incineration of pesticides with the aid of a USDA grant. Dr. Schuman has already published some reports, copies of which are filed in the Division of Water Quality Control, and with Dr. Warren C. Shaw, Associate Director, Plant Industries Station, United States Department of Agriculture, Bettsville, Maryland. Communications with these parties, and the Michigan Water Quality Control Division, reveals that incineration does break down chlorinated hydrocarbons to acceptable elements.

THEREFORE, pursuant to the authority granted me as Commissioner of Public Health, or to my duly authorized representative, in Tennessee Code Annotated Section 70-331, and in consideration of (1) the hazardous nature of the substances buried and being buried on the property described in paragraph 1 above, owned by Velsicol Chemical Corporation, Hardeman County; (2) the immediate and potential environmental contamination of soil and water presented by these substances; (3) the lack of adequate information concerning the time and conditions necessary for the reduction of the toxicity of these substances when buried; and (4) the acknowledged availability of an alternate and more acceptable method of disposal of contaminates, I ORDER Velsicol Chemical Corporation, Memphis, Tennessee, and Mr. William Anthony, Plant Manager, to take the following action:

(a) On or prior to June 19, 1972, submit to the Tennessee Department of Public Health, an engineering report detailing a method to incinerate all chlorinated hydrocarbon compounds and other contaminated substances

produced by Velsicol Chemical Corporation. Said engineering report must take into consideration air pollution problems associated with incineration, and provide for heat at temperatures sufficient to reduce said compounds to acceptable elements. The engineering report must also provide for a reasonable time schedule for design, installation and operation of said incineration device, including a means of storing said residue compounds until incineration becomes operational.

(b) On or prior to August 21, 1972, cease all burying operations on the property located in Hardeman County, Tennessee, described in paragraph 1 above, with the sole exception that non-toxic and/or non-contaminate material may be buried at said site in Hardeman County, upon application to, and expressed, written permission from the Commissioner of the Department of Public Health, and in compliance with T.C.A. Section 53-4301 et seq.

Issued in the office of the Tennessee Water Quality Control Division, Tennessee Department of Public Health, Nashville, Tennessee, on this the twenty-first day of February, 1972.

Eugene W. Fowinkle, M.D., Commissioner
Tennessee Department of Public Health

S. Leary Jones, Director
Division of Water Quality Control

FIG. 5

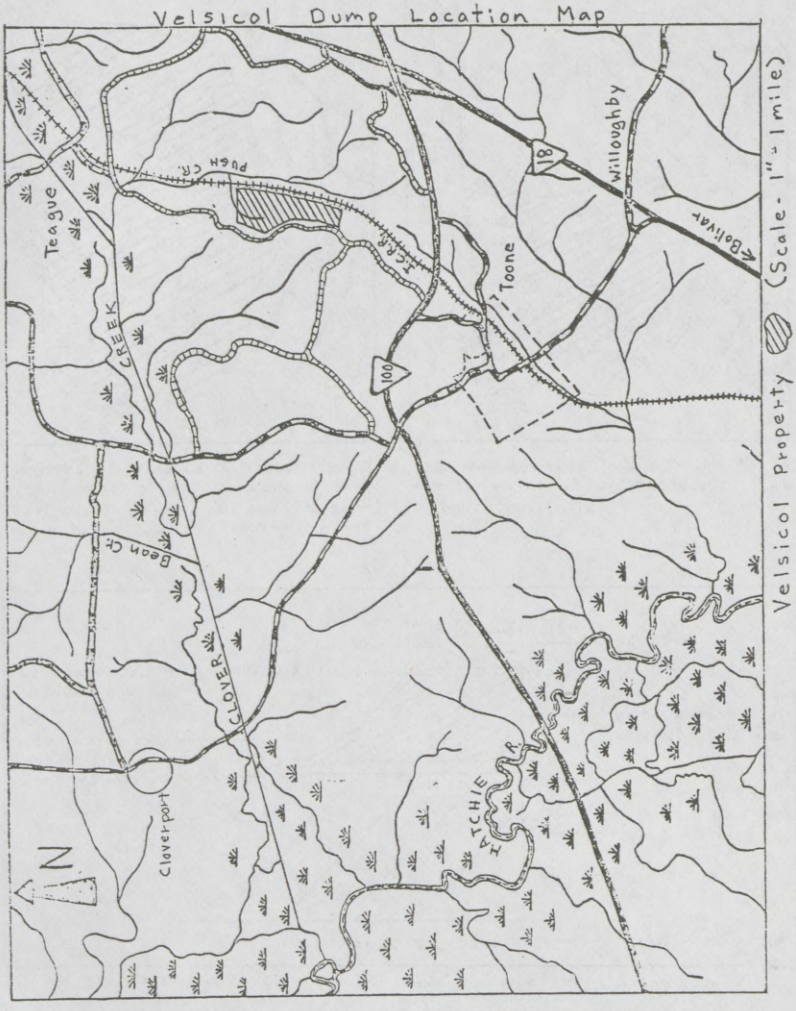
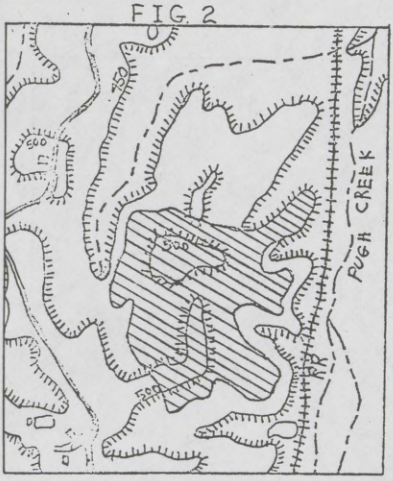
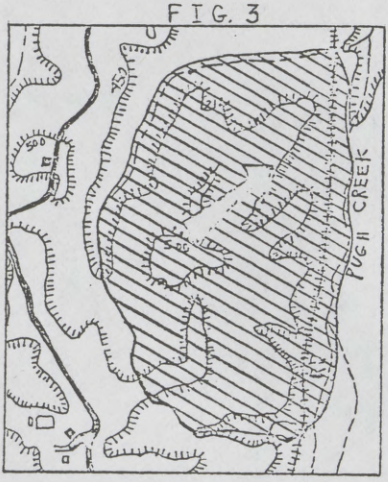

Velsicol Dump Location Map
Teague
CREEK
PUSH CR.
Toone
18
Willoughby
Bolivar
100
Bean Cr.
CLOVER
Cloverport
N
FATCHIE
Velsicol Property
(Scale- 1" = 1 mile)

FIG. 2



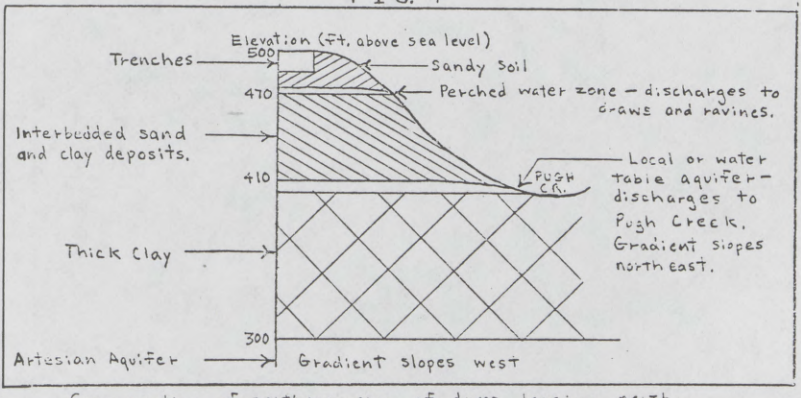
Areal extent of perched water zone that is susceptible to contamination—as of time of U.S.G.S. report (1966).

FIG. 3



Areal extent of water table aquifer that is susceptible to contamination—as of time of U.S.G.S. report (1966). Arrow indicates direction of gradient.

FIG. 4

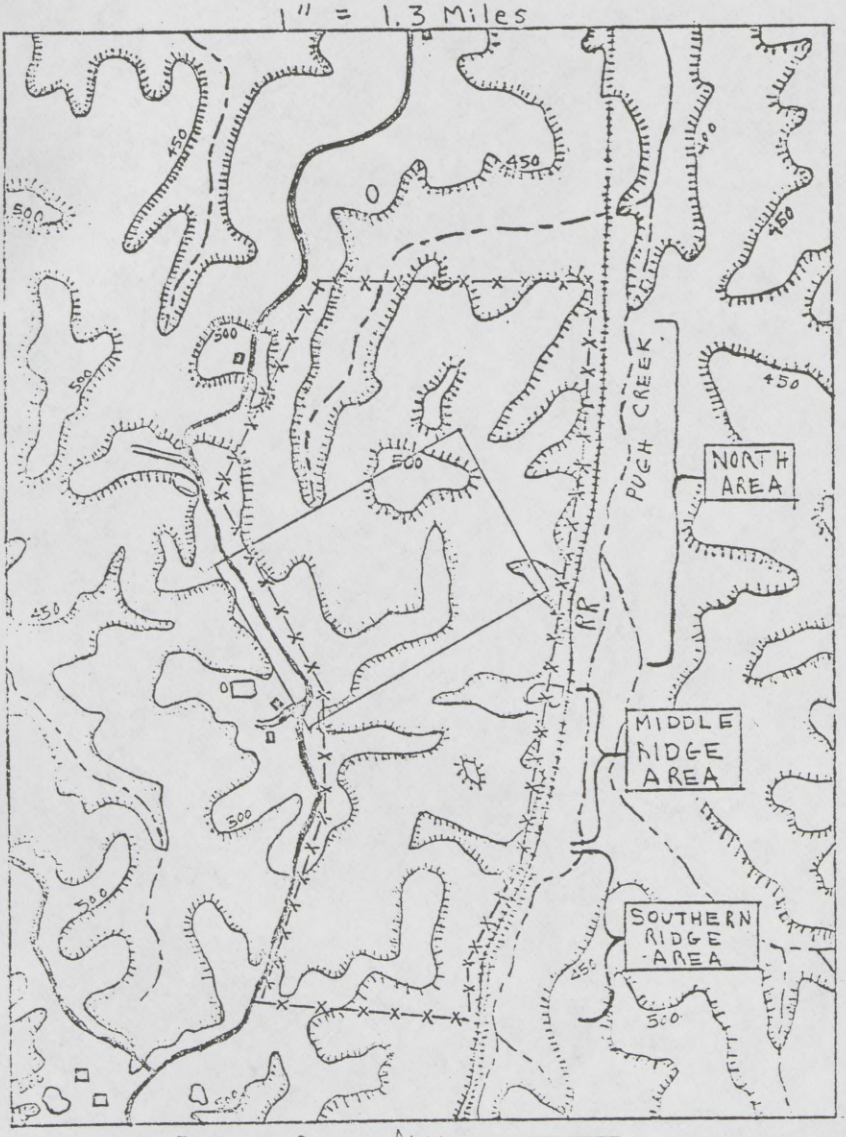


Cross section of northern area of dump looking north.

FIG. 1

Velsicol Dump Area

1" = 1.3 Miles



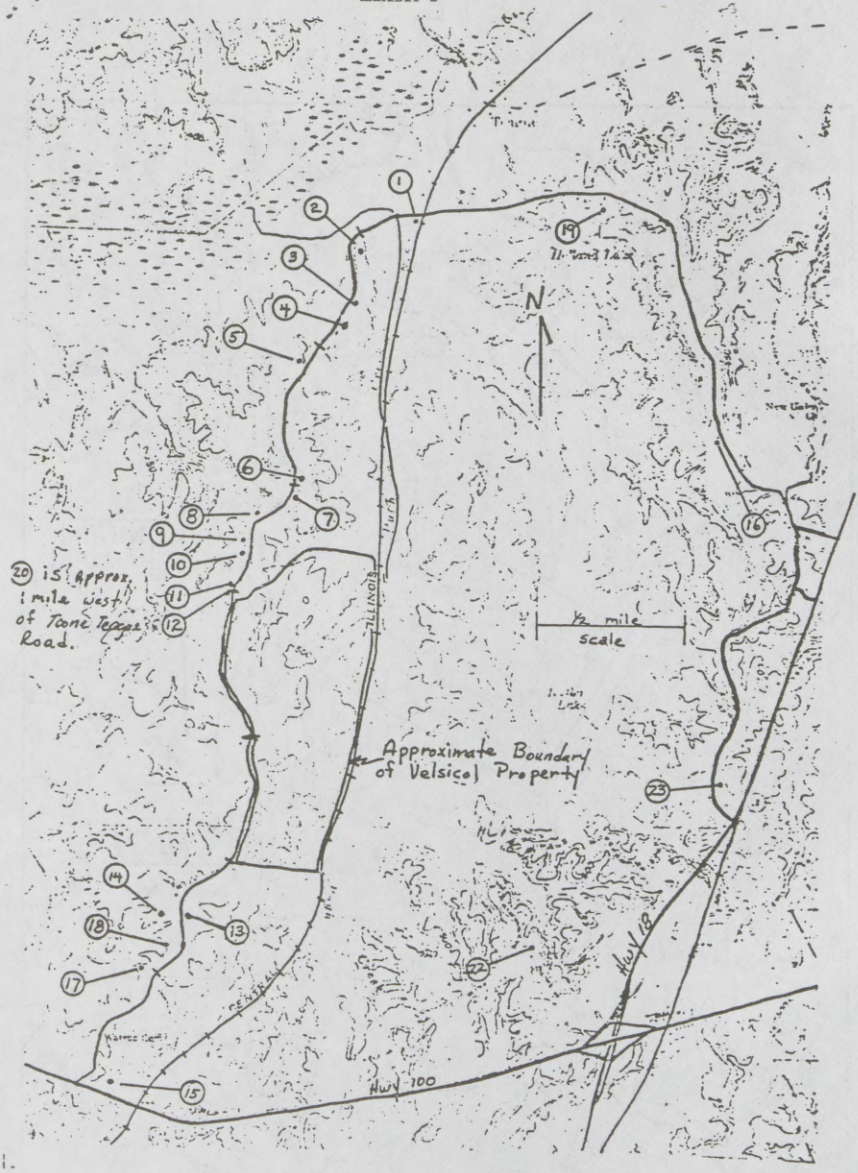
Boundary of USGS Survey Area ——————

Approximate Property Line —x—x—x—

Contour Lines ↓ Down hill

38-748 0 - 79 - 8

EXHIBIT D


1
2
3
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16
17
18
19
20 is approx. 1 mile west of Tone Teague Road.
N
½ mile scale
Approximate Boundary of Velsicol Property
ILLINOIS
CENTRAL
Hwy 100
Hwy 18

SAMPLING FREQUENCY
PRIVATE WELLS - TOONE TEAGUE AREA
Hardeman County, Tennessee

	NAME	DATES OF SAMPLING										
		12-27-77	1-31-78*	3-23	4-26*	5-2	5-4	6-14	6-22	6-23	7-26	8-14
1.	Wilmer Hutchenson				NOT SAMPLED							
2.	Robert Cox				NOT SAMPLED							
3.	Linda Young	-	-	-	-	-	-	neg.	-	-	-	-
4.	Larry Brooks	-	-	-	-	-	-	neg.	-	-	-	-
5.	Ed Young	-	-	-	-	neg.	-	-	neg.	-	-	-
6.	Woodrow Sterling	neg.	pos.	pos.	pos.	-	-	-	-	-	pos.	pos.
7.	Daniel Johnson	-	-	-	pos.	-	-	-	-	-	-	pos.
8.	J. D. Boyd	neg.	pos.	pos.	pos.	-	-	-	-	-	-	pos.
9.	William Frye	-	-	-	-	pos.	-	-	-	-	-	-
10.	Boyd Frye	-	-	-	-	pos.	-	-	-	-	-	pos.
11.	James Maness	-	-	-	-	neg.	-	-	neg.	-	-	-
12.	Faye Brooks	-	-	-	-	neg.	-	-	-	neg.	-	-
	J. A. Wilson	-	-	-	-	-	-	neg.	-	-	-	-
14.	Bill Tubbs				NOT SAMPLED							
15.	J. F. Freeman	-	-	-	-	neg.	-	-	neg.	-	neg.	-
16.	Verlise King	-	-	-	-	-	neg.	-	neg.	-	-	-
17.	Boyd Scarborough	-	-	-	-	-	-	-	neg.	-	-	-
18.	Mr. Duncan				NOT SAMPLED							
19.	Gene Evans	-	-	-	-	-	-	neg.	-	-	-	-
20.	Charles Hill	-	-	-	-	-	-	neg.	-	-	-	-
21.	Town of Toone	-	-	-	-	-	neg.	-	-	neg.	neg.	-
22.	Paul Dorris											
23.	J. A. Powers											

* Inorganic parameters also tested at this time.

RESULTS OF QUANTITATIVE ANALYSES
OF
PRIVATE WELLS IN TOONE-TEAGUE COMMUNITY
HARDEMAN COUNTY, TENNESSEE
(Parts per billion)

Constituent	NAME & DATES J.D. Boyd 4-26-78	Woodrow Sterling 4-26-78	Mr. Johnson 4-26-78	Boyd Frye 5-2-78	Bill Frye 5-2-78
Tetrachloroethylene	750	2,405	277	102	89
Hexachloroethane	0.59	1.75	4.42	0.35	0.01
Hexachloro 1,3-Butadiene	0.26ppb	2.53	0.10	0.17	0.01
Hexachlorocyclopentadiene	(0.01	(0.01	(0.01	(0.01	(0.01
Dicyclopentadiene	(0.01	(0.01	(0.01	(0.01	(0.01
Hexachlorobenzene	(0.01	(0.01	0.06	(0.01	(0.01
Pentachorobenzene	(0.01	(0.01	(0.01	(0.01	(0.01
Chlorobenzene	41,000	1,000	5,480	(0.01	2.158
1,2,4 Trimethylbenzene	NQ	NQ	NQ	NQ	NQ
1,2,3 Trimethylbenzene	NQ	NQ	NQ	NQ	NQ
1 Methylnaphthylene	NQ	NQ	NQ	NQ	NQ
2 Methylnaphthylent	NQ	NQ	NQ	NQ	NQ
Hex BCH	0.31	0.34	0.37	0.02	0.02
Isodrin	(0.02	(0.02	(0.02	(0.02	(0.02
Toluene	NQ	NQ	NQ	NQ	NQ
Hexachloro 5 Norbornadiene	NQ	NQ	NQ	NQ	NQ
Naphthylene	NQ	NQ	NQ	NQ	NQ
1,3,5 Trimethylbenzene	NQ	NQ	NQ	NQ	NQ
Endrin	0.02	(0.02	(0.02	(0.02	(0.02
Heptachlor	0.005	(0.005	(0.005	(0.005	(0.005
Chlordane	(0.05	(0.05	(0.05	(0.05	(0.05

NQ = Not Quantitated

(= <, Less Than

EXHIBIT F

NINETY-FIFTH CONGRESS

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CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
WASHINGTON, D.C. 20515

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JOHN MC ELROY ATKINSON
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TASK FORCE DIRECTORS
LOWELL DODGE—OVERSIGHT
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ELLIOT A. SEGAL—HEALTH

J. THOMAS GREENE
COUNSEL TO THE CHAIRMAN

BERNARD J. WUNDER
MINORITY COUNSEL

MEMORANDUM:

DATE: October 30, 1978

TO: The Members of the Subcommittee on Oversight and Investigations

FROM: Subcommittee Staff

SUBJECT: Chemicals Found in the Sterlings' Drinking Water (Toone, Tennessee)

Water samples obtained from Woodrow Sterling's well and tap indicate that at least six suspected carcinogens are in this family's drinking water. (See Attachment) One of the suspected carcinogens, carbon tetrachloride, was found in concentrations approximately 2400 times the maximum daily exposure suggested by the National Institute for Occupation Safety and Health (NIOSH) as safe for workers.

Carbon tetrachloride is acutely toxic and is readily absorbed in the body (See, the Subcommittee's report entitled "Carbon Tetrachloride Contamination of Public Drinking Water" pp.14-15). Some scientists believe chronic and subchronic ingestion or inhalation to it may cause a variety of ailments, including kidney, liver, lung and central nervous system damage.

The Environmental Protection Agency (EPA) has been most concerned about the presence of carbon tetrachloride in drinking water. In Febraury of 1976, EPA found concentrations of carbon tetrachloride in drinking water drawn from the Ohio River of less than 100 parts per billion (ppb). The Agency immediately cautioned the public along the Ohio River not to drink the water without boiling it. First the level of carbon tetrachloride found in the Sterlings' well is at least 48 times the level found in Cincinnati's drinking water during the period warnings were in effect.

In addition to carbon tetrachloride, EPA and the State of Tennessee identified chloroform, benzene, and the pesticides heptachlor and chlordane in the drinking water. All of these chemicals are suspected carcinogens. Other compounds found in the Sterlings' well water include chlorobenzene which is suspected of causing central nervous system depression and narcosis at high levels.

Little toxicology is available on most of the chemicals found in the Sterlings' well. However, we do know that many of these potentially dangerous compounds can be absorbed through the skin. Since the Sterlings are still bathing in this water, they continue to be exposed to potential adverse health effects.

Since very little is known about the chronic and subchronic effects of ingestion, absorption or inhalation at these levels of these organic chemicals, health studies of the population exposed are essential. Tests for organic chemicals in blood, fatty tissue and mothers milk are readily available. Although the Sterlings have volunteered to go through complete health examinations including these tests, EPA has made no plans to conduct such examinations. Questions concerning the potential adverse effects of consuming these chemicals cannot begin to be examined properly until health effects research is conducted.

RESULTS OF QUANTITATIVE ANALYSES
OF
PRIVATE WELLS IN TOONE-TEAGUE COMMUNITY
HARDEMAN COUNTY, TENNESSEE
(Parts per billion)

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1 Methylnaphthylene	NQ	NQ	NQ	NQ	NQ
2 Methylnaphthylent	NQ	NQ	NQ	NQ	NQ
Hex BCH	0.31	0.34	0.37	0.02	0.02
Isodrin	(0.02	(0.02	(0.02	(0.02	(0.02
Toluene	NQ	NQ	NQ	NQ	NQ
Hexachloro 5 Norbornadiene	NQ	NQ	NQ	NQ	NQ
Naphthylene	NQ	NQ	NQ	NQ	NQ
1,3,5 Trimethylbenzene	NQ	NQ	NQ	NQ	NQ
Endrin	(0.02	(0.02	(0.02	(0.02	(0.02
Heptachlor	0.005	(0.005	(0.005	(0.005	(0.005
Chlordane	(0.05	(0.05	(0.05	(0.05	(0.05

NQ = Not Quantitated

(= <, Less Than

DATA REPORTING SHEET

PROJECT Hardeman County, TN CHEMIST William Low RECEIVED 8/2/78 COMPLETED 8/30/78

LAB NO. 78C	STATION	MONTH	DAY	YEAR	TIME	Toluene ug/l	Tetra-chloro-ethylene ug/l	Benzene ug/l	Chloroform ug/l	Acetone ug/l	Methylene chloride ug/l	Chloro-benzene ug/l	Carbon Tetra-chloride ug/l	Tri-chloro-ethylene ug/l	
033	Freeman Well	7	26	78				NO ORGANICS DETECTED AT ≥5 ug/l							
034	Sterling Well	7	26	78		40	13	12	140	40	34	16	4300	≤5	
035	Teone Water	7	26	78				NO ORGANICS DETECTED AT ≥5 ug/l							
	Blank					0.12	0.78	0.61	ND	3.7	9.5	ND	Trace <5		

ND - None Detected

EXHIBIT G

UNITED STATES

DEPARTMENT OF THE INTERIOR

Geological Survey

POTENTIAL CONTAMINATION OF THE HYDROLOGIC ENVIRONMENT FROM THE PESTICIDE WASTE DUMP IN HARDEMAN COUNTY, TENNESSEE

by

D. R. Rima, E. Brown, D. F. Goerlitz, and L. M. Law

Water Resources Division

Administrative report to

THE FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

August 1967

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7.	Graph showing the theoretical time-of-travel of ground-water in response to continuous pumping from an ideal aquifer having the hydraulic characteristics determined for the water-table aquifer in the vicinity of the pesticide waste disposal site	26

POTENTIAL CONTAMINATION OF THE HYDROLOGIC ENVIRONMENT FROM THE PESTICIDE WASTE DUMP IN HARDEMAN COUNTY, TENNESSEE

by

D. R. Rima, E. Brown, D. F. Goerlitz, and L. M. Law

THE PROBLEM

In October 1964, The Velsicol Chemical Corporation began disposing of toxic waste materials from the manufacture of certain chlorinated hydrocarbons (pesticides) by shallow burial at a site in northeastern Hardeman County, Tennessee. Upon learning of this activity, public health officials became gravely concerned about the potential health hazard owing to the toxic nature of the wastes. Particular concern was expressed by health officials over the possibility that these toxic wastes might contaminate, and thus render useless, local and contiguous water supplies. The Company, on the other hand, expressed the opinion that shallow burial of toxic wastes was a time-honored practice and it did not pose any real or immediate hazard to public health.

In order to resolve this question, the Federal Water Pollution Control Administration requested the U.S. Geological Survey to investigate the disposal site and determine the susceptibility of contamination of the hydrologic environment resulting from the shallow burial of pesticide wastes. Concern about contamination in the hydrologic environment centered on four pertinent questions. Answers to these questions are summarized in the conclusions which follow.

CONCLUSIONS

1. Is there now contamination of the environment from disposal pits; if so, what portion is now contaminated and to what degree?

The analytical results show clearly that the shallow burial of pesticide wastes in Hardeman County has contaminated portions of both the surface and subsurface environment at the disposal site. Evidence of contamination of the surface environment was found in samples of the surface soil at the disposal site, in samples of sediment washoff from the disposal site, and in samples of the bedload in Pugh Creek as far as 1 1/2 miles downstream from the site. On the other hand, the water portion of samples from Pugh Creek did not contain any detectable amounts of chlorinated hydrocarbons.

The degree of contamination of the surface environment is indicated by the following table which compares the analysis of plant waste with the maximum reported concentrations of pesticide materials in samples from various sampling sites.

Maximum value reported in analytical results
of soil and sediment samples
(Results in micrograms per kilogram)

Constituents	Plant Wastes	Sediment washoff	Pugh Creek bedload
Heptachlor	2.0×10^8	1600	3.2
Dieldrin	1.2×10^6	250	0.24
Endrin	4.5×10^6	73	0.10
Heptachlor epoxide	3.9×10^4	6.5	0.0

It is obvious from the foregoing table that attenuation accompanies the overland movement of the reported contaminants.

In the subsurface the buried wastes have produced a zone or enclave of contamination directly beneath and peripheral to the disposal pits. Laterally, the limits of the enclave appear to be confined within a distance of 25 feet from the outermost margins of the disposal pits. The depth of the enclave, however, extends nearly to the water table which is about 90 feet beneath the land surface.

Within the contaminated enclave the degree of contamination is greatest in the formation in which the wastes are deposited where values of up to 6 million µg/kg (micrograms per kilogram) of organic chlorine were found. It is least in the outermost fringe where a concentration of 5 µg/kg of organic chlorine was recognized as a positive indication of contamination. Attenuation of the contamination with depth was clearly evident in the analytical results.

II. What is the potential contamination hazard to local groundwater from percolation?

The vertical movement of the pesticide contaminants from the disposal pits poses a contamination hazard for 2 of the 3 ground-water bodies that occur beneath the disposal pits. The shallowest groundwater body (a perched water zone) has already become contaminated as evidenced by analytical results of water samples from shallow wells marginal to the disposal pits (table 1). The portion of this zone, that is or can be contaminated, however, is limited in areal extent to about 40 acres. Moreover, it is not used as a source of water supply because it holds no water during dry seasons.

In addition to the perched water zone, a substantial portion of the local water-table aquifer, the principal source of local domestic water supplies, is exposed to the hazard of contamination from the pesticide waste disposal pits. The exposed portion has an areal extent of about 150 acres and includes the segments of the aquifer that underlie and receive recharge from the portion of the perched water zone that is susceptible to contamination, and the draws which carry contaminated wash-off from the disposal site. In addition, it includes the part of the water-table aquifer that is down gradient from the sources of potentially contaminated recharge.

There is little likelihood that ground water in the artesian aquifer will ever be exposed to contamination from the disposal pits because this aquifer does not receive recharge from any of the aforementioned contaminated or potentially contaminated portions of the environment.

III. What is the potential contamination hazard to contiguous groundwaters?

The contaminants that are entrained in the flow systems of the perched water zone and the water-table aquifer will move laterally toward the discharging boundaries of these ground-water bodies. The contaminants entrained in the perched water zone will move toward the discharging boundaries that are located within the surface ravines draining the disposal pits. The maximum rate of movement in the zone under prevailing hydraulic gradients is calculated to be about 2 feet per day. Hence, the entrained contaminants could reappear at the land surface in as little as 100 or as many as 1200 days after entry into the perched zone.

The contaminants entrained in the flow system of the water-table aquifer will migrate northeasterly following the slope of the prevailing water-table gradient. Eventually, these contaminants will be discharged into Pugh Creek. The minimum time that would be required for the entrained contaminants to reach the Creek is calculated to be 5 years.

Withdrawals from wells could conceivably induce the contaminants entrained in the flow system of the water-table aquifer to move outside the portion of the aquifer that is in danger of contamination. Assuming the withdrawals are made at the maximum yield of the aquifer (40 gallons per minute) and continued for an indefinite period of time, wells on the western side of the disposal site (upgradient) would need to be located within 900 feet of the points of entry of contaminants into the aquifer in order for contaminated water to reach the point of withdrawal. Likewise, wells north or south of the disposal site (perpendicular to the prevailing gradient) would need to be located within 1500 feet of the potentially contaminated portion of the aquifer. If pumping is intermittent or at a lower rate than the maximum yield of the aquifer, the distance that potentially contaminated water can be diverted is, of course, commensurately less. Wells outside the limits indicated are in no potential danger of contamination by subsurface movement of contaminants.

IV. Are there other hydrologic factors related to contamination hazard that have become evident directly or indirectly from this study, such as topography, drainage, or runoff intensity?

The contaminants appear to have a greater affinity for clayey earth materials than for water. It is, therefore, doubtful that the contaminants will move as rapidly in the subsurface as ground water is able to move. It is also unlikely that contaminated particles of sediment in the draws and in Pugh Creek will be relieved of contaminants merely by association with water.

Certain features of the environment of the disposal site serve to delay the contamination hazard to the hydrologic system. These are:

1. The 90-foot depth to the water table
2. The presence of 3 beds of lowly permeable clayey material in the zone of aeration
3. The prevailing easterly water-table gradient
4. The remoteness of the disposal site from local inhabitants.

Although not specifically questioned, it is pertinent that some of the pesticide waste is very acidic (pH 1-2). Some of the contaminated core samples were also acidic (pH 3.45). The presence of this acidic condition might increase or decrease the vertical permeability of the earth materials in the subsurface, and thereby affect the rate of vertical movement of contaminants through the zone of aeration.

INTRODUCTION

As evidenced by the foregoing questions, the scope of the investigation included the total field of movement of the pesticide waste materials within the hydrologic system. Considered were such hydrologic factors as surface runoff, sediment transport, hydraulics of ground-water movement, leaching and the interaction of the wastes with the environment. During the investigation, approximately 110 samples of surface runoff and washoff were collected for pesticide analysis from a network of strategic sampling sites. In addition, about 200 core samples and 10 samples of ground water were obtained for analysis from the subsurface beneath and adjacent to the disposal site.

Insofar as the analytical work was concerned, the scope of the investigation was originally limited to the four chlorinated hydrocarbons; dieldrin, endrin, heptachlor, and heptachlor epoxide because these compounds were considered to be characteristic of the buried waste materials. For these 4 pesticides the lower limits of measurement as reported herein are 0.01 micrograms per liter for water samples and 0.1 micrograms per kilogram for sediment and core samples. Later, to provide a more complete description of the waste material in core samples, total organic chlorine was determined to a lower limit of 0.5 micrograms per kilogram.

The investigation did not include an evaluation of the implications of the hydrologic findings upon the dangers to public health and welfare because such an evaluation is clearly the prerogative of health and pollution control agencies.

Description of the Disposal Site

The disposal site is located on a 300-acre farm in northeastern Hardeman County, Tennessee. It is about 1 1/2 miles northwest of the intersection of State Highways 18 and 100. (See figure 1). The site lies within the drainage area of Pugh Creek, a northward-flowing tributary to Clover Creek, and is situated near the drainage divide along the western side of Pugh Creek Valley. Hence, the general direction of surface drainage from the site is toward the east.

Topographically, the disposal site is situated on an upland remnant of a maturely dissected, fluvial terrace. The general level of the upland is about 80 to 100 feet above the flood plain of Pugh Creek. Between the flood plain and the uplands, the land surface is marked by fairly steep-sided gullies and ravines.

The disposal site is underlain by a sequence of nearly horizontal strata that are composed of deposits of sand, silt, and clay. To a depth of about 100 feet these strata consist predominantly of sand deposits interbedded with a few thin deposits of silt and clay, but below a depth of 100 feet beds of clay are predominant. The sequence and general character of the uppermost 250 feet of strata are shown diagrammatically by the geologic cross-section in figure 2. The beds of sand are numbered sequentially from the surface downward to facilitate identification in the text.

Sand number 1 is a yellowish-orange to reddish-brown, fine- to very coarse-grained, poorly sorted quartz sand. It is weakly stratified and contains small pockets and lenses of light gray to reddish-brown silt, small pieces of ironstone, and scattered pebbles of quartzite. Except for iron oxide which occurs as grain coatings and cementing material, this deposit is mineralogically almost pure silica (SiO_2).

The bed of clayey material that underlies sand number 1 is a remnant of an ancient soil that developed beneath the surface of erosion which existed prior to the deposition of sand number 1. It contains a nearly continuous bed of ironstone (iron-oxide cemented siltstone or sandstone) along its upper surface.

Sands 2, 3, and 4 are light gray to yellowish, fine- to very coarse-grained, poorly to well sorted, quartz sand. These deposits are distinctly stratified with thin (generally less than one foot) alternating beds or lenses of sand that differ in grain size and sorting. Some of the individual beds or lenses of sand in sand number 4, are composed of very coarse, well sorted quartz sand.

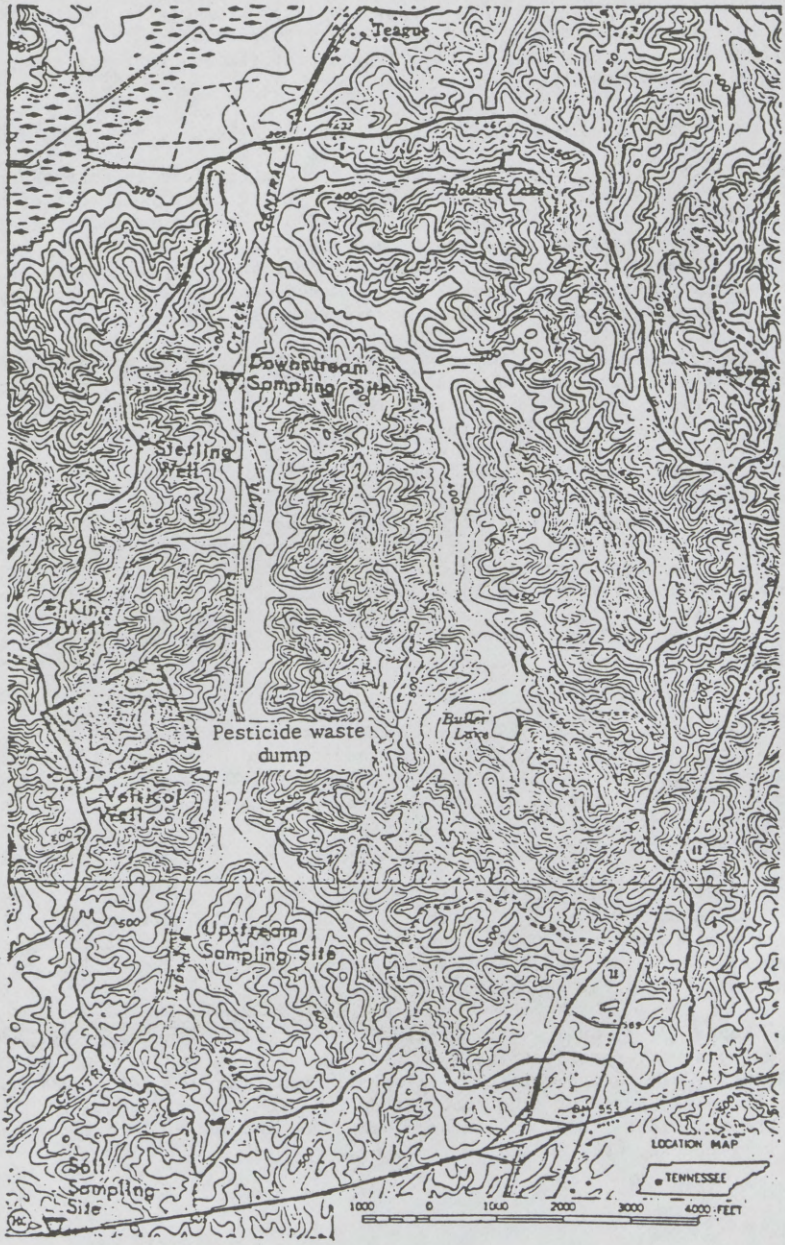


Figure 1--Map of Pugh Creek drainage basin

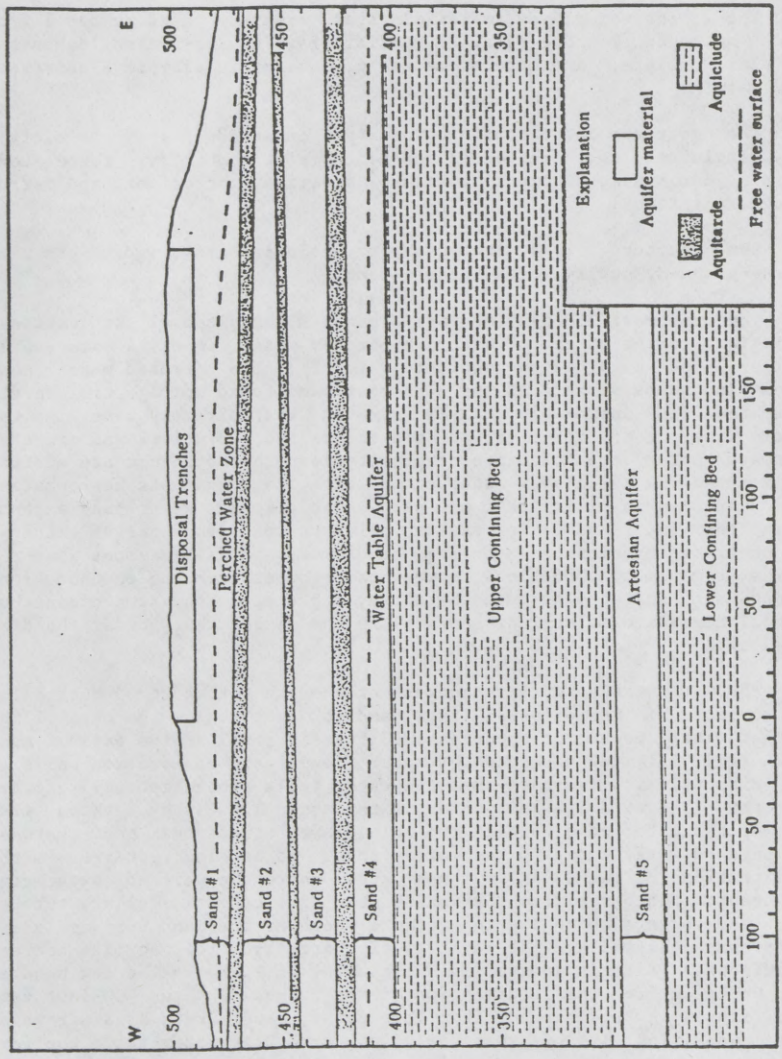


Figure 2--Geologic cross-section of disposal site.

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The 2 beds of clayey material that separate sand number 3 from sands numbered 2 and 4 (fig. 2) consist of irregular-shaped lenses and circular, oblate, and tabular masses of kaolinitic clay in a quartzose sand matrix.

The upper and lower confining beds are composed of gray- to bluish-gray, laminated- to thick-bedded and blocky silt and clay. These beds contain carbonaceous plant remains, siderite concretions, and ferruginous siltstones.

Sand number 5 is a light gray- to yellowish-gray, medium- to very coarse-grained, poorly sorted quartz sand.

The uppermost 250 feet of strata beneath the disposal site embraces 3 distinct bodies of ground water; a perched water zone, a water-table aquifer, and an artesian aquifer (fig. 2). The perched water zone occurs in the basal part of the uppermost sand (sand No. 1) immediately above the less permeable clayey stratum that directly underlies the sand. Water or any other liquid that enters the subsurface and migrates downward under the influence of gravity is prone to accumulate at this horizon because the clayey material on which the sand rests has substantially less permeability than the sand. The perched water zone expands during the winter and spring seasons owing to the abundance of recharge and contracts or dissipates during the summer and fall seasons when recharge is minimal. Doubtless, some water escapes from the perched zone by movement downward through the clayey substratum, and some escapes by lateral migration to surface seeps along the slopes that border the disposal site.

The water-table aquifer occurs at a depth of about 90 feet below the surface of the disposal site and 60 feet below the base of the perched water zone. It occupies a 10-foot interval at the base of sand No. 4 (fig. 2). Measurements of water levels in observation wells at the disposal site indicate that the water table slopes generally toward the east. The water-table aquifer is recharged locally by leakage from the perched water zone through the thin clayey strata that occur between the perched water zone and the water table. It is also recharged by the infiltration of rainfall in those areas where the perched water zone is absent. Discharge from the water-table aquifer takes place through seeps and springs which are in evidence wherever the land surface intersects the water table. The point of discharge from this aquifer nearest the disposal site is located in the channel of Pugh Creek a few hundred feet upstream from the intersection of the channel and the 400-foot contour (fig. 1). Downstream from this point, Pugh Creek is a perennial stream deriving its dry-weather flow from the water-table aquifer.

The artesian aquifer occurs at a depth of 200 to 225 feet beneath the disposal site. It is separated from the water-table aquifer by a bed of silt and clay that is about 100 feet thick. This intervening bed is an upper confining bed to the artesian aquifer. Even though the head in

the artesian aquifer as measured in the Velsicol well is less than that in the water-table aquifer as measured in well W-1 (fig. 3), the thickness and character of the upper confining bed preclude any direct hydraulic connection between the water table and artesian aquifers. Hence, recharge to and discharge from the artesian aquifer are believed to take place mainly in the outcrop area of the aquifer which is located several miles east from the disposal site. Some additional discharge from the artesian aquifer is occasioned by withdrawals from wells that tap the aquifer such as the Velsicol well near the entrance to the disposal site.

Character of the Wastes and Method of Disposal

The bulk of the waste materials that are being transported to Hardeman County for disposal consist of still bottoms and dry spent catalyst and reactor solids from the manufacture of endrin, heptachlor, and heptachlor epoxide. Included with these wastes is a minor amount of miscellaneous trash consisting of contaminated earth, laboratory wastes, and conventional land-fill materials.

Although the chemical content of the wastes is not determined prior to burial, it is obvious that the compounds contained therein include, in addition to the 3 manufactured compounds, several related compounds that are either intermediates or by-products in the manufacturing process. Samples of the liquid and solid wastes provided by the manufacturer were analyzed by electron capture gas chromatography and found to contain 1200 to 1500 mg/kg (milligram per kilogram) of dieldrin, 4500 to 5900 mg/kg of endrin, 200,000 mg/kg of heptachlor and 39 mg/kg of heptachlor epoxide (see table 6). According to the manufacturer, some of the related compounds that can be expected to occur in the wastes are isodrin, aldrin, chlordene, hexachlorocyclopentadiene, and hexachlorobicycloheptadiene. The relative quantities of these compounds in the wastes, however, are not known.

As the waste materials are generated at the plant, they are placed in used 55-gallon steel drums and fiber cartons. The drums containing liquid wastes are closed with lids to prevent spillage during shipment. The wastes are hauled to the disposal site in large dump trucks; usually several truckloads are taken to the disposal site each day. Upon arrival at the site the wastes, including the containers, are dumped into elongated pits or trenches which have been excavated to a depth of about 12 feet and a width of about 15 feet. In the process of dumping, many of the containers are crushed or otherwise ruptured and their contents released within the trenches. After each dumping the wastes are covered with a minimum of 3 feet of earth material.

As of the writing of this report (June 1967), the trenches in which pesticide wastes have been buried are grouped into 3 adjoining areas or plots as shown on figure 3. Within each plot the trenches are spaced from 5 to 12 feet apart. Plot number 1 was used for dumping from October 1964 until May 1966, and Plot number 2 was used from April 1966 until May 1967. Plot number 3 has been in use since mid-March 1967.

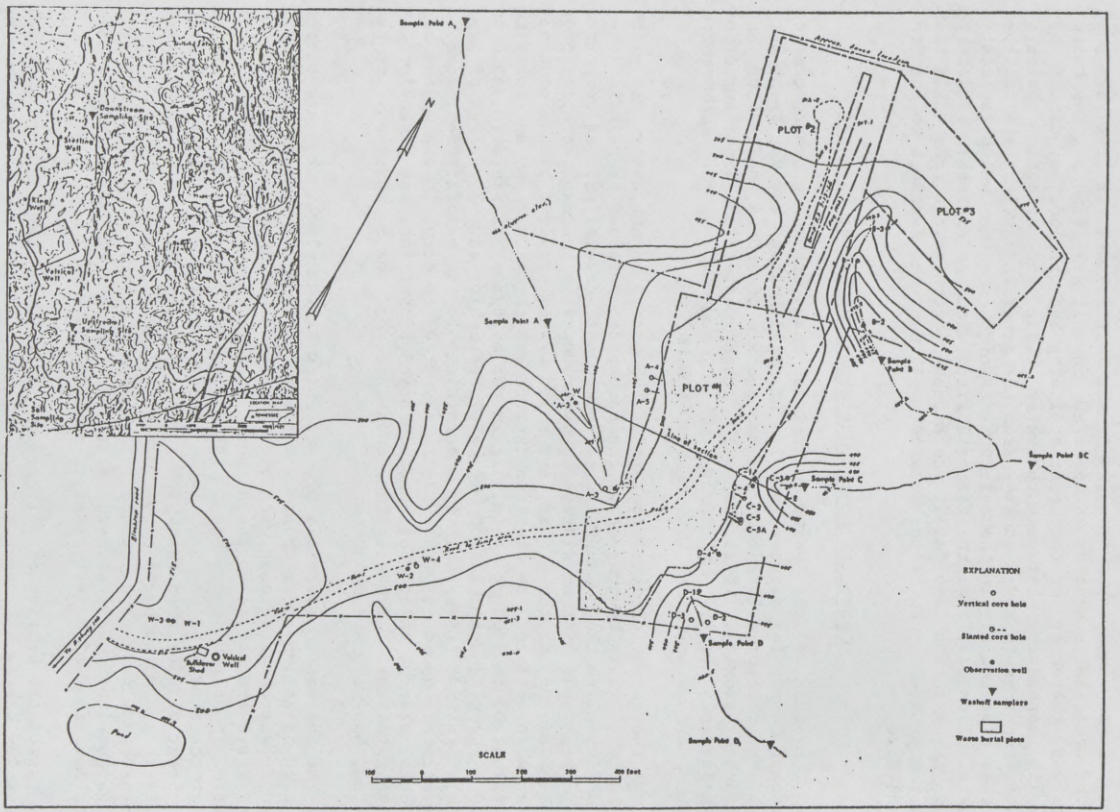


Figure 3--Map of the dump site showing the locations of the waste burial plots and the sampling sites and test wells

EXPERIMENTAL PROCEDURE

During the course of the investigation of the pesticide dump, about 320 samples of water and earth-materials were collected from various locations in and near the dump site. The location of the sampling sites are shown on figure 3. Special precautions were taken to ensure that the sampling apparatus and sample containers were not contributors of contamination.

About 90 samples of runoff and sediment washoff were collected from the sampling devices that were installed in the 4 ravines or draws leading away from the dump. The washoff sampling apparatus consisted of a V-shaped aluminum pan and a glass sample bottle. The pan served to divert the sediment-laden washoff and convey it into the glass bottle which was placed under the open nose of the pan. The bottle was covered with a stopper through which an aluminum funnel and an air bleed protruded to trap the sample in the bottle. After each heavy rainfall the sample-filled bottle was retrieved and capped for shipment to the laboratory. In addition, a sample of the material retained on the V-shaped pan was collected for shipment to the laboratory. After each sample collection, the sampling apparatus was mechanically cleaned, rinsed with Nanograde® hexane and reassembled with a fresh sample bottle.

An additional 16 samples of runoff and sediment were collected from Pugh Creek. One of these samples was collected at a sampling site upstream from the disposal site (fig. 3, inset map). The remainder was collected during periodic visits to the downstream site (fig. 3, inset map). During most of these visits, a sample of the bedload material was also collected.

Samples of ground water were collected from the nearest available wells tapping each of the 3 water-bearing zones. Samples from the perched water zone were obtained from wells A-1, A-2, B-1, and B-2 which are located on the periphery of the dump site (fig. 3). Samples from the water-table aquifer were obtained from the King and Sterling wells (fig. 3, inset map) and samples from the artesian aquifer were obtained from the Velsicol well near the entrance to the disposal site.

To investigate the occurrence of pesticides in the subsurface, about 200 core samples were obtained at selected depths from 18 test wells that were drilled at various distances from the margins of the disposal site. The locations of these test wells are also shown on figure 3. Six of these wells were drilled on an angle to obtain samples of earth material from different stratigraphic horizons beneath the disposal pits without penetrating the burial trenches.

As the cover soil at the disposal site was known to be contaminated (table 6), it was necessary to develop core sampling techniques that would not spread the contamination in the drilling process. To avert this danger, a Porter fixed-piston drive sampler was used because the core barrel of this device remains closed until the piston is removed for sampling by means of a center rod. To obtain a core sample, the

device was inserted into the borehole and the barrel was driven 6 or 8 inches into the bottom of the hole before the piston was removed. Then, with the core barrel opened at the bottom, the sampler was driven an additional 2 to 4 feet to obtain the core sample.

Loading and unloading the core barrel were carefully attended. Prior to use, the brass core barrel liners and caps were first washed in alcoholic sodium hydroxide, then in dilute hydrochloric acid, and finally rinsed in distilled water. After air drying, the liners and caps were wrapped separately in aluminum foil and sent to the test site. In the coring process the core barrel and all attachments were thoroughly cleaned and rinsed with Nanograde® hexane. Then the liners were unwrapped and inserted into the core barrel. Next, the center rod with its fixed piston was positioned in the core barrel so that the bottom end of the core barrel was completely closed. As an additional precaution, glass wool was packed into the core barrel extension around the piston rod just above the core chamber. This was done to prevent dirt from dropping down into the core barrel during the coring operation.

After retrieving the core barrel from the borehole, the core-filled liners were removed from the barrel and wrapped in new foil for shipment to the laboratory. Polyethylene gloves were worn by field personnel during the latter step to avoid contaminating the sample.

As previously stated, this study involved a considerable number of laboratory analyses. To achieve the desired objectives, the analyses were performed by two laboratories. The water, soil, and sediment samples were analyzed by the USGS pesticide laboratory at Sacramento, California, and the core samples were analyzed by the USGS pesticide laboratory at Menlo Park, California.

Gas chromatography using both electron capture and microcoulometric modes of detection was used as the principal method of analysis for this study. The high resolving characteristics of the gas chromatograph enables the analyst to separate and identify the components in a mixture of volatile organic compounds. The electron capture detector is extremely sensitive, capable of detecting a few picograms (10^{-12} grams) of compound, but is nonspecific. The microcoulometric detector, while less sensitive, requiring at least 10^{-8} grams of compound, specifically detects halogenated components. Gas chromatography is a widely accepted method for the determination of pesticide residues.

Analysis of Water and Sediment Samples

Owing to the nature of the sampling devices used and the runoff conditions, the runoff and sediment washoff samples contained varying proportions of water and sediment--from dry soil to essentially all water.

Whenever it was possible to do so, the water and sediment were separated and analyzed separately. Samples were analyzed by microcoulometric titration or by electron capture gas chromatography or both depending upon the concentration of organic material in the sample.

Water Samples

Water samples obtained from the wells and Pugh Creek were sufficiently low in color and interfering organic matter that cleanup was not required. Analysis was accomplished by simple extraction of 1-liter samples with 75 ml (milliliters) of hexane, evaporation of the extractant to 5.0 ml, and injection of 5.0 µl (microliters) into the gas chromatograph (Lamar and others, 1966, p. 187). In all cases, injections into two different columns were made. Operating conditions for the electron-capture gas chromatographic procedure were as follows:

Instrument	:	Aerograph Hy-FI Model 600-D, with a Wilkens Model 328 isothermal temperature controller
Columns	:	1. 1/8 inch by 5 foot pyrex glass, packed with 60/80 mesh Gas-Chrom Q coated with 5 percent w/w (weight per weight) DC 200
		2. 1/8 inch by 5 foot pyrex glass, packed with 60/80 mesh Gas-Chrom Q coated 5 percent w/w QF-1
Oven temperature	:	187°C
Detector	:	Electron-capture, concentric tube design
Carrier gas	:	Nitrogen at 40 ml/min.
Injection volume	:	5.0 microliters

Water samples obtained from surface runoff down the 4 draws generally contained sufficient chlorinated organic compounds to permit microcoulometric analysis in addition to the more sensitive electron capture gas chromatography.

These samples usually contained large amounts of extraneous material and required the application of a cleanup procedure prior to analysis. Preparation for analysis included extraction of 1-liter samples with 75 ml of hexane, evaporation of the extractant to 0.5 ml, and cleanup of the concentrated extract by column chromatography. Woelm alumina deactivated before use with 5 percent w/w water (de Faubert Maunder and others, 1964), was used in a micro column as described by Goerlitz and Lamar (1967). When the 0.5 ml of the extract was eluted through a 4 by 30 mm (millimeter) alumina column with 5.0 ml of hexane, the first 1.5 ml of eluate contained any heptachlor in the sample. The second eluate fraction of 4.0 ml contained any dieldrin, endrin, or heptachlor epoxide. Following elution, the two fractions were prepared for gas chromatographic analysis by dilution with hexane to 2.0 and 5.0 ml respectively.

Since the dieldrin fraction seldom contained sufficient material to permit microcoulometry, it was analyzed by injection of 5.0 µl into two electron-capture gas chromatographic columns. The heptachlor fraction, which always contained the major amount of chlorinated organics present in any sample, was analyzed by injection of 5.0 to 40.0 µl into the microcoulometer. Operating conditions for the microcoulometric analysis were as follows:

A. Chromatograph

Column	:	1/4 inch by 5 foot pyrex glass, packed with mesh Gas Chrom Q coated with 100 percent w/w DC 200
Injection temperature	:	210°C
Column temperature	:	187°C
Carrier gas	:	Nitrogen at 120 ml/min.

B. Microcoulometer

Inlet sweep gas	:	Nitrogen at 10 ml/min.
Combustion gas	:	Oxygen at 60 - 70 ml/min.
Inlet temperature	:	220°C
Combustion tube temperature	:	920 ± 10°C

Soil and Sediment samples

Sample material collected for analysis in this category included: soil from the surface of the dump area; surface soil one mile away from the dump; sediment transported down the draws during runoff events; suspended sediment and bed material from Pugh Creek; and clay hauled in to repack the wells drilled to monitor water movement away from the dump site.

Of these materials, only the soil from the surface of the dump proper and the sediment moved down the draws by rainfall contained chlorinated organic compounds in sufficiently high concentration to allow analysis by microcoulometry. Other soil and sediment samples were analyzed by electron capture gas chromatography following suitable sample preparation.

Most samples were received in a moist condition. To avoid the risk of losing volatile components during drying, all samples were analyzed as received. The dry sample weights were computed from moisture determinations and the results reported on a dry weight basis.

In order to improve extraction and removal of organics from the moist materials, all samples were extracted with acetonitrile according to the following procedure. A 25- to 100-gram sample of soil was extracted with 25 to 100 ml (milliliters) of acetonitrile and filtered. The filtered extract was diluted with an equal volume of water and then 25 ml of hexane were added. After separation and drying, the hexane was reduced in volume to 0.5 ml. These extracts were subjected to the alumina cleanup procedure previously described and analyzed by either microcoulometry or electron capture gas chromatography, depending on the concentration of organic material present. This method proved to be an efficient method for the extraction of the four pesticides from the soil sample.

Discussion of results

It should be noted that the four pesticide compounds (dieldrin, endrin, heptachlor, and heptachlor epoxide) could not always be identified among the chlorinated hydrocarbon materials that were observed. Nevertheless, the observed compounds are believed to be closely related and of equal significance in indicating the contamination of the environment of the dump site. Therefore, the fact that the analytical results are, in some instances, presumptive rather than conclusive does not detract from their use in describing the extent and degree of contamination from the disposal pits.

Wells - The analytical results of water samples from wells are given in table 1. Analysis of samples obtained from the 3 water-supply wells (King, Sterling, and Velsicol wells) nearest the dump site showed no evidence of contamination by chlorinated hydrocarbons. However, the water samples that were obtained from 3 out of 4 of the shallow wells (A-2, B-1, and B-2), located on the margin of the dump site did contain chlorinated hydrocarbons. These wells were sampled, pumped dry, allowed to rewater, and resampled. The values reported in table 1 for each sample are those obtained by electron capture gas chromatography utilizing two different columns. The quantities of the 4 pesticide compounds found, however, are relatively small, ranging from 0.01 to 0.11 µg/kg (micrograms per kilogram).

Pugh Creek - Results of analysis of water and sediment samples obtained from Pugh Creek are given in table 2. These data indicate the presence of small amounts of chlorinated hydrocarbons in the stream bottom sediment 1 1/2 miles downstream from the disposal site. The quantity found is in excess of that prevalent in the area away from the dump site and is therefore presumed to have originated from the pit area.

Only 2 samples of water gave any indication of the presence of any of the 4 primary chlorinated compounds. Hence, contamination of the water in Pugh Creek from the disposal pits is only an assumption.

Draws - The analytical results of runoff and washoff samples from the 4 draws draining the disposal site are given in table 3. Results of two-column electron capture gas chromatography indicated the presence of dieldrin, endrin, and heptachlor epoxide in most of the draw samples tested. The presence of heptachlor was indicated by microcoulometric titration following one column separation but duplication of these results on a second column could not be obtained. It must be concluded, therefore, that heptachlor was not present in any of the draw samples analyzed, but a chlorinated compound similar to heptachlor was detected. The amounts of these compounds that were found ranged from as little as 0.02 µg/kg to as much as 1,600 µg/kg.

It was generally noted that higher concentrations were found in those samples that were collected from the bottle portion of the samplers than were found in the all-sediment samples that were retrieved from the pan portion of the samplers. This was probably due to loss of the more volatile organic materials from the pan sample as a result of exposure to the atmosphere and sunlight before the samples were picked up by field personnel.

Although a great deal of variation can be noted in the concentrations of organic materials found, both as to time and place, there does appear to be a definite decrease in concentration in each draw with increase in distance away from the pit area. This observation, together with the occurrence of high concentrations in samples with sediment, indicates the principal mode of transport to be adsorption on sediment particles. More precise quantitative relationships could not be developed owing to the limited data available and lack of adequate sampling control.

Analysis of Core samples

The core samples were analyzed for dieldrin, endrin, heptachlor, and heptachlor epoxide. In addition, the total organic chlorine content, moisture content (Association of Official Agricultural Chemists, 1940, p. 1) and pH (Peach, 1965, p. 914) of most of the samples were determined. As a control, the top and bottom sections of each core sample were analyzed separately to identify any contamination that might have been introduced during the coring process. The routine analysis of the cores consisted of the following procedures.

Extraction

A 50.0 g sample of pulverized soil was shaken in an acetone-hexane solvent. The extract was decanted from the soil into a separatory funnel. This was repeated three times and the combined extracts were washed with water to remove the acetone. The extract was dried over sodium sulfate. The dried extract was then either concentrated or diluted to a known volume. This method was found to be adequate for the extraction of the four pesticides from the soil samples.

Gas Chromatography

The gas chromatographic analysis was performed in a stepwise manner. First, the extract was analyzed by electron capture gas chromatography using a 1/8 inch by 5-foot Gas Chrom Q column coated with 5.0 percent w/w DC-200 and 0.5 percent w/w Carbowax 20M. Further concentration adjustments and cleanup (as described under Analysis of Water and Sediment Samples) if indicated, were performed at this time. The extract was analyzed a second time by electron capture gas chromatography using a 1/8 inch by 5-foot Gas Chrom Q column coated with 5.0 percent w/w QF-1 and 0.5 percent w/w Carbowax 20M. If a particular compound of interest was indicated by the previous two analyses, a third analysis was made on a 1/8 inch by 5 foot Gas Chrom Q column coated with 2.3 percent w/w Versamid 930. If the concentration of the component(s) was high enough, microcoulometric detection was employed for the third analysis, otherwise the more sensitive electron capture detector was used again. If the soil extract had only 3 or 4 major components, gas chromatographic identification was made using 3 different types of columns. Further, when a component was present in amounts large enough to permit microcoulometry, agreeing quantitative data from the two detection systems was considered essential to identification. Gas chromatography alone was not sufficient for analysis of more complex mixtures, therefore, thin-layer chromatography was used for preliminary separation of components.

Thin-Layer Chromatography

Microliter quantities of the extract were spotted on a silica gel thin-layer chromatographic plate and developed with hexane. The components that migrated a distance equal to that of standards spotted and visualized on the same plate were scraped from the plate and extracted into hexane. The resulting solution was then subjected to three-column gas chromatographic analysis.

Total Chlorine

To provide a more complete assay of the soil contaminants than could be obtained from the measurement of only a few of the identifiable components by conventional gas chromatography, a method was devised whereby the total chlorine content of the volatile extractables could be measured. The total chlorine analysis involved temperature programmed microcoulometric gas chromatography on a very short column. The soil extract was concentrated to a suitable volume and injected onto a 3 percent w/w Apiezon L column, 1/4 inch O.D. by 3.0 inches long. The solvent was swept from the column with nitrogen gas at room temperature. After a predetermined time the column was heated to 300°C in two minutes. Following combustion of the eluate the total chlorine was measured with a microcoulometric titrating cell. An experimental check of the total chlorine procedure demonstrated that this technique is applicable to determining the total chlorine content of compounds having boiling points as low as hexachlorocyclopentadiene and as high as methoxychlor. The total chlorine in an extract from 50 g of soil sample was measured to a lower limit of 0.5 µg/kg.

Discussion of Results

When waste materials were detected in significant amounts in the core samples they appeared as a complex mixture. However, none of the compounds of primary interest (dieldrin, endrin, heptachlor and heptachlor epoxide) was positively identified (limit of measurement 0.1 micrograms per kilogram) in the 200 core samples that were examined. Initial qualitative results suggested the presence of heptachlor, but comparison of electron capture and microcoulometric data showed a marked difference in response. This observation indicated that either another compound, or compounds, eluted with heptachlor, on both DC-200 and QF-1 columns, or that heptachlor was not present. The introduction of a third analytical column, Versamid 930, provided the necessary resolution of components and proved that the compound in question was not heptachlor.

Because none of the components extracted from the soil samples was identified as one of the four compounds of primary interest, the analysis was expanded to include other pesticides and chemicals involved in the manufacture of pesticides. In addition to the previously mentioned pesticides the compounds aldrin, chlordene, chlordenechlorohydrin, hexachlorobicycloheptadiene, hexachlorocyclopentadiene and isodrin were included. Owing to the multiplicity of components in the soil extract it was not possible to identify the individual compounds by simple gas chromatographic analysis.

Adequate preliminary separations by column adsorption chromatography were not attained but separations were obtained on thin-layer chromatographic plates. A component of the mixture that migrated similar to an isodrin standard was removed from the plate. The hexane extract of the thin-layer adsorbent showed by three column gas chromatography that isodrin was one of the components present in the waste material found in the core samples. Since a number of other compounds migrated with isodrin on the thin-layer plate, infrared spectroscopy could not be used to further confirm the identity of this compound.

Considerable effort was expended in attempting to identify the compounds found in the core samples so that quantitative data could be obtained. Quantitative data were required to describe the extent of waste movement from the disposal trenches. Isodrin was the only component of the complex mixture that was identified. This fact alone was inadequate for measurement of waste in the contaminated soil. It was observed, however, that virtually all of the gas chromatographable components of the waste material in the soil extracts were chlorinated compounds. In light of this, a method for the analysis of the soil extracts for total chlorine was devised. The successful application of this technique, while not qualitative with respect to individual compounds, was found to give an overall quantitative estimation of waste materials in the core samples.

Tables 4 and 5 show the results of the total chlorine analyses, expressed in terms of dry soil samples. The concentrations reported for well W-4 (excluding the surface core sample) are believed to be representative of the natural or background concentrations of total organic chlorine in the dump area. For this reason, a concentration of about

double the highest background value or 5 µg/kg (micrograms per kilogram) was chosen as representative of the threshold of contamination. Using this value, the contaminated core samples can be readily identified from the values given in tables 4 and 5.

The relationships between the depth of contaminated core samples and subsurface features of the dump site are shown diagrammatically in figure 4, an east-west cross-sectional view of burial plot number 1. In order to retain the relative positions of the core samples with respect to the margins of the burial plot, the test wells were projected into the cross-section parallel to the margins of the burial plot.

Core samples taken from directly beneath the burial trenches were the most contaminated. A relatively high degree of contamination was found to extend from the bottom of the pits down to the first bed of clayey material--some 20 to 25 feet below the bottom of the pits. Within this clayey bed the concentration of chlorine from pesticide wastes decreased sharply to less than 5000 µg/kg, and core samples taken from a few feet below the first clayey bed down to the top of the zone of saturation contained 11 µg/kg or less of chlorine from pesticide waste.

Cores from wells drilled vertically beside the waste pits showed considerably less contamination in all zones. Samples taken from sand number 1 within a lateral distance of 5 to 10 feet of the trenches contained only about 175 µg/kg or less of chlorine from pesticide waste. Samples from the same sand at greater distances away contained little or no contamination from the waste material buried in the disposal trenches.

It is evident from the information shown on figure 4 that the predominant direction of movement of the wastes from the disposal pits is downward. It is also evident that some lateral movement of the wastes has taken place, particularly along the beds of clayey earth material. This leads to the interpretation that the downward movement of the wastes is rapid until a clayey stratum is reached. The clayey stratum, in turn, serves to retard or attenuate but does not arrest the downward movement of the wastes. Thus, the downward movement of the wastes can be expected to continue beyond the limits shown in figure 4. Conceivably, the wastes will move downward until an effective barrier is reached.

POTENTIAL CONTAMINATION OF GROUND-WATER SUPPLIES

Having established the existence of a subsurface zone of contamination from the disposal pits, it is imperative that the potential contamination hazard to local and contiguous ground waters be thoroughly evaluated. In view of the severity of the risks involved, it must be assumed that any ground water originating in or passing through the contaminated zone is susceptible to contamination and therefore becomes a serious threat to any water supplies downgradient from the disposal area. Thus, far, evidence has been presented to indicate that ground water in both the perched water zone and the water-table aquifer is susceptible to contamination from the disposal pits. There is, however,

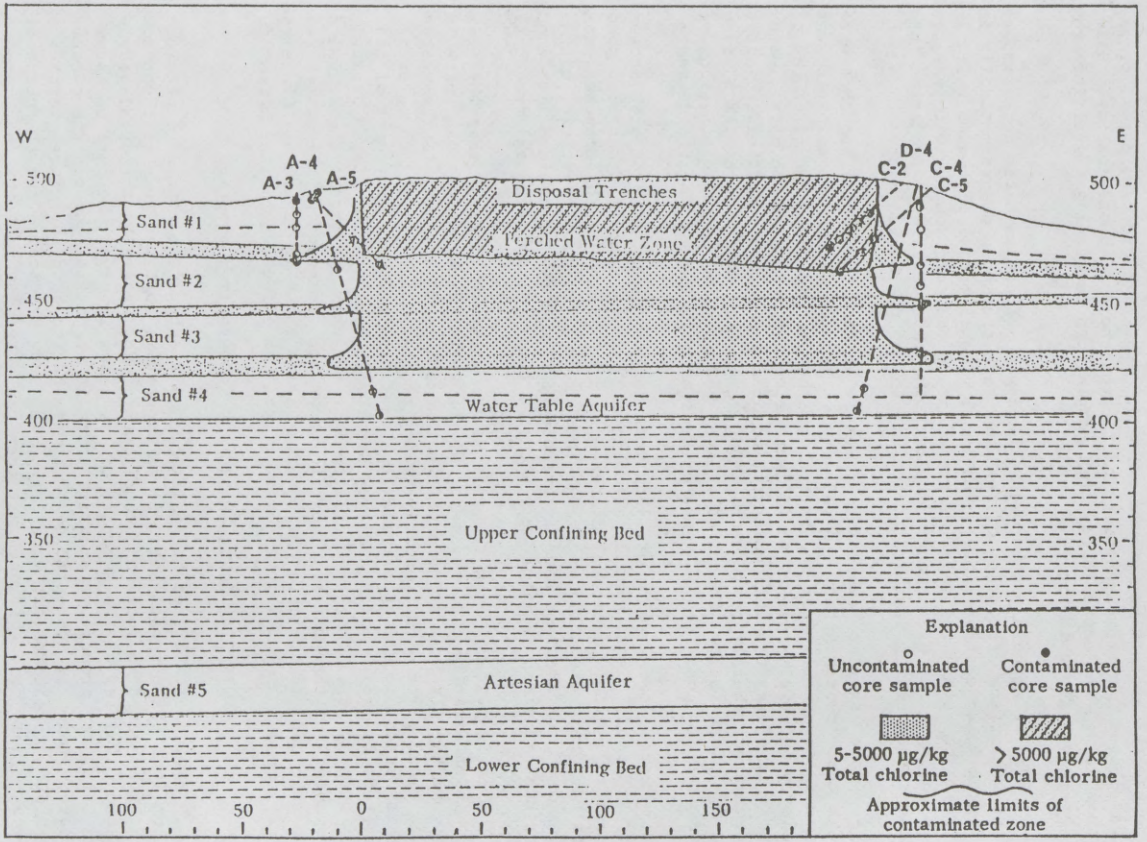

W
E
A-4
A-3
A-5
D-4
C-2
C-4
C-5
590
500
Disposal Trenches
Perched Water Zone
Sand #1
Sand #2
450
450
Sand #3
Sand #4
Water Table Aquifer
400
400
Upper Confining Bed
350
350
Sand #5
Artesian Aquifer
Lower Confining Bed
100
50
0
50
100
150
Explanation
Uncontaminated core sample
Contaminated core sample
5-5000 µg/kg Total chlorine
> 5000 µg/kg Total chlorine
Approximate limits of contaminated zone



Figure 5--Map of the Pugh Creek basin showing the areal extent of the perched water zone that is susceptible to contamination from the disposal pits (cross-hatching).

Potential Movement of Contaminants in the Water-Table Aquifer

The direction of movement of ground water in the water-table aquifer is significantly different from that in the perched water zone owing to the differences in the configuration of the free water surfaces of the two water bodies. In comparison, the free water surface (water table) of the water-table aquifer has a very gentle gradient from the topographic divide of Pugh Creek valley toward outcrops of the water-table aquifer in the channels of Pugh Creek and its perennial tributaries. Hence, in the vicinity of the disposal area, ground water in the water-table aquifer moves toward the north and east.

The direction of water movement in the water-table aquifer in the vicinity of the disposal site is shown in figure 6, a generalized flow net drawn on the basis of water-level observations in early April 1967. The portion of the water-table aquifer that is susceptible to contamination from the disposal pits is also shown on figure 6. Included are the portions of the aquifer that are either directly beneath or downgradient from (1) the disposal pits, (2) the portion of the perched water zone that is subject to contamination, and (3) the draws which carry contaminated washoff from the disposal area.

Thus, water entering or passing through the water-table aquifer from potentially contaminated sources will tend to move northeasterly toward Pugh Creek. Moreover, the contaminants entrained in this flow system could eventually be discharged into Pugh Creek. According to Moore (1965, p. 20) the average coefficient of permeability of the sand comprising the water-table aquifer is 570 gpd/ft^2 (gallons per day per square foot). If it is assumed that the maximum coefficient of permeability of the water-table aquifer at the dump site is 1000 gpd/ft^2, the minimum time that would be required for water to move from beneath the disposal pits to Pugh Creek (a distance of about 1500 feet) under the prevailing water-table gradient is about 5 years.

The foregoing description of the contamination potential of the water-table aquifer will prevail unless or until the prevailing water-table gradient is altered by heavy pumping from the aquifer in the vicinity of the disposal area. In that event, the prevailing flow system in the water-table aquifer could be modified and thereby allow water from the portion of the aquifer that is suceptible to contamination to move toward the point or points of withdrawal. It should be noted, however, that this hazard would exist only while pumps were actually in operation because as soon as the pumps were turned off water levels would tend to recover and the prepumping flow pattern would doubtless be reestablished within a matter of hours.

The susceptibility of wells tapping the water-table aquifer to contamination from the disposal pits is dependent upon (1) the magnitude and duration of pumping, (2) the distance between the well site and the nearest possible source of contaminated ground water, and (3) the relative position of the well with respect to the prevailing west-to-east water-table gradient. None of the wells tapping the water-table aquifer



Figure 6--Map of the Pugh Creek basin showing the direction of groundwater movement in the vicinity of the pesticide waste disposal site (dashed arrows), and the areal extent of the water-table aquifer that is susceptible to contamination from the pesticide waste disposal pits (cross-hatching).

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in the neighborhood of the disposal site are capable of pumping in excess of 10 gpm (gallons per minute) and none are pumped for more than a few hours at a time. Hence, the particles of water that are withdrawn from the well are obtained from storage in the aquifer not more than a few feet from the well, whereas the nearest well is at least 800 feet from a potential source of contamination. Furthermore, all of these neighborhood wells are located with respect to the disposal site either upgradient or perpendicular to the gradient. There is, therefore, no possibility for any existing water-table wells to produce potentially contaminated water from the water-table aquifer.

To determine just how susceptible a given well location might be to contamination from the disposal site, computations were made of the maximum distance water would travel through an ideal aquifer having the hydraulic properties assigned to the water-table aquifer for any specified period of pumping. The values used in the computations were selected to insure maximum velocities of ground-water movement. A rate of pumping of 40 gpm was used because it is the maximum rate of pumping that the water-table aquifer can possibly sustain within a radius of several miles from the disposal site. Similarly, a value of 1000 gpd/ft^2 was used for the coefficient of permeability because it is the highest value that can be inferred from the character of the aquifer. A storage coefficient of 0.2 was used not only to reflect water-table conditions, but also to insure a maximum radius of influence of pumping.

The results of the computations are presented graphically in figure 7. The dotted line shows the influence of pumping alone on the time-of-travel of ground water and should be used only where the water table is perfectly flat. The dashed line represents the resultant of the influence of pumping acting perpendicular to the force of the prevailing (0.13 percent) water-table gradient. The solid line represents the resultant of the influence of pumping acting in opposition to the prevailing gradient. Both the solid line and the dashed line terminate at the distance from the well where the influence of pumping is insufficient to overcome the force of the prevailing gradient.

To illustrate the use of the graph, assume that the King well is turned on and pumped continuously at 40 gpm. This well is 800 feet upgradient from the draw that carries contaminated surface washoff from the disposal pits. Hence, water that recharges the water-table aquifer from the centerline of the draw has been exposed to contaminants from the dump area. To determine how long the King well would have to be pumped at 40 gpm to allow potentially contaminated water to reach the well, enter the graph (fig. 7) on the vertical scale at 800 feet, follow across to its intersection with the solid line and read the time value on the horizontal scale. The answer is 6200 days or 18 1/2 years. If the pump were turned off at any time within the 18 1/2 years, the natural gradient between the well and the draw would be restored and the potentially contaminated water would move in the opposite direction away from the well.

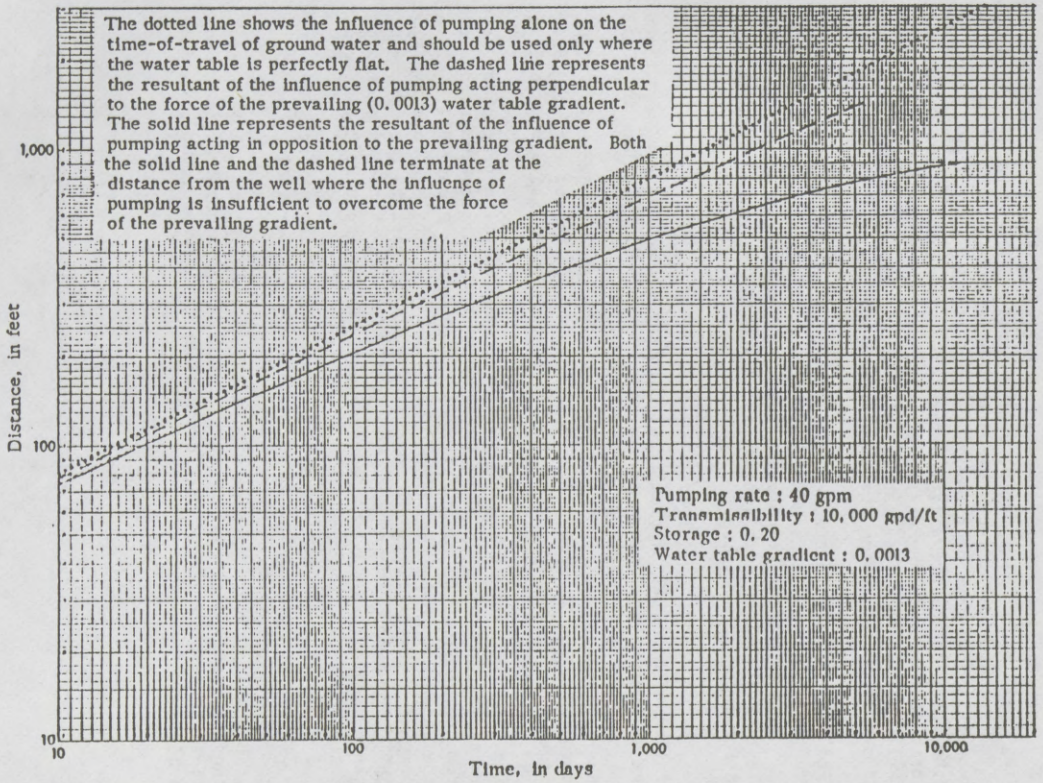


Figure 7--Graph showing the theoretical time-of-travel of ground water in response to continuous pumping from an ideal aquifer having the hydraulic characteristics determined for the water-table aquifer in the vicinity of the pesticide waste disposal site.

The dashed line should be used to determine the length of time the Sterling well would have to be pumped continuously at 40 gpm to induce potentially contaminated recharge water from the draw to reach that well. The answer is 5600 days or about 15 years if indeed this well could overcome the force of the prevailing water-table gradient and divert water to the north from such a long distance to the south. Moreover, in the event this well were turned off at any time during the 15 years, the contaminants would cease moving northward and begin moving toward the east.

Wells at greater distances than those mentioned would, of course, require greater magnitudes and longer periods of pumping to permit potentially contaminated water to reach them. The water-table aquifer is incapable of sustaining such yields, and hence the potential contamination hazard for such wells is nil.

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Table 1.--Analytical results of ground-water samples from wells

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
			Artesian aquifer			
Velsicol well	10-14-66	0.00	0.00	0.00	0.00	
Do.	10-14-66	0.00	0.00	0.00	0.00	
			Water table aquifer			
Sterling well	10-14-66	0.00	0.00	0.00	0.00	
J. H. King well	10-14-66	0.00	0.00	0.00	0.00	
			Perched water zone			
Well A-1	2-16-67	0.00	0.00	0.00	0.00	before pumping
Do.	2-16-67	0.00	0.00	0.00	0.00	after pumping
Well A-2	2-16-67	0.02	0.01	0.02	0.01	before pumping
Do.	2-16-67	0.01	0.01	0.02	0.00	after pumping
Well B-1	2-16-67	0.07	0.10	0.11	0.00	before pumping
Well B-2	2-16-67	0.07	0.04	0.06	0.01	before pumping
Do.	2-16-67	0.06	0.05	0.07	0.02	after pumping

1/ Limit of measurement is 0.01 µg/kg

Table 2.--Analytical results of surface water and sediment samples from Pugh Creek

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
			Upstream sampling site			
Streamflow	5-23-66	0.00	0.00	0.00	0.00	
			Downstream sampling site			
Streamflow	5-23-66	0.00	0.00	0.00	0.00	
Do.	5-23-66	0.20	0.00	0.03	0.00	1% sediment
Do.	7-12-66	0.00	0.00	0.00	0.00	1% sediment
Do.	10-14-66	0.00	0.00	0.00	0.00	
Bedload	10-14-66	0.00	0.00	0.00	0.00	Water portion
Bedload	10-14-66	0.24	0.10	3.2	0.0	Sediment portion
Streamflow	10-19-66	0.00	0.00	0.00	0.00	
Do.	12-02-66	0.00	0.00	0.00	0.00	30% sediment
Do.	12-30-66	0.00	0.00	0.00	0.00	
Bedload	12-30-66	0.00	0.00	0.00	0.00	Water portion
Bedload	12-30-66	0.22	0.1	0.12	0.0	Sediment portion
Streamflow	4-28-67	0.01	0.00	0.00	0.00	Water sample
Bedload	4-28-67	0.00	0.00	0.00	0.00	Water portion
Do.	4-28-67	0.12	0.23	0.12	0.0	Sediment portion

1/ Limit of measurement is 0.01 µg/kg for water and 0.10 µg/kg for sediment.

Table 3.--Analytical results of runoff and washoff samples from draws.

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks 2/
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
Sampler A	5-23-66	68	23	980	1.2	B, 70% sediment
Do.	5-24-66	6.1	0.00	27	0.00	B, 8% sediment
Do.	7-12-66	0.49	0.12	34	0.07	B, 26% sediment
Do.	7-12-66	110	7.4	460	0.32	P
Do.	8-02-66	250	17	1600	0.62	B, 30% sediment
Sampler A	8-02-66	49	18	680	2.7	P
Do.	10-12-66	5.3	3.6	98.0	0.37	B, 1% sediment
Do.	10-12-66	33	6.2	100	0.70	P
Do.	12-29-66	1.6	0.86	6.8	0.09	P
Do.	12-29-66	34	28	330	2.2	B
Sampler A_1	8-02-66	1.2	0.29	7.4	0.37	B, 2% sediment
Do.	8-02-66	100	71	880	6.5	B
Do.	8-02-66	67	73	560	4.2	P
Do.	10-12-66	0.56	0.15	1.3	0.31	B, 1% sediment
Sampler B	5-23-66	2.1	3.0	310	2.5	P
Sampler B	5-24-66	0.14	0.13	0.81	0.12	B, 1% sediment
Do.	7-12-66	0.28	0.17	47	0.28	B, 1% sediment
Do.	7-12-66	0.24	2.9	120	0.21	P
Do.	8-02-66	2.6	1.1	1000	0.73	B, 20% sediment

1/ Limit of measurement is 0.01 µg/kg for water and 0.1 µg/kg for sediment
2/ B denotes bottle sample. P denotes pan sample.

Table 3 contd.--Analytical results of runoff and washoff samples from draws.

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks 2/
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
Sampler B	8-02-66	6.4	2.7	670	1.7	B
Do.	8-02-66	1.8	1.3	210	0.24	P
Do.	10-12-66	2.1	1.7	140	0.18	B, 10% sediment
Do.	10-12-66	6.4	4.7	1300	1.9	P
Do.	12-29-66	5.1	9.5	560	2.2	P
Sampler B	12-29-66	8.0	26	970	6.8	B
Sampler BC	8-02-66	0.36	0.32	120	0.30	B, 1% sediment
Do.	8-02-66	1.0	0.92	100	0.31	B, 25% sediment
Do.	8-02-66	1.5	1.9	120	0.31	P
Do.	8-02-66	0.64	0.60	500	0.12	P
Sampler BC	10-12-66	1.5	1.2	130	0.30	B, 20% sediment
Do.	10-12-66	9.7	11	320	1.5	P
Do.	12-29-66	0.82	1.9	85	0.42	B, 50% sediment
Do.	12-29-66	8.9	7.9	450	1.9	P
Sampler C	5-24-66	0.36	0.38	50	0.07	B, 8% sediment
Sampler C	7-12-66	0.12	0.15	7.2	0.08	B, 8% sediment
Do.	8-02-66	0.52	0.30	110	0.43	B, 20% sediment
Do.	8-02-66	2.2	6.3	560	0.40	B, 15% sediment
Do.	8-02-66	1.3	1.7	600	0.22	P
Do.	8-02-66	2.2	2.2	610	0.33	P

1/ Limit of measurement is 0.01 µg/kg for water and 0.1 µg/kg for sediment
2/ B denotes bottle sample. P denotes pan sample.

Table 3 contd.--Analytical results of runoff and washoff samples from draws.

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks 2/
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
Sampler C	10-12-66	0.14	0.14	2.7	0.04	B, Water portion
Do.	10-12-66	14	10	630	2.1	B, Sediment portion
Do.	10-12-66	3.0	2.0	590	0.68	P
Do.	12-30-66	4.6	4.9	190	1.1	P
Do.	12-30-66	5.3	17	970	4.0	B
Sampler D	7-12-66	0.07	0.05	13	0.03	B, 20% sediment
Do.	8-02-66	0.24	0.25	41	0.07	B, 5% sediment
Do.	8-02-66	18	4.0	400	1.2	B, 40% sediment
Do.	8-02-66	0.96	0.04	100	0.34	B
Do.	8-02-66	0.23	0.14	57	0.05	P
Sampler D	8-02-66	0.12	0.14	53	0.02	P
Do.	10-12-66	0.08	0.12	14	0.03	B, 1% sediment
Do.	10-12-66	0.93	1.2	84	0.29	P
Do.	12-29-66	0.58	0.22	25	0.09	P
Do.	12-29-66	1.3	1.6	80	0.32	B
Sampler D_1	8-02-66	0.14	0.06	7.7	0.07	B, 5% sediment
Do.	8-02-66	0.31	0.42	7.4	0.09	P
Do.	10-12-66	0.10	0.12	1.5	0.03	B, 2% sediment
Do.	10-12-66	0.30	0.36	17	0.06	P
Do.	12-29-66	0.07	0.19	1.8	0.02	B, 1% sediment
Do.	12-29-66	0.18	0.14	2.6	0.09	P

1/ Limit of measurement is 0.01 µg/kg for water and 0.1 µg/kg for sediment
2/ B denotes bottle sample. P denotes pan sample.

Table 4. Total organic chlorine in core samples from test wells A-3, A-4, A-5, B-3, and W-4. Dashed lines in depth columns represent gaps between successive cores.

Core A-3		Core A-4		Core A-5		Core B-3		Core W-4	
Depth (feet)	Chlorine (µg/kg)	Depth (feet) 1/	Chlorine (µg/kg)	Depth (feet) 1/	Chlorine (µg/kg)	Depth (feet) 1/	Chlorine (µg/kg)	Depth (feet)	Chlorine (µg/kg)
3.0-3.5	5.6	0.0-0.5	176	0.0-0.5	18.8	0.0-0.5	208	Surface	3.3
4.5-5.0	1.7	25.5-26.0	124	33.0-33.5	1.4	94.5-95.0	10.1	3.0-3.5	.5
8.0-8.5	1.5	28.0-28.5	14.3	34.0-34.5	2.0	95.0-95.5	.7	7.5-8.0	2.7
9.5-10.0	1.5	41.0-41.5	8.4	87.0-87.5	1.1	95.5-96.0	2/ .0	10.0-10.5	1.6
13.5-14.0	2.5	44.0-44.5	2/ .0	89.0-89.5	3.3			28.5-29.0	2/ .0
14.5-15.0	1.3			98.0-98.5	2/ .0			29.5-30.0	2.4
18.5-19.0	1.1			99.5-100.0	2/ .0			58.0-58.5	2/ .0
19.0-19.5	1.5							58.5-59.0	.9
23.0-23.5	2.3							59.0-59.5	1.0
24.5-25.5	.7								
29.5-30.0	5.8								
30.0-30.5	1.7								

1/ Depth as measured along angle of slant.

2/ Less than 0.5 micrograms per kilogram, if present.

Table 5. Total organic chlorine and pH of core samples from test wells C-2, C-4, C-5, C-5A, and D-4. Dashed lines in depth columns represent gaps between successive cores

Core C-2			Core C-4			Core C-5			Core D-4		
Depth[1] (feet)	pH	Chlorine (µg/kg)	Depth (feet)	pH	Chlorine (µg/kg)	Depth[1] (feet)	pH	Chlorine (µg/kg)	Depth[1] (feet)	pH	Chlorine (µg/kg)
15.0-17.0	4.75	20,000	5.5-6.5	6.15	2.5	0.0-0.5	6.10	2.1	0.0-0.5	5.15	[2]0.0
18.0-19.0	4.35	610,000	7.5-8.0	5.75	1.5	31.0-31.5	5.80	.9	34.5-35.0	5.00	4.5
24.0-26.0	3.90	2,500,000	15.5-16.0	7.60	2.4	33.5-34.0	5.50	1.0	36.5-37.0	7.60	.9
29.0-31.0	3.45	5,700,000	17.0-17.5	6.65	3.0	38.5-39.0		23,800	85.5-86.0	7.95	1.0
34.0-36.0	3.45	6,000,000	27.5-28.0		3.2	40.0-40.5	7.25	152	87.5-88.0		[2]0.0
			29.5-30.0	8.85	2.4	41.0-41.5	7.70	173	98.0-98.5	8.00	2.1
			38.5-39.0	7.50	2.4	Core C-5A			99.5-100.0	7.60	.9
			39.5-40.0	8.50	2.7	47.0-47.5	6.20	3,500,000			
			49.0-49.5		11.0	48.0-48.5	7.60	1,030			
			49.5-50.0	8.85	2.0	49.0-49.5	7.75	84.7			
			69.0-69.5		8.4						
			69.5-70.0		1.4						
			84.0-84.5	8.95	1.7						
			84.5-85.0	8.00	.9						

[1] Depth as measured along angle of slant.

[2] Less than 0.5 micrograms per kilogram, if present.

Table 6.--Analytical results of miscellaneous samples

Sample source	Date sampled	Quantities of organic compounds that elute at the same retention time as the following pesticides (µg/kg) 1/				Remarks
		Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	
			Plant wastes			
Manufacturer	10-05-66	1.2×10^6	4.5×10^6	0.0	0.0	Still bottoms (liquid)
Do	10-05-66	0.0	0.0	2×10^8	3.9×10^4	Heptachlor cake (solid)
			Earth materials			
Clay outcrop		0.0	0.0	0.05	0.0	Offsite
Sand outcrop		0.0	0.0	0.09	0.0	Offsite
Topsoil		8.6	21	1600	2.7	Disposal pits

1/ Limit of measurement is 0.01 µg/kg for water and 0.10 µg/kg for sediment

Table 7.--Observation well data for Pesticide Study - Hardeman County, Tenn.

Well No.	Depth below land surface		Elevation above mean sea level		Casing			Screen		
						Size			Size	
	Drilled (feet)	Finished (feet)	LSD 1/ (feet)	MP 2/ (feet)	Type	Length (feet)	I. D. 3/ (in.)	Type	Length (feet)	I. D. 3/ (in.)
A-1	25	21.8	493.2	495.9	Aluminum	16.5	1.5	Teflon	8	1.5
A-2	13	12.9	481.8	482.9	"	10	2.0	"	4	1.5
B-1	15	14.6	481.7	483.1	"	10	2.0	"	6	1.5
B-2	12.5	12.5	472.6	474.1	"	10	2.0	"	4	1.5
C-1	35	27.0	494.9	493.2	"	20	2.0	"	8	1.5
C-3	13	13.0	480.0	481.2	"	10	2.0	"	5	1.5
D-1	20	16.0	485.4	486.2	"	13.3	2.0	"	6	1.5
W-1	122	118.0	513.4	514.4	Steel	120	2.5	Brass	3	1.5
W-2	38	36.6	501.0	502.4	Aluminum	35	2.5	"	3	2.0
W-3	45	41.8	513.3	514.5	"	40	2.5	"	3	2.0

1/ Land surface datum

2/ Measuring point - usually the top of well casing

3/ Inside diameter

Table 8.--Core hole data for Pesticide study - Hardeman County, Tenn.

Core hole number	Elevation of land surface above mean sea level (feet)	Distance from pit (feet)	Inclination from vertical (degrees)	Total depth (feet)	Depth to water (feet)	Depth of core samples below land surface (feet)
A-3	494	30	0	31	dry	3-5.5, 8-10.5, 13.5-15.5, 18.5-20, 23-26, 29.5-31
A-4	496	21	44	45		0-0.5, 25.5-29, 41-45
A-5	496	20	16	101	92	0-0.5, 33-35, 87-90, 98-100.5
B-3	497	16	12	97	92	0-0.5, 94-97
C-2	498	11	48	37	dry	15-17.5, 18-19.5, 24-26.5, 29-31.5, 34-36.5
C-4	495	20	0	85	dry	5.5-8.5, 15.5-18, 27.5-30.5, 38.5, 40.5, 49.0-50.5, 69-70.5, 84.0-85.5.
C-5	498	25	47	51		0-0.5, 31-35, 38-42, 47-51
C-5(a)	498	25	44	50		47-50
D-4	497	18	15	10	91	0-0.5, 34.5-37.5, 85.5-88.5, 98-100.5
W-4	501	370	0	60		0.-0.5, 3-4, 7.5-11, 28.5-30.5, 58-60

Table 9.--Water levels in observation wells near the Pesticide waste disposal site in Hardeman County, Tenn.

Elevation (in feet) of water surface above mean sea level.

Date	A-1[1/]	A-2[1/]	B-1[1/]	B-2[1/]	C-3[1/]	W-1[2/]	W-2[1/]	W-3[1/]
10-14-66	dry	dry	dry	dry	dry	411.47	466.40	472.84
11- 1-66	"	"	"	"	"	411.39	466.35	472.85
12- 7-66	"	"	"	"	"	408.70	465.30	477.17
12-13-66	"	"	"	"	"	411.23	466.22	481.42
1-26-67	474.34	477.88	471.45	463.95	"	411.08	466.15	472.68
2- 1-67	474.36	478.34	472.58	466.07	471.04	411.06	466.12	472.91
2- 8-67	474.28	477.43	472.26	466.31	dry	410.95	466.01	472.93
2-16-67	474.23	476.63	471.92	466.07	"	410.91	466.06	472.72
2-23-67	474.50	478.78	467.52	465.80	"	410.91	466.10	478.07
3- 1-67	473.12	479.27	--	465.89	"	410.95	466.01	472.77
3- 8-67	473.08	479.45	474.55	470.61	468.52	410.83	465.91	472.95
3-16-67	473.23	479.41	474.82	470.64	468.63	410.79	465.96	472.89
3-23-67	473.39	479.45	475.04	470.70	468.70	410.79	466.01	473.08
3-30-67	473.31	477.88	469.10	468.44	469.90	410.89	466.01	472.98
4- 7-67	--	--	468.84	467.60	469.94	410.83	466.13	472.97
4-13-67	473.18	479.39	474.68	470.57	469.46	410.95	466.03	472.96

1/ Perched water zone

2/ Water-table aquifer

Table 10.--Results of hydrologic analysis of core samples from the Pesticide disposal site, Hardeman County, Tenn.

Laboratory sample number	Depth (feet)	Field number	Location	Specific gravity of solids	Dry unit weight (percent)	Centrifuge moisture equivalent (percent)	Specific retention (percent)	Total porosity (percent)	Specific yield (percent)	Coefficient of permeability (gpd per sq ft)
67TN6	12	A	Hardeman County	2.68	1.69	7.1	15.0	36.9	21.9	3
7	12	B	do	2.69	1.70	12.8	23.1	36.8	13.7	3
8	12	C	do	2.68	1.36	9.8	15.2	49.3	34.1	7
9	12	D	Velsicol Farm	2.67	1.52	4.4	9.9	43.1	33.2	68
10	12	E	do	2.67	1.59	4.3	10.3	40.4	30.1	93
11	12	F	do	2.68	1.67	7.6	15.6	37.7	22.1	13
12	12	G	do	2.67	1.56	7.1	13.8	41.6	27.8	13
13	12	H	do	2.67	1.43	2.7	6.8	46.4	39.6	180
14	10	I	do	2.66	1.52	1.3	4.3	42.8	38.5	160
15	10	J	do	2.66	1.82	10.9	21.8	31.6	9.8	0.4 1/
16	10	K	do	2.66	1.61	8.0	15.6	39.5	23.9	22 1/
17	10	L	do	2.68	1.60	13.9	23.1	40.3	17.2	3
18	10	M	do	2.66	1.51	12.3	19.7	43.2	23.5	57

1/ Repacked sample

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EXHIBIT H

UNITED STATES

DEPARTMENT OF INTERIOR

GEOLOGICAL SURVEY

LEACHATE MIGRATION FROM A [illegible] PESTICIDE WASTE DISPOSAL SITE IN HARDEMAN COUNTY, TENNESSEE

PRELIMINARY
SUBJECT TO REVISION

by

Craig L. Sprinkle

WRI-78-128

WATER RESOURCES INVESTIGATIONS

Prepared in cooperation

with the

Tennessee Department of Public Health

Division of Water Quality Control

1978

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LEACHATE MIGRATION FROM A PESTICIDE WASTE DISPOSAL SITE IN HARDEMAN COUNTY, TENNESSEE

by

Craig L. Sprinkle

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ABSTRACT

Between 1964 and 1972, approximately 300,000 drums (55-gallon steel barrels) of wastes derived from the manufacturing of pesticides were buried on 45 acres of land in northern Hardeman County, Tennessee. Leachates from these wastes are migrating from the disposal site, 1) in surface runoff, 2) through shallow perched water zones, and 3) through the local water-table aquifer. Compounds identified in the leachates included: dieldrin, endrin, chlordene, heptachlor, heptachlor epoxide, pentachlorocyclopentadiene, and hexachlorobicycloheptadiene. The rate of migration of some of the leachate compounds in the water-table aquifer was found to be at least 80 feet per year.

INTRODUCTION

Background Information

During the period October 1964 to June 1972, a 30-acre tract of land in northeastern Hardeman County, Tenn. was used as a disposal site for wastes associated with the manufacturing of pesticides (fig. 1). An estimated 300,000 drums (55-gallon steel barrels) of liquid and solid wastes were buried in shallow trenches covering 45 acres on the site.

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Upon learning that shallow burial of the pesticide manufacturing wastes was occurring, public health officials became concerned about potential health hazards associated with the highly toxic wastes. The officials were especially concerned that the wastes might contaminate the local and contiguous water supplies. Thus, in 1966, the Federal Water Pollution Control Administration (now the U. S. Environmental Protection Agency) asked the U. S. Geological Survey to study the potential contamination effects of waste disposal at the site.

The study by Rima and others (1967) reached the following conclusions:

1. Contaminated surface materials had washed from the site into a nearly stream (Pugh Creek North).
2. Vertical percolation of leachates had contaminated the shallow perched water zone.
3. The water-table aquifer beneath the site would soon become contaminated.
4. Attenuation of the leachates was prominent in both surface and subsurface movement.
5. At the time of the study, no local domestic well was close enough to the disposal pits to be affected by the contaminants.

Figure 1.--Location of study site.

After the 1967 study, the area of the disposal sites was enlarged from approximately 20 acres to 45 acres (fig.2). Burial of wastes also occurred near the Pugh Creek South drainage divide near the southern boundary of the property. These changes plus questions about the extent and direction of migration of the pesticide leachates in the ground-water system caused the Tennessee Department of Public Health, Division of Water Quality Control (TDWQC) and the U.S. Geological Suryey to begin a cooperative study in 1976 to reexamine the site and check on the validity of the conclusions of the 1967 study.

Use of trade names in this publication is for descriptive purposes only and does not constitute endorsement by the U.S. Geological Survey.

Purpose and Scope

The objective of this report is to present additional information on the extent and direction of leachate migration from the pesticide waste disposal site. This report describes 1) the hydrologic setting of the site, 2) the methods used to obtain soil, earth core, and water samples from the site, 3) the results of chemical analysis of those samples, and 4) the inferred extent of contaminant migration from the site. The reports includes suggestions for further study of the site.

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Figure 2.--Enlargement of the disposal area from 1967 to 1972.

Acknowledgements and Cooperation

Collection, analysis, and interpretation of the data were made possible by a cooperative agreement between the U. S. Geological Survey and the Tennessee Department of Public Health, Division of Water Quality Control. Wilton Burnett, formerly with the Tenn. Department of Public Health, aided materially in the planning and initiation of this study; his continuing interest and encouragement during the progress of the study are gratefully acknowledged. The able assistance and advice of D. M. (Mike) Robinson and other personnel with the Division of Water Quality Control were instrumental in the completion of this study and are greatly appreciated.

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SITE DESCRIPTION

Topography

The disposal site is located within the drainage basin of Pugh Creek North, a tributary to Clover Creek. The drainage divide for Pugh Creek North lies on the western side of the site, thus surface drainage flows from the site to the east and northeast.

Topographically, the disposal site is situated on the upland remnant of a naturally dissected, fluvial terrace. The burial trenches are located on long, narrow ridges which are separated from the flood plain of Pugh Creek North by fairly steep-sided gullies and ravines. The maximum relief on site is about 110 feet.

Geology

Beneath the disposal site lie nearly horizontal beds of unconsolidated sand, silt, and clay. These deposits are non-homogeneous and consist primarily of sand, with thin interbedded silt and clay lenses. Below a depth of about 115 feet, silt and clay predominate, with the sand occurring as lenses or beds. The following description of the geology and lithology of the burial ground was summarized from Russell and Parks (1975) and Parks (1974 and 1977). Surficial geology is shown in figure 3.

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Fluvial deposits of the Quaternary and Tertiary periods cover much of the uplands of the site. Composed of sand and silt, the fluvial deposits range in thickness from 0 to 35 feet, and are found mostly above 460 feet altitude. The fluvial deposits are remnants of ancient alluvium laid down by present streams or an earlier drainage system. The silt that caps the fluvial deposits may be wind-blown loess.

Below the fluvial deposits lie sediments of the Claiborne Formation of Tertiary age. The Claiborne Formation consists primarily of quartz sand containing a few thin clay-rich lenses. The Claiborne Formation crops out between approximately 410 and 460 feet altitude at the site. The maximum thickness at the site is about 80 feet. A thin, iron oxide-cemented sandstone locally marks the erosional contact between the Claiborne Formation and the younger fluvial deposits.

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Beneath the Claiborne Formation lies the older Wilcox Formation, also of Tertiary age. The Wilcox is composed of a heterogeneous mixture of sand, silt, and clay, which are variously interbedded and interlensed. The Wilcox outcrops about 0.6 mile northeast of the site and may be as much as 200 feet thick at the site. The contact between the Wilcox and Claiborne Formations is an erosional surface having considerable local relief. At the disposal site the contact is usually marked by a thin gravel or very coarse sand unit at the base of the Claiborne Formation.

A cross-section of part of the disposal site appears in Figure 6b.

Hydrology

There are three ground-water zones beneath the site which are pertinent to this study. A perched water zone is present seasonally when water accumulates above one of the silt-clay lenses in the sand of the Claiborne Formation. The perched water zone develops because the downward percolation of water is slowed by the low permeability of the silt-clay lens. Fluids in the perched water zone tend to migrate laterally to the margins of the retarding lens, although some downward migration (leakage) of fluids through the lens does occur.

About 90-100 feet beneath the land surface, a water-table aquifer is in sand near the base of the Claiborne Formation or in the top of the Wilcox Formation. This aquifer is recharged by leakage through the perched water zone and by direct infiltration of rainfall in areas where the perched water zone is absent. Discharge from the water-table aquifer occurs at seeps and springs where the land surface intersects the water table. Most domestic wells in the vicinity of the disposal site obtain water from this aquifer.

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An artesian aquifer occurs deeper in the Vidor Formation at a depth of about 230 feet at the site. Between the water-table aquifer and the artesian aquifer are approximately 100 feet of silt and clay that acts as an upper confining layer of the artesian aquifer. Although water levels in the artesian aquifer are lower than those in the water-table aquifer, the intervening clay-rich layer retards recharge of the artesian aquifer from the water-table aquifer. Most of the recharge to the artesian aquifer is believed to come from the outcrop area of the Wilcox Formation east of the site (Rima and others, 1967, p. 9). Discharge and pumpage from this aquifer occur primarily in the outcrop area, although some domestic wells in the vicinity of the disposal site obtain water from the lower part of the Wilcox.

Burial of the Wastes

According to Rima and others (1967, p. 9-10), the buried wastes consisted of both liquids and solids which were transported to the site in 55-gallon steel drums and smaller fiber cartons. The drums and cartons were dumped into disposal trenches and compacted, a process which ruptured many of the containers and released their contents. After a trench was filled, a minimum of 3 feet of earth cover was compacted over the wastes.

In the years since 1967, eroded cover material was replace intermittently. Attempts to reduce erosion of the earth cover included sowing the disposal area with grasses, and re-grading some of the steeper slopes.

STUDY METHODOLOGY AND RESULTS

Plan of Study

The study was divided into five work elements:

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1. Determine the geologic setting of the site and locate points of ground-water use in the vicinity of the site.
2. Qualitatively assess the overland migration of the wastes, especially into Pugh Creek South.
3. Determine the extent of contamination in the perched water zone and the water-table aquifer.
4. Examine the possibility of migration of the leachates in a direction contrary to prevailing ground-water gradients.
5. Establish a few monitoring wells which could be used to detect future movement of leachates from the site.

These five phases of the study were accomplished in the period April 1976 to February 1978 by the Geological Survey and personnel from the Jackson, Tenn. office of TDWQC.

Geologic Mapping and Domestic Well Locations

The manuscript for a geologic map of the Teague, Tennessee 7-1/2-minute quadrangle was completed in the summer of 1976 (Parks, 1977). This map will be published by the Tennessee Division of Geology. Parts of the Teague (Parks, 1977) and Bolivar East (Parks, 1974) geologic maps were combined in Figure 3 to show the surficial geology in the vicinity of the disposal site.

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Local Water Well Information was obtained from the files of the Tennessee Department of Conservation, Division of Water Resources (TDWR). Collection of drillers records and preparation of location maps of domestic wells in Hardeman County were made by TDWR personnel over a period of years, and were not part of this investigation. Well locations and identifying numbers assigned by TDWR are shown in Figure 4. Additional data for the wells shown in Figure 4 are given in Table 4.

As part of this project, three water-level observation wells were drilled at the locations shown on Figure 4. Available water-level measurements from these wells are given in Table 1.

The water level observation wells were installed by dry drilling to depth with 4-inch inside diameter (I.D.) hollow-stem auger. Once the desired depth was reached, the stem was filled with clean water obtained from a well about 2 miles north of the site. The 2 inch I.D. polyvinyl chloride (PVC) well casing with 10 feet of slotted section at the bottom was lowered into the auger stem. The PVC casing was pushed through the knock-out plug (at the bottom of the auger stem) into the underlying sands until the casing was firmly held in place. The auger stems were then retrieved, the annular space was backfilled with previous auger returns, and the casing was cemented in the upper 5 feet. A PVC cap was slotted and screwed onto the top of the casing. No slug testing or further development of the well was performed.

Sampling Surface Runoff

The techniques for sampling surface runoff described by Rima and others((1967, p. 11) were used to sample a tributary to Pugh Creek South. At sites SR-1 and SR-2 (fig. 5), a clean, galvanized steel pan was used to funnel

Figure 5 Near Here

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overland runoff (water and sediments) into a receiving glass bottle. The filled sample bottles were retrieved within hours after storm events by personnel from the Jackson, Tenn. office of the TDWQC. Samples were sealed with Teflon-lined lids and were kept chilled until they were analyzed.

Bottom sediments (locations P-1 through P-4, fig. 5) from four impoundments on the eastern margin of the site were obtained by TDWQC personnel. The bottom sediments were collected and transferred to clean wide-mouth jars in the field. The samples were sealed with Teflon-lined lids and were kept frozen until they were analyzed.

In order to qualitatively assess the long-term presence of pesticide residues in the impoundments, small vertebrate organisms (tadpoles and salamanders) were collected by the TDWQC from one of the ponds (site B-1, fig. 5). The intent of the TDWQC was to obtain bio-assay data on pesticide residues in the flesh of the organisms (D. M. (Mike) Robinson, oral commun., 1977). The results of the bio-assays were not available to include in this report.

Sampling the Ground Water

The report by Rima and others (1967) indicated an easterly to north-easterly direction of ground water flow beneath the disposal site. In order to examine the extent of leachate migration in this direction, two water sampling wells were placed on the eastern side of the disposal site. Well WS-2 (fig. 5) was cased with 2-inch I.D. aluminum conduit which was slotted in the bottom 10 feet. The slotted section was set in the interval 42 to 52 feet to allow withdrawal of water from the water-table aquifer.

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Well WS-3 (fig. 5) was also cased with 2-inch I.D. aluminum conduit and slotted in the bottom 4.9 feet. This well was intended to obtain water from the perched water zone. The well was drilled and completed in what was presumed to be the perched water zone, but it has been dry since emplacement in 1976.

To compensate for the inability to obtain water samples from well WS-3, four small-diameter soil samples (HC-1 through HC-4, fig. 5) were obtained from perched-water seeps along the northeastern margin of the disposal site. A fifth small diameter core (HC-5, fig. 5) was obtained from slopes of the western margin of the site.

The five soil cores were obtained by hand augering horizontally into a bankside to a depth of 2 feet. The hole was then reamed out and cleaned of loose soil. The auger was then withdrawn and a soil sampling tube 1-foot long was mounted on the end. The entire auger was then washed and rinsed with acetone. The auger was reinserted into the hole and the sample tube was drilled in until full.

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The soil samples were transferred by clean spatula to wide-mouth, clean glass jars. The sample jars were sealed with Teflon-lined lids and the samples were kept frozen until they were analyzed.

The possibility of underground contaminant migration toward the Pugh Creek South drainage basin was not investigated during the 1967 study because wastes had not been buried near the drainage divide of the Pugh Creek South drainage basin. Under the current project, water sampling well WS-1 (fig. 5) was drilled to test for the presence of waste leachates in the water-table aquifer south of the site.

Well WS-1 was cased with 2-inch I.D. aluminum conduit which was slotted in the bottom 10 feet. The slotted casing was set at a depth of 107 - 117 feet which allows withdrawal from the middle and upper part of the water-table aquifer.

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The water sampling wells were drilled dry with washed and acetone-rinsed hollow-stem auger. Once the desired depth was reached, washed and acetone-rinsed aluminum well casing was lowered into the dry stem. The aluminum casing was pushed through the knock-out plug into the underlying sand until the casing was firmly seated in the aquifer. After the auger stem was withdrawn, the annular space was backfilled with sand brought to the well from a quarry about 3½ miles east of the site. The casing was cemented in the top 5 - 10 feet to hold it firmly at the surface. A slotted galvanized cap was screwed onto the top of the casing. No development of the well was performed, other than the pumping prior to obtaining water samples for chemical analysis.

Water samples for chemical analysis were obtained from wells WS-1 and WS-2 using a small, gas-operated (compressed nitrogen or compressed air) pump. The pump and all hoses were washed inside and out with detergent and rinsed with distilled water and acetone before obtaining samples. The pump was operated at approximately 2 gallons per minute for 30 minutes before water samples were collected in clean narrow-mouth glass bottles. The sample containers were sealed with Teflon-lined lids and kept chilled until they were analyzed.

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Testing for Heavy Liquid Migration

During the 1967 study, examination of the waste mixtures revealed that a significant amount of the liquid portion had a density greater than water (D. R. Rima, oral commun., 1975). This greater density combined with the poor miscibility of the liquid wastes in water created concern that the wastes might sink to the top of the upper confining bed of the Wilcox Formation (base of the water-table aquifer) and flow under gravity gradient in directions contrary to prevailing ground-water gradients.

In theory, heavier-than-water, immiscible liquids will seek the low areas at the base of the water-table aquifer. Gravity flow of the liquids would, in theory, encourage lateral migration across the top of the upper confining bed (base of the water-table aquifer) in the direction of the regional dip of the bed. The top of the Wilcox Formation dips approximately 20 feet/mile toward the northwest (W. S. Parks, written commun., 1975). Thus, the area tested for potential migration of the heavy liquids was northwest of the oldest burial pits.

Preparatory to obtaining samples of sediments at the top of the upper confining bed, a series of auger holes were drilled on the northwest side of the disposal site (fig. 6). These auger holes were drilled to determine both the depth to the upper confining bed and the nature of the sediments in the water-table aquifer and to identify sites for additional sampling. Typical lithologies and location of the top of the upper confining bed (base at the water-table aquifer) shown in Figure 6b are based on latter drilling.

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Using the information obtained from auger drilling, four holes (C-1 through C-4, fig. 5) were made with a mud-rotary drill in order to sample the top of the upper confining bed. Four core samples were obtained from the top of the upper confining bed using a Denison core barrel. A fifth core sample was obtained from hole number C-1 (fig. 5) at depths 85 feet to 90 feet because a strong organic chemical odor was detected in this interval during previous auger drilling.

A Denison core barrel is normally used to obtain physically undisturbed core samples. An inner barrel assembly, which retains the earth core, has a metal cutting edge which extends below the bottom of the outer barrel. This cutting edge protects the unconsolidated earth materials from washing or compaction by the drilling mud, which is circulated through the annular space between the inner core-retaining barrel and the outer cutting-shoe assembly. During sampling of the upper confining bed in this study, a 5-feet long, 2.75-inch I.D. brass barrel-insert was placed inside the core-retaining barrel.

The Denison barrel has the advantage of obtaining large diameter cores of unconsolidated sediments. It has the disadvantage of being exposed to the circulating mud until coring begins, so that contaminants in the drilling mud could be trasferred to the samples retained in the brass insert.

After the Denison barrel had penetrated the proper zone, the entire drill string and core barrel were retrieved from the hole. The brass insert with core inside was removed from the barrel and sealed at each end with tight plastic caps. The ends were then wrapped with paper tape and dipped in melted beeswax in an effort to keep the core samples air tight. Samples of the drilling mud were obtained during core sampling to determine if contaminants were carried down the hole by the circulation of the mud.

An unfortunate delay occurred before the core samples and drilling muds could be analyzed for leachates. The core samples were stored in their brass barrels for seven months; during the same period, the mud samples were stored in 1-quart glass bottles with Teflon-lined lids. In March 1977, the brass barrels were cut open and core material sub-samples were spooned into clean glass jars. The core sub-samples and the mud samples were shipped to the Geological Survey Laboratory and held frozen until August 1977 when chemical analyses were performed.

PRELIMINARY
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Chemical Analysis of Samples

During the project a total of 25 sediment and 7 water samples were sent to the Geological Survey - Water resources Division's Central Laboratory in Arvada, Colorado. The samples were prepared and extracted using the methods described by Goerlitz and Brown (1972). Sediment-water mixtures from the overland runoff samples were filtered to separately analyze the water and sediment phases.

A halogen sensitive Hall detector was used in conjunction with gas chromatography to screen the sample extracts for significant halogen content. Those samples which exhibited the presence of halogens greater than 5 micrograms per kilogram (ug/kg) were split, with one half being used for total organic chlorine analysis by the methods described by Rima and others (1967, p. 16-18). The remaining half was analyzed for specific pesticide compounds using the methods of Goerlitz and Brown (1972). Several samples containing sufficiently high concentrations of unknown halogen-containing compounds were scanned by gas chromatography-mass spectrometry (GC-MS) to attempt further specific compound identification.

PRELIMINARY
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The results of halogen screening and total organic chlorine determinations are given in Table 2. The sample locations listed in Table 2

Table 2 near here

refer to figure 5. Specific compounds that were identified by gas chromatography and/or gas chromatography-mass spectrometry are given in Table 3. Sampling sites are shown on figure 5.

Table 3 near here

DISCUSSION OF RESULTS

The concentration of pesticide waste leachates measured in the sediment from the ponds and in the soil samples does not clearly indicate the expected concentration of the chemicals in the water phase. There can be as little as 0.01 µg/L of a pesticide residue in the water phase when the associated sediment has as much as 100,000 times that value (1,000 µg/kg) (Federal Working Group on Pest Management, 1974, p. IV-1). Studies by Goerlitz and Law (1974) point out that the relative distribution factor of pesticides between water and associated sediment is at least as dependent on the types of organic matter and bioactivitity in the sediments as it is dependent on the size fraction or mineralogy of sediments. Prediction of pesticide concentrations in surface or ground water near the site would be questionable at this time, even though the leachate concentrations in the sediments are known.

PRELIMINARY
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Geologic Data

The geologic information obtained from on-site drilling and preparation of the geologic map of the Teague quadrangle showed that the types and areal distribution of the unconsolidated depositis below the site are not as uniform as originally interpreted. The thin silty and clayey sand lenses of the Claiborne Formation are variable in both thickness and areal extent (fig. 6b). This non-homogeneity means more than one perched water table similar to that described by Rima and others (1967, p. 8) may occur at different depths in different areas of the disposal site. There present, deeper perched water zones could discharge contaminants in seeps further downslope from the contact between the fluvial deposits and the Claiborne Formation shown on Figure 3.

Several auger holes revealed only a thin, silty sand layer separating the lowest quarts sand of the Claiborne and similar quartz sand in the upper Wilcox. Form study of the records of well drilling near the site (see Appendix), the water-table aquifer is made up of sand in both the lower Claiborne and the upper Wilcox. It appears that a direct hydraulic connection exists between the lowest sand of the Claiborne and the uppermost sand of the Wilcox. In areas where this connection is precent, it is possible for contaminants transported by ground-water flow to enter the uppermost Wilcox.

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About 100 feet of clay-rich sediments in the Wilcox separate the water-table aquifer from the artesian aquifer beneath the site. This clay layer could act as a barrier to downward migration of leachates because the layer not only has a very low hydraulic conductivity, but there is also strong sorption of the leachate compounds on clay particles (Rima and others, 1967, p. 4). Thus, the possibility of contaminants migrating through the clay-rich sediments into the artesian aquifer below the site appears extremely remote.

The bottom of the water-table aquifer is a highly irregular surface. Beneath the site this surface varies from about 395 feet altitude to less than 360 feet altitude (fig. 6b). The irregularity of the surface makes it difficult to identify and sample the potential flow paths of heavier-than-water liquids. The data from the few auger holes and core holes drilled during this study are insufficient to determine whether this hypothetical flow mechanism is operating or to predict migration patterns of "heavy" leachates. Much more extensive testing would be required to determine whether or not heavier-than-water liquids are migrating from the site by gravity flow contrary to water-table gradients.

SUBJECT TO REVISION

Contaminant Migration on the Surface

The study by Rima and others (1967) found overland migration of contaminants into the tributaries of Pugh Creek North. Samples of bedload from Pugh Creek North collected in 1967 evidenced contamination as far as 1.5 miles downstream from the site (Rima and others, 1967, p. 1). Sometime after the 1967 report was released, several impoundments were built on site, presumably to trap sediment washed from the burial areas. Sediment samples collected from four of the impoundments (P1, P2, P3, and P4 on fig. 5) in 1977 were found to be contaminated (Tables 2 and 3). Other evidence of continuing surface migration of contaminants is the 8 milligrams per kilogram of waste residues found in sediment samples collected from gullies on-site in May 1975 (D. R. Rima, written commun., 1975).

PRELIMINARY
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A small tributary to Pugh Creek South was sampled twice to test for overland migration of contaminants during 1977. The results of the March sampling indicated some halogenated organic materials attached to the sediments at SR-1 and SR-2 (fig. 5 and Table 2). Attempts to identify the specific halogenated compounds by GC-MS were not successful owing to other interfering organic compounds (R. McAvoy, written commun., 1978). The sample from SR-1 collected in September of 1977 indicated no halogenated organic compounds.

Although one pair of samples from Pugh Creek South gave positive results for organic halogens, the source of the contaiminants ~~in~~ is uncertain. Whether the disposal site is the sole source of the unidentified contaminants cannot be determined with the available data, since similar compounds may be derived from croplands upstream from SR-1 and SR-2. More intensive sampling and identification of specific contaminant compounds are needed before the magnitude and extent of surface migration of leachates from the disposal site into Pugh Creek South can be determined.

The available data indicate that surface contamination still exists in some areas of the site. Since sediments from the inpoundments on the margins of the site occasionally spill into Pugh Creek North, it appears likely that there will be some contaminants in the creek. More soil samples and stream sediment samples need to be analyzed before the full extent of surface contamination on and around the site can be determined.

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Contaminant Migration in the Subsurface

The migration of contaminants in the subsurface is believed to follow the pattern shown in Figure 7.

Figure 7 Near Here

Conceptually, leachates percolate downward under the influence of gravity until they reach the upper-most perched water zone. Within this zone the leachates can migrate laterally to the margins of the perching layer. Some contaminants will continue to migrate downward through the perched zone, enter underlying beds, and finally reach the water-table aquifer. Thereafter, the leachates would migrate with ground-water flow in directions determined by local hydraulic gradients.

PRELIMINARY SUBJECT TO REVISION

The presence of contaminants in the shallow perched water table was re-confirmed during this study. Soil cores from discharge points of the shallow perched water zone on the northeastern portion of the site were found to be contaminated (Table 2). In addition, during auger and core drilling operations, a strong organic chemical odor was observed on sediments from the shallow perched water zone in holes C-1 and C-2 (fig. 5). Based on these results and observations, an inferred contamination extent map of the shallow perched water zone is shown in Figure 8.

Figure 8 Near Here

Deeper perched zones were also found during auger drilling. During auger and core drilling operations at C-1 (fig. 5), a strong odor was detected from a deep perched water zone, but chemical analysis of core C-1A failed to show the presence of contaminants (Table 2). Although contamination of deeper perched water zones is depicted in Figure 7, the data available are insufficient to draw a map of the extent of an inferred contamination of any deeper perched-water zones.

The presence of waste leachates in the water-table aquifer was confirmed by the chemical analysis of water samples from WS-2 (fig. 5 and table 2). However, the levels reported for total organic chlorine were low and individual organic compounds were not identified.

The contaminants found in WS-2 are believed to have been transported to the well in the water-table aquifer because no perched-water zone was found while drilling the well. A perched-water zone was found during exploratory drilling upslope from WS-2, and it is possible that contaminants were transported by flow in perched water zones before reaching the water table and WS-2 (see fig.

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The presence of contaminants in well WS-2 sets a lower limit on the rate of migration of some of the leachates through the water-table aquifer. Assuming the leachates migrated from the oldest pits along the flow lines reported by Rima and others (1967, p. 24), a distance of about 800 feet was traveled by the contaminants to well WS-2. If the leachates reached the water-table aquifer shortly after the 1966-67 study, the minimum rate of migration would be about 80 feet per year in order for the contaminants to reach well WS-2 in 1977. Thus, the minimum rate of migration of some leachate constituents in the water-table aquifer must range between about 80 feet per year and about 300 feet per year (the rate of water movement reported by Rima and others, 1967, p. 23). However, no data are available to indicate the maximum rate of leachate migration, which could be greater than the rate of water movement due to chemical concentration gradients.

Assuming the leachates migrated along the flow lines shown in fig. 9 then Rima and others (1967, p. 23-24) indicated that the direction of ground-water movement in the water-table aquifer beneath the disposal site was toward the east and northeast. However, measurements of water levels in several observation wells in February 1978 (fig. 9) indicate that ground-water moves toward the north and northwest. Both

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Figure 9 Near Here

interpretations of the ground-water flow system are based on a limited number of water-level observations, and both are imprecise. The 1978 data are more numerous and encompass a larger area than the 1967 data, and are considered to be the more accurate representation of the local pattern of ground-water movement.

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The net effect of these local changes would be an overall increase in the amount of ground-water recharge entering the water-table aquifer beneath the disposal site. This, in turn, would tend to raise the position of the water table beneath the site (develop a ground-water mound) and perhaps locally change the direction of ground-water flow. Effects similar to those hypothesized at this site have been observed in other areas. Studies in Illinois by Hughes and others (1971) indicated that ground-water mounds often develop beneath solid-waste (refuse) landfills. Moreover, studies of the radioactive waste burial grounds at the Oak Ridge National Laboratory by Webster (U.S. Geological Survey, oral commun., 1978) indicate that the position of the water table beneath one burial ground had been raised several feet due to the increased rate of infiltration through disturbed surface soils.

Whether or not a change in the direction of ground-water movement has actually occurred, the flow system (fig. 9) and the locations of the disposal trenches (fig. 2) can be used to show the inferred areal extent of contamination of the water-table aquifer (fig. 10). The smaller

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Figure 10 near here

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contaminated area in Figure 10 is based on the minimum contaminant migration rate of 80 feet per year; the larger area is based on a migration rate of 300 feet per year, as discussed previously. The maximum possible extent of contamination cannot be determined at this time, because the maximum rate of migration is unknown.

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The only chemical evidence supplied by this study that contaminant migration has occurred toward the northwest is the trace amounts of waste related chemicals found in the drilling muds of C-1 and C-3, and the core samples from C-4 (tables 2 and 3). Considering the delay between sample collection and chemical analysis, these results are probably not indicative of the original levels of contaminants in the cores. In fact, during both the augering phase and the drilling phase of obtaining core samples at C-1, an extremely strong organic chemical odor was detected, yet the chemical analysis showed no halogenated compounds.

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Several wells used for domestic water supplies are north and northwest of the disposal tract and are in the inferred path of the leachate as it moves under natural gradients. Withdrawals from these wells could introduce slight distortions to the contamination patterns shown in Figure 10. The magnitude of these distortions cannot be estimated with the data available. Pumping test data are needed to determine more accurately the hydraulic characteristics of the water-table aquifer. Additional observation well data are also needed to define the water-table gradients between the disposal site and the domestic water wells.

No contaminant migration toward the south of the site is shown in in Figure 10 for two reasons: 1) the water-table gradients indicate ground-water flow is in the opposite direction, and 2) two water samples from WS-1 (table 2) showed no contaminants present. Periodic water-level observations from WL-1 and water sample analyses from WS-1 would provide additional information on changes in the water-table aquifer in this area.

The study was planned on the basis of predictions of contaminant migration from the disposal site towards the east and northeast (Rima and others, 1967, p. 22-24). For this reason, except for the Dennison core samples, no samples were collected from the water-table aquifer on the north or northwestern margins of the site. Based on the observed water-table gradients, however, it appears that wells for measuring water levels and for obtaining chemical samples of the water-table aquifer are needed in these areas.

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Whether or not heavier-than-water liquids are migrating away from the site could not be determined with any degree of certainty by this study. The potential of this mechanism to transport contaminants toward the northwest from the disposal site is moot since observed water-table gradients seem to favor migration of contaminants toward the north or northwest in normal ground-water flow.

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Table 1.--Water levels in observation wells tapping the water-table aquifer near the pesticide waste disposal site, Hardeman County, Tennessee

Altitude of water surface in feet

Date	WL-1	WL-2	WL-3	W-1[1]	WS-2[2]
6 Apr 76	421.1	408.3	401.3	-	-
28 May 76	422.6	409.8	403.1	-	-
22 July 76	422.2	409.4	403.3	-	-
31 Aug 76	422.3	408.7	402.7	-	-
19 Nov 76	421.9	408.9	402.3	416.9	-
1 June 77	420.4	408.0	401.6	415.8	-
14 Feb 78	418.7	406.8	400.7	414.3	411.8

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1/Well reported by Rima and others (1967).

2/Well also used to obtain chemical samples (see Figure 5).

Table 2.--Results of chemical analysis of samples from pesticide waste disposal site, Hardeman County, Tenn.

Sample location	Date collected	Sample type	Hall halogen detector response	Total organic chlorine
B-1	Aug 77	Small vertebrates	(1)	-
C-1A	13 July 76	Earth core from 25.9 to 27.4 m zone	(2) N.R.	-
C-1A	13 July 76	Drilling mud from C-1A core sampling	(3) Trace	-
C-1B	13 July 76	Earth core from transition zone	N.R.	-
C-1B	13 July 76	Drilling mud from C-1B core sampling	Trace	-
C-2	8 July 76	Earth core from transition zone	N.R.	-
C-2	8 July 76	Drilling mud from C-2 core sampling	N.R.	-
C-3	25 July 76	Earth core from transition zone	N.R.	-
C-3	25 July 76	Drilling mud from C-3 core sampling	Trace	-
C-4	27 July 76	Earth core from transition zone	Trace	-
C-4	27 July 76	Drilling mud from C-4 core sampling	(sample broken in transit)	-

(1) Results of bio-assay not received from TDWQC.
(2) N.R. - no response.
(3) Trace - response between 0 and 5 ~~µg/kg~~ microgram per kilogram (µg/kg) estimated relative to peak heights of a 1 nanogram per microliter (ng/µl) Aldrin standard.

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Table 2.--(Cont'd).--Results of chemical analysis of samples from pesticide waste disposal site, Hardeman County, Tenn.

Sample location	Date collected	Sample type	Hall halogen detector response	Total organic chlorine
HC-1	18 Nov 76	Soil sampled by hand auger	(4) Positive	540 µg/kg
HC-2	18 Nov 76	Soil sampled by hand auger	N.R.	-
HC-3	18 Nov 76	Soil sampled by hand auger	Positive	500 µg/kg
HC-4	18 Nov 76	Soil sampled by hand auger	N.R.	-
HC-5	18 Nov 76	Soil sampled by hand auger	N.R.	-
P-1	30 Aug 77	Pond sediment	Positive	-
P-2	30 Aug 77	Pond sediment	Positive	-
P-3	30 Aug 77	Pond sediment	Positive	-
P-4	30 Aug 77	Pond sediment	Trace	-
SR-1	4 Mar 77	Surface runoff (water phase) (sediment phase)	(sample broken in lab) Positive	- 7.6 µg/kg
SR-1	9 Sep 77	Surface runoff (water and sediment extraction)	N.R.	-
SR-2	4 Mar 77	Surface runoff (water phase) (sediment phase)	N.R. Positive	10 µg/kg
WS-1	1 Jun 77	Well water sample	N.R.	-
WS-1	1 Jun 77	Duplicate sample	N.R.	-
WS-2	1 Jun 77	Well water sample	Positive	6.8, [illegible] µg/L
WS-2	1 Jun 77	Duplicate sample	Positive	11, [illegible] µg/L

(4) Positive - response greater than 5 µg/kg estimated relative to peak heights of a ng/µL Aldrin standard.
(5) Duplicate analyses made on water sample.

SERVICE REVISION

SUMMARY AND FUTURE STUDIES

Between 1964 and 1972 approximately 300,000 drums of liquid and solid wastes associated with the manufacture of pesticides were buried in northern Hardeman County, Tennessee. The disposal site was initially studied in 1967 with the following results:

1. Contaminated surface minerals had washed from the site into a nearby stream (Pugh Creek North).
2. Vertical percolation of leachates had contaminated the shallow perched water zone.
3. The water-table aquifer beneath the site would soon become contaminated.
4. Attenuation of the leachates was prominent in both surface and subsurface movement.
5. At the time of the study, no local domestic well was close enough to the disposal pits to be affected by contaminents.

A re-investigation of the site began in 1976 to examine the possibility of surface or subsurface migration of contaminants into the Pugh Creek South drainage basin. Chemical analysis of stream sediments and ground-water samples indicated that leachates from the site were migrating into Pugh Creek South basin in 1977.

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The current study produced the following additional results:

1) Chemical analysis of sediments from impoundments on the margins of the site indicated continued overland migration of contaminants.
2) Chemical analysis of soils receiving seepage from the perched water zone indicate contamination was still present in that zone in 1976.
3) Chemical analysis of water from a well (WS-2) penetrating the water-table aquifer indicated that the aquifer is contaminated, as was predicted by the 1967 study. In addition, the distance of the well from the disposal pits establishes a minimum migration rate of 80 feet per year for some leachate compounds transported in the water-table zone.
4) Additional data points indicate water moves to N & NW instead of E & NE although increased recharge may have modified local gradient slightly. Leachate migration in the water-table aquifer should also be toward the north or northwest.
5) Additional drilling around the site and preparation of a geologic map of the area revealed the presence of thick sand lenses in the upper Wilcox Formation. These sand lenses are in hydraulic connection with the water-table aquifer and probably have become contaminated leachates from the disposal site.

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In consideration of the results of this study, future monitoring of the site should attempt to provide data on the following aspects of contaminant migration:

1) Contaminated sediments are temporarily trapped on-site by impoundments in the drainways. Periodic chemical analysis of sediment samples from Pugh Creek North and Pugh Creek South would provide data on transport of contaminants into these streams.
2) The water-table aquifer to the south of the site did not show evidence of contamination in 1977. Periodic water-level observations and water samples from wells south of the site would provide data on changes in the water-table aquifer in that area.
3) The presence of contaminants in and the flow pattern of the water-table aquifer indicates a need for monitoring wells on the northwestern and northern margins of the site.
4) Natural gradient will cause leachates to move towards domestic wells along the Toone-Teague road north and northwest of the site; more aquifer test data and water-level data are needed to define the effects of local water use on the flow system.
5) Hydrologic data obtained from site monitoring could be utilized to develop a model of ground-water flow in the vicinity of the site. This model would be helpful in predicting future contaminant migration patterns; furthermore, a model would predict the impact of alternate ground-water management plans on contaminant migration.

PRELIMINARY
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Future Studies

There are other questions raised by the studies of this site whose answers might have transfer value to other waste burial sites:

1) Which chemicals are degraded or transformed in the ground-water system?

   What are the degradation or transformation products? What processes are active in degrading or transforming these compounds?

2) What are the rates of chemical breakdown on the surface?

   How far would sediments travel before becoming decontaminated?

3) What are the sorptive characteristics of the contaminants on sediments and how does sorption effect the flow rates of different compounds in the ground-water system? What concentrations of chemicals can be expected in the ground water when in contact with contaminated sediments?

4) If a ground-water mound exists below the site, how long will it remain, and how will it change?

5) What are the long-term biological effects of the leachates in the ponds and surface streams? Are biological processes active in decontaminating the sediments?

PRELIMINARY
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Table 3.--Specific compounds identified in samples from pesticide waste disposal site, Hardeman County, Tenn.

Sample Location	Date collected	Compound(s) Identified	Quantity
C-1A (mud)	13 July 76	heptachlor	0.1 µg/kg
C-1B (mud)	13 July 76	heptachlor	0.2 µg/kg
C-3 (mud)	25 July 76	dieldrin	0.4 µg/kg
		endrin	0.4 µg/kg
		heptachlor	0.4 µg/kg
C-4 (core)	27 July 76	heptachlor	0.1 µg/kg
HC-1	18 Nov 76	dieldrin	46 µg/kg
		endrin	29 µg/kg
		heptachlor	35 µg/kg
		heptachlor epoxide	1.0 µg/kg
		pentachlorocyclo-pentadiene	-
		hexachlorobicyclo-heptadiene	-
HC-3	18 Nov 76	dieldrin	5.4 µg/kg
		endrin	14 µg/kg
		heptachlor	33 µg/kg
		heptachlor epoxide	9.6 µg/kg
P-1	30 Aug 77	chlordene	460 µg/kg
		dieldrin	10 µg/kg
		endrin	1.0 µg/kg
		heptachlor epoxide	4.2 µg/kg
P-2	30 Aug 77	chlordene	23 µg/kg
		dieldrin	1.3 µg/kg
		endrin	0.3 µg/kg
		heptachlor	0.9 µg/kg
P-4	30 Aug 77	chlordene	2 µg/kg

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Table 4. -- Records of domestic wells near the pesticide waste disposal site, Hardeman County, Tenn.

Well Number	Land Surface Elevation, ft. abv. msl	Well Depth, ft.	Depth to Top Well Screen, ft.	Formation Source (1)
10	400	48	41	Tw
13	515	110	103	Tw
16	385	46	40	Tw
61	525	126	120	Tw
103	480	156	151	Tw
108	550	140	136	Tw
132	545	140	136	Tw
161	510	225	221	Tw
185	565	150	146	Tw
198	515	128	124	Tw
215	475	413	405	T_{cl} (?)
224	495	116	112	Tw
226	470	98	94	Tw
258	490	116	112	Tw
262	485	96	92	Tw
266	470	45	41	T_c
268	460	131	111	Tw
286	395	219	211	T_p (?)
292	485	164	157	Tw
303	570	160	— (2)	Tw
311	510	145	138	Tw
316	380	63	59	Tw
326	520	155	150	Tw

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Table 4. --(Cont'd).-- Records of domestic wells near the pesticide waste disposal site, Hardeman County, Tenn.

Well Number	Land Surface Elevation, ft. abv. msl	Well Depth, ft.	Depth to Top Well Screen, ft.	Formation Source (1)
329	540	145	140	Tw
336	500	106	102	Tw
394	520	125	—(2)	Tw
409	500	155	150	Tw
433	480	105	100	Tw
451	540	135	127	Tw
456	540	150	146	Tw
462	540	148	140	Tw
501	460	126	96	Tw
504	510	125	121	Tw
525	460	124	74	Tw
532	380	34	30	Tw
538	485	97	93	Tw
542	480	88	84	Tw
543	500	122	118	Tw
548	525	137	127	Tw
552	405	220	200	Tp (?)
556	465	135	125	Tw
558	540	140	120	Tw
568	500	130	126	Tw
574	475	84	80	Tw
587	505	145	141	Tw
624	520	130	126	Tw

PRELIMINARY DATA REVISED

Table 4.--(Cont'd).--Records of domestic wells near the pesticide waste disposal site, Hardeman County, Tenn.

Well Number	Land Surface Elevation, ft. abv. msL	Well Depth, ft.	Depth to Top Well Screen, ft.	Formation Source (1)
659	490	115	111	Tw
678	495	100	96	Tw
679	500	145	141	Tw
705	485	108	104	Tw
734	495	145	—(2)	Tw
771	560	149	145	Tw
796	380	35	27	Tw
806	505	120	112	Tw
1000	505	129	125	Tw
1015	485	120	110	Tw
1026	430	84	80	Tw
1027	490	150	146	Tw
1029	390	130	122	Tw

PRELIMINARY SUBJECT TO REVISION

(1) - Depth of well screen was used to identify source: Tc - Claiborne Fm., Tw - Wilcox Fm., Tp - Porters Creek Clay, Tcl - Clayton Fm.

(2) - Depth not available.

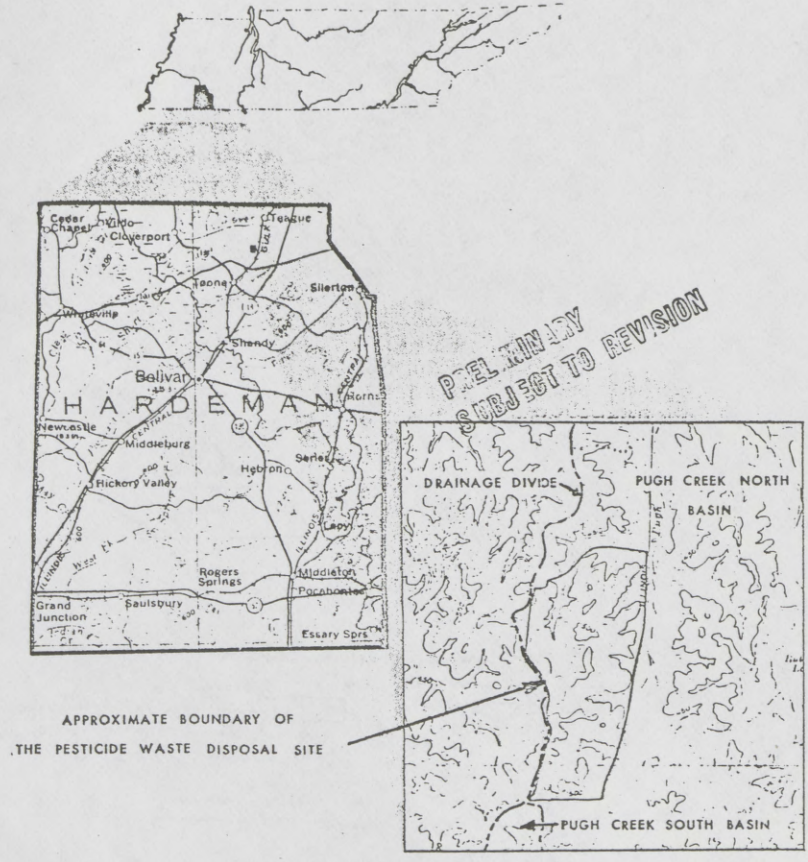


Figure 1. -- Location of study site.

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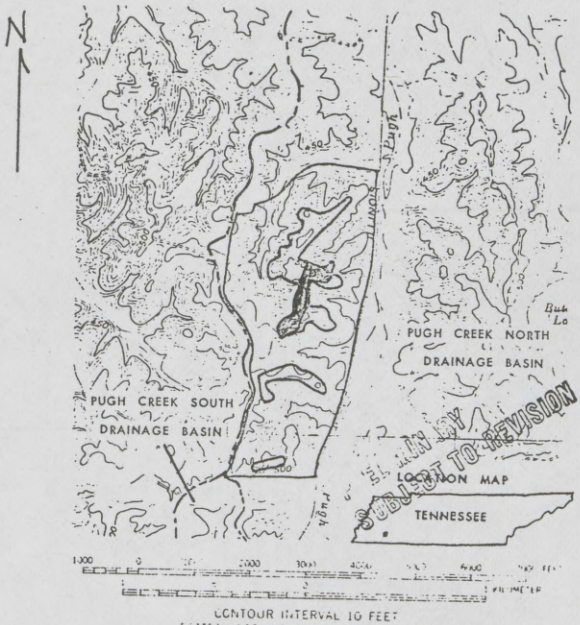


Figure 2. --- Enlargement of the disposal area from 1967 to 1972.

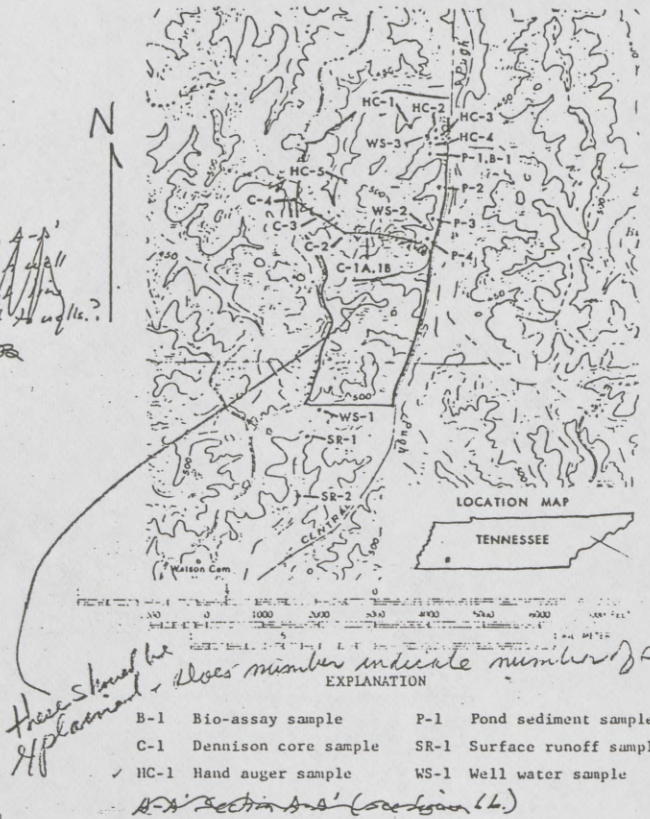


Figure 5. -- Chemical sampling points around the disposal site.

PRELIMINARY SUBJECT TO REVISION



Number all auger holes and other holes give symbols in explanation & show section A-A' on Fig 5.

Figure 6a. -- Auger drilling locations of this study.

KTZ/CRD

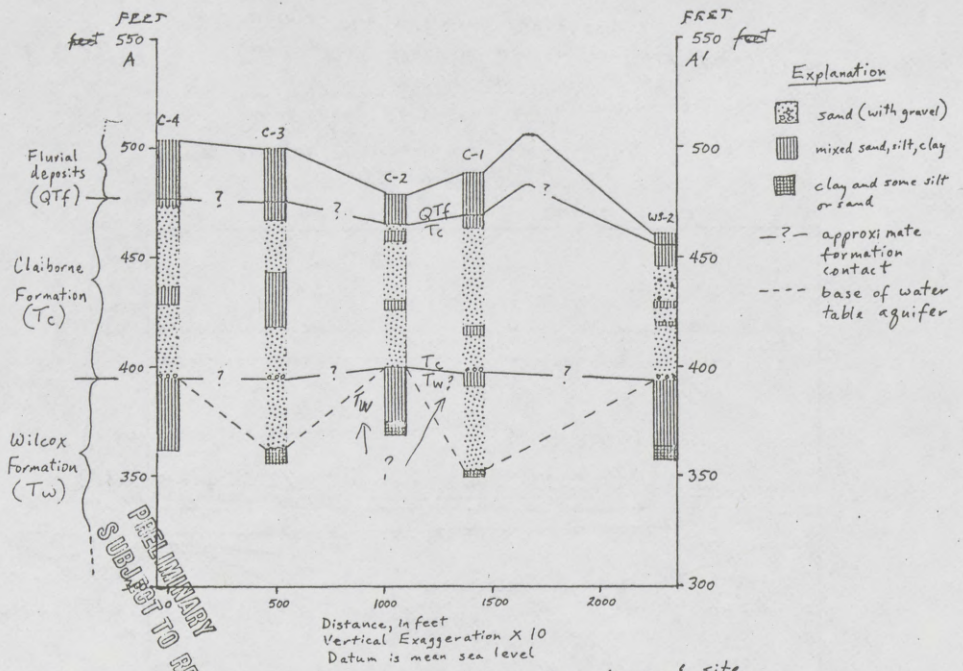


Figure 6b.— Cross section through the disposal site, based on records of auger drilling and gamma logs, 1977.

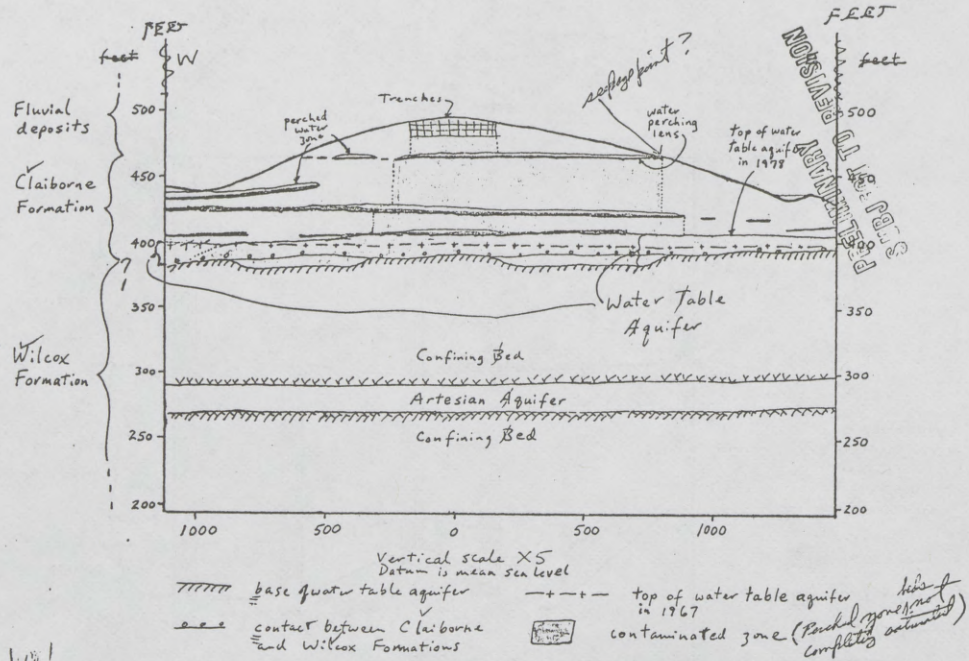


Figure 7. -- Conceptual diagram of contaminant percolation below the disposal trenches.

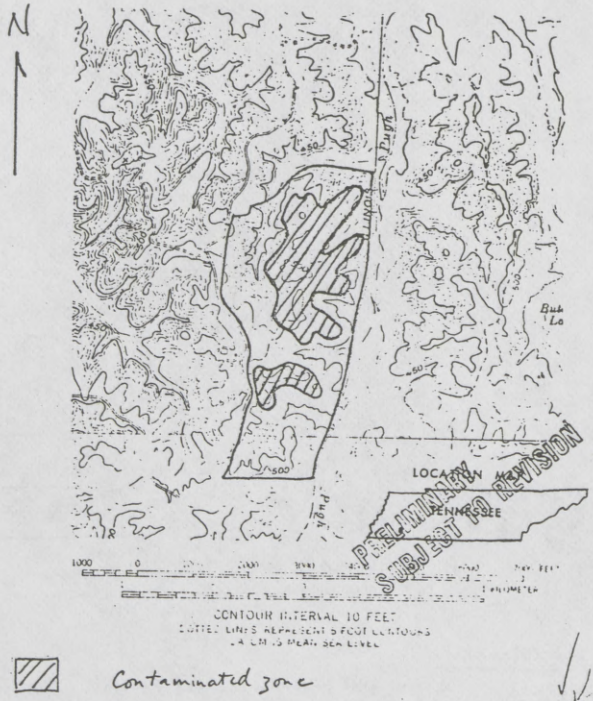


Figure 8. -- Inferred extent of contamination in the upgradient perched water zone.

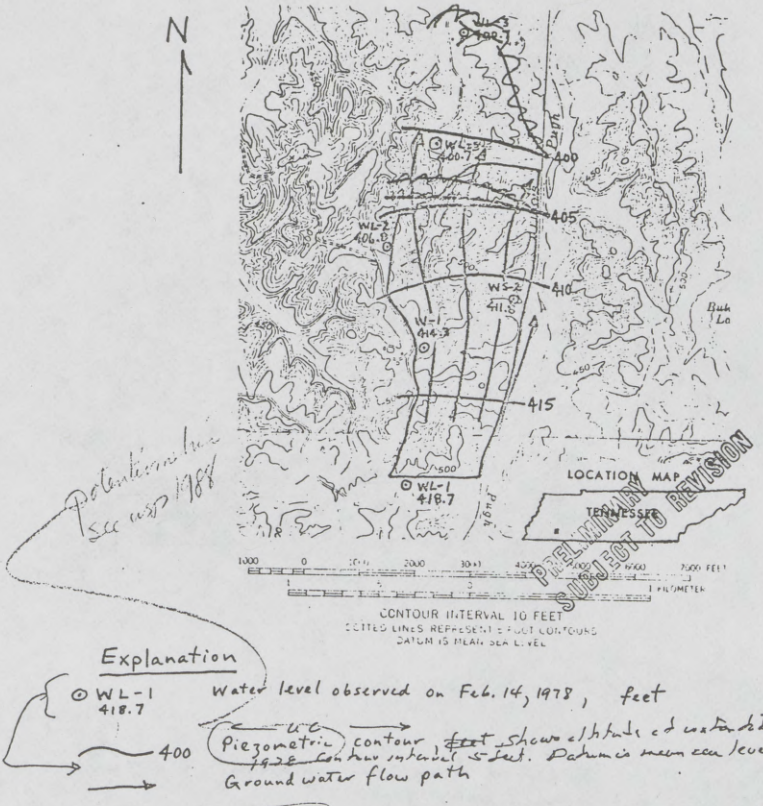
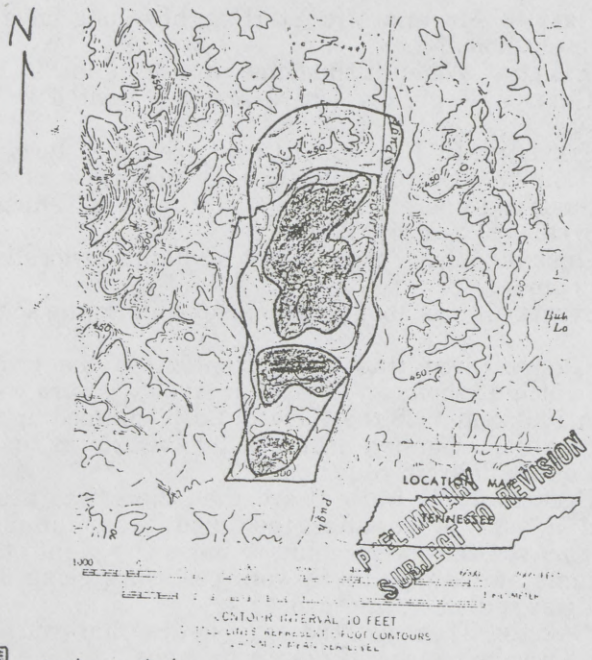


Figure 9. -- Piezometric surface map of the water table aquifer below the disposal site in 1978.



Contaminated zone, based on migration rate of 80 feet per year for 6 years (1972-78).

contaminated zone, based on migration rate of 300 feet per year for 6 years (1972-78).

Figure 10. -- Inferred extent of contamination of the water-table aquifer in 1978.

Mr. GREENE. Mr. and Mrs. Sterling, how long have you lived in your present home?

Mr. STERLING. We built the home we live in now in 1965.

Mr. GREENE. Generally where are you located in the State of Tennessee?

Mr. STERLING. In Hardeman County, northeasterly part of Hardeman County about one-quarter mile northwest of the dumpsite.

Mr. GREENE. Generally, is this a rural part of Tennessee?

Mr. STERLING. Yes, sir. Very.

Mr. GREENE. Where is the Velsicol dumpsite located in relation to your home?

Mr. STERLING. It is about one-quarter mile to the southeast of our house.

Mr. GREENE. Directing your attention to the group of photographs which are before you [exhibit A, p. 91], were you aware that between 1964 and 1972 the Velsicol Corp. dumped approximately a quarter million 55-gallon drums of toxic waste in that dumpsite a quarter of a mile from your home?

Mr. STERLING. We were aware that there was pesticides being dumped a year or so after they had been dumping. We first thought maybe they were going to move the plant out of the city. We became aware that there were pesticides being dumped there when it was spilled on the road.

Mr. GREENE. That was the only notice that you had that the dumpsite was being located near your home?

Mr. STERLING. That is all.

Mr. GREENE. Did you ever observe the dumping operation, and if so, can you describe it for us today?

Mr. STERLING. Yes, sir. I passed by the site numerous times hunting on the property, and the barrels were dumped in shallow trenches 10 to 15 feet deep.

Mr. GREENE. The photographs before you were taken by representatives of the U.S. Geological Survey and show what appear to be broken drums and drums being dropped from dump trucks into pits. Is that your understanding of what that operation was like?

Mr. STERLING. Yes, sir. I have seen the drums not actually dumped into the trenches but I have been by when they were not covered, and you could see the liquid standing 2 to 3 feet deep in these ditches.

Mr. GREENE. Could you ever smell that dumpsite from your home?

Mr. STERLING. Yes. We had quite a stir at one point because they were supposed to keep the thing completely covered, and a lot of times you could not hardly stay outside at night because when the wind was in the right direction coming from the dumpsite it was a very noticeable odor from the site.

Mr. GREENE. Were you aware that it is generally thought that this dumpsite was initiated because of a fishkill the length of the Mississippi River from Memphis to New Orleans?

Mr. STERLING. Yes, sir, we found this out sometime after the dump was started, and also in the last year we have found out that they were denied access to any sanitary landfill in Shelby County because of the hazardous waste. We did not know that at the time it was being dumped there.

Mr. GREENE. Was there ever a local hearing before the construction of this dumpsite?

Mr. STERLING. We asked the public health commissioner, who came down and held a public meeting in the early part of this summer, that there was a public hearing, and we asked why we were not informed of this hearing, and we were told that it was published in the paper. So I asked for a transcript of the hearing, and when I read the transcript no one was invited except people—health officials and interested parties due to the nature of the unanswered questions.

Mr. GREENE. When was the hearing you are referring to?

Mr. STERLING. 1971, I believe.

Mr. GREENE. One year before the dumpsite was closed and approximately 7 years after the dumpsite was begun to be used.

I would like to call your attention to the partial list of chemicals before you as well as the State's 1972 order to close the Velsicol dumpsite. I am specifically referring to page 3 of the State's order which, among other things, states:

> The dangers presented by these compounds are directly related to their high toxicity and persistent toxicity over long periods of time. Among the compounds found at the dump are endrin, dieldrin, aldrin, heptachlor, isodrin, hexachlorocyclopentadiene, and hexachlorobicyleheptadiene * * *

It goes on to say:

> The characteristics of these compounds which create a danger to both man and the environment include extreme toxicity over long periods of time, indicating very slow degradation; near insolubility in water with the tendency to cling or adhere to particulate matter; and the ability to accumulate in the fatty tissues of most animals and to be absorbed by vegetable crops from contaminated soil, thereby entering man's food chain.

Also it says, describing Velsicol's operation:

> No care is taken to insure against bursting drums and the trenches are not lined with impermeable materials to prevent these cholorinated hydrocarbons from leaching into the soil.

Finally at page 5 of the document it states, and I quote:

> There is every reason to believe that the continuous action of water moving through the contaminated subsurface zones of Velsicol's dump in Hardeman County would slowly move the contaminants along its path.

Does it surprise you in the light of the lack of notice you and your family received that the State knew so much about the hazards associated with that dump in 1972?

Mr. STERLING. Yes. We were very concerned about not being told anything. The only thing that we have been told, and this was unofficial, by the man who maintains the dumps, who keeps the backfills, and what have you, and as far as we have been told, everything was fine until our water became undrinkable.

Mr. GREENE. Did anyone at any time ever tell you that pollution existed because of the dumping which had already occurred?

Mr. STERLING. We were told as late as the early part of 1968 that, as far as they knew, all reports were negative; there was no contamination whatsoever.

Mr. GREENE. When did you first notice, and in what way did you first notice, contamination of your well water?

Mr. STERLING. Well, our neighbors began to complain that there was something wrong with their water. Of course, they had origi-

nally moved in. We figured maybe they are just from a different part of the country and they don't know what good water is.

So, in a little while we began to notice. It is kind of a gradual thing. It kind of sneaks up on you when you are drinking it every day. Other people living in the area for a long time began to notice this water is not tasting right.

So, thinking possibly we were getting oil contamination from the pump, I changed the pump in my well. After running it for several 24-hour periods, if anything, the taste was worse. So, we assumed that there was something else drastically wrong.

At that time we asked the county health official to come out and check. After three tests were made, they all came back negative.

We began to think that possibly it could be the dumpsite. So, we kept requesting that it be checked for chemical contamination as opposed to biological, which is the standard procedure.

I think the next three or four tests were made for these contaminations, and about the fifth or sixth one did come back positive.

Mr. GREENE. To the extent of your rememberance, what was the positive response they were getting on the test? Do you recall which chemicals they found?

Mr. STERLING. No, but there were 12. I was just checking over this top list that you have. I think possibly what they were checking for in the first chemical tests they ran was for chemical compounds, which they break down into individual chemicals by the time they reach our water supply.

Mr. GREENE. I see. When were you told not to drink the water?

Mrs. STERLING. Approximately March of this year.

Mr. GREENE. And who told you not to drink the water?

Mrs. STERLING. Water Quality Control in Jackson.

Mr. GREENE. And this is after the test series had been completed?

Mrs. STERLING. Yes; it was I think maybe even after the second test, they come back positive.

Mr. GREENE. Did representatives of the Environmental Protection Agency or Velsicol similarly give you notice of problems with your water supply?

Mrs. STERLING. No; they did not.

Mr. GREENE. Do you continue to use this water for bathing or dishwashing or any other domestic purpose?

Mrs. STERLING. Well, some of us are and some of us aren't. My father does not use the water for anything, but my husband and I use our water to bathe. But our children go to the State park, about 20 miles from home, to take their showers. I use the dishwasher still, and I do the laundry.

Mr. GREENE. Thank you.

Thank you, Mr. Chairman. No further questions.

Mr. GORE. You still wash your dishes in it?

Mrs. STERLING. Yes.

Mr. GORE. And a lot of your neighbors still wash their dishes and bathe with it?

Mrs. STERLING. Yes, sir.

Mr. GORE. Nobody has warned you not to do that.

Mrs. STERLING. Well, we were told it would not be a good idea to do that, but they haven't mentioned to us what to do about it.

Mr. GORE. Why does your father not use it at all?

Mrs. STERLING. Because he is 100 percent disabled, being in a stroke for 11 days. They found nothing to cause the stroke. He will not use the water at all.

Mr. GORE. And you think it was a result of the consuming of the water?

Mrs. STERLING. Well, there have been so many things happened there, through the people that have been using the water, that is the only conclusion to come up with.

Mr. GORE. Mrs. Sterling, tell us about Mrs. Boyd's child. That was one thing that just made my blood boil when I was reading over the series of stories about this, by Sue Ann Roberts.

Mrs. STERLING. Well, Mrs. Boyd is my sister-in-law. She is my brother's wife. We were all really quite excited about her being pregnant. She got pregnant at the beginning of the water thing.

We drank the water for months, thinking that it was safe to drink because our local health officials kept saying it is fine, there is nothing wrong with the water. So, we continued to drink the water, to use the water in every way conceivable.

We did not stop because we were not told to stop. They said it is fine. She stopped using the water for a while, and then they told us that they got overexcited, that it was OK to use the water. So, she went back to using the water, bathing in the water and drinking the water.

The baby was born 2 months early without a stomach wall formed. All of his intestines were outside of his body. The doctor said if he had been full term that he would have died, that he would have been a still birth baby.

I was there at delivery. I asked the doctor, "Did the chemicals in the water have anything to do with it?" He would not take a stand. But they rushed the baby to Lobano Hospital. He weighed only 3 pounds.

He was in the hospital for 2 months. He had extensive surgery. They could not get his body temperature stabilized enough for him to gain any weight. Finally, at 2 months he came home when he reached 4 pounds. He is doing fine now. He has to be back for checkups very often to Lobano in Memphis.

Mr. GORE. And all through this time, Government officials and the company were trying to make you believe that the dumpsite was in no way responsible for the contamination of your water, isn't that correct?

Mrs. STERLING. That is correct. The officials came to our house to take some samples of water for water quality control, and I knew they were officials from Velsicol.

I insisted that they drink the water, with them telling us that it was OK to drink, that it was OK, it was fine. But they refused to drink the water. They would not drink the water because they said, "I might die before I get back to Memphis."

That was the exact words they said, standing in my home.

Mr. GORE. Well, here you are, less than a half mile from the dumpsite, 16.5 million gallons of exotic chemicals. They show up in your well water and the company tries to make you believe that there is no connection between the two occurrences.

I think now they have finally conceded that there is a possibility of connection, is that right?

Mrs. STERLING. True.

Mr. GORE. And they have agreed to pay you $160 each, right?

Mrs. STERLING. Right.

Mr. GORE. To hook up to the water line. Unbelievable, just unbelievable.

Mr. WAXMAN?

Mr. WAXMAN. Thank you, Mr. Chairman.

How many wells in your neighborhood have been contaminated?

Mrs. STERLING. Five.

Mr. WAXMAN. How many familes are affected, how many people in all?

Mrs. STERLING. Well, there are 47 people in all—23 children, plus the adults makes 47—which 2 families have moved from our neighborhood because of the water.

Mr. WAXMAN. Do you have with you today samples of water from your well and the other wells that have been contaminated?

Mrs. STERLING. That is true.

Mr. WAXMAN. May I see the sample?

Mr. STERLING. Mr. Chairman, this water, by the way, was taken directly from our kitchen sink.

Mr. GORE. That water was taken from your kitchen sink. Don't mix it up and pour it in the other pitcher where we are asking our witnesses to drink from.

Mr. STERLING. We do have another sample here also that was brought from a neighbor's well. From the tests, some wells have a higher concentration of one chemical, some have higher concentrations of another.

Mr. WAXMAN. I have a cold, but it still smells like shoe polish of some sort.

Mr. Chairman, I would like to put in the record that in this water there have been found a number of chemicals. I would like all of the chemicals listed to be part of the record so that those who look at the transcript of these proceedings will know exactly what substances have been found in this water.

Mr. GORE. Under the previous order, that will be inserted into the record.

[The information referred to follows:]

CHEMICALS FOUND IN STERLINGS' WATER SUPPLY*

Tetrachloroethylene	Chlorobenzene	Chloroform
Hexachloroethane	Hex BCH	Acetone
Hexachloro 1,3-Butadiene	Isodrin	Methylene Chloride
Hexachlorocyclopentadiene	Endrin	Chlorobenzene
Dicyclopentadiene	Heptachlor	Carbon Tetrachloride
Hexachlorobenzene	Chlordane	Trichloroethylene
Pentachlorobenzene	Benzene	

*See also exhibit F, p. 111.

Mr. WAXMAN. Have you noticed or heard of any other adverse health effects on the part of any of your neighbors who share the well water or have found their well water contaminated?

Mrs. STERLING. Well, everyone whose well has been contaminated for the longest period of time has had unexplained illnesses. My husband's mother was in the hospital. His sister was in the hospital. My father was in the hospital.

Everyone complained of severe headaches, nausea, just countless things every day, which we took a trip to Jeykell Island, Ga., was gone for like 10 days, and we came back home and my whole family got sick as soon as we got back home, into the water, into our home, where the water runs, using the water again.

Mr. WAXMAN. As I understand it, EPA and the State of Tennessee identified chloroform, benzene, and the pesticides heptachlor and chlordane in your drinking water. All of these chemicals are known or suspected carcinogens.

Were you ever informed of the fact that these substances were in your water?

Mrs. STERLING. When we finally got a chemical list, we asked officials what the effects of these chemicals would do, what were the effects, which we never got an answer. They said that there had not been enough research to be able to give us an answer.

I went to the county health officials and State health officials, and I even called the EPA in Atlanta, Ga., to get some of our questions answered, and we have as of yet to get answers.

Mr. WAXMAN. Have you been informed that many scientists hold that these potentially dangerous compounds can be absorbed through the skin?

Mrs. STERLING. Yes, we know that.

Mr. WAXMAN. You have been informed of that?

Mr. GORE. Will the gentleman yield at that point?

Mr. WAXMAN. Yes.

Mr. GORE. You know, I really think that, based upon what we know from previous experience investigating some of these chemicals, you and your neighbors ought to not bathe in it and wash dishes in it.

Carbon tetrachloride, for example, can be absorbed through skin contact. If the EPA refuses to answer your letters, you ought not to have to come to Washington for a congressional hearing to get advice of this kind. But it still is a hazard there.

Mrs. STERLING. I called the EPA in Atlanta. I explained to them the problem we were having. I explained to them about the chemicals being in the water, which they had a list, and they had water samples at the time.

Water quality control in Jackson would not or could not tell us anything. They were waiting for the exact amount to be sent to them from Atlanta or Athens.

I talked to some people down there and they said that since we were a private well system and we were not a public water system, that we were of very low priority, that our drinking water, that there were much higher priorities in their office than our drinking water. I talked to them personally myself.

Mr. WAXMAN. One specific chemical that is acutely toxic and is, in fact, readily absorbed through the skin, is carbon tetrachloride. A variety of problems, including kidney, liver, lung, and central nervous system damage is reported to be associated with this toxic substance.

Were you ever informed that carbon tetrachloride was in your drinking water?

Mrs. STERLING. Not until just 2 or 3 weeks prior, you know, to your involvement here because I was not home, but my daughter took a call from EPA in Atlanta, which they left no message. But they did call my sister-in-law and tell her carbon tetrachloride was in it, which they did not explain any of it. No; I did not know that it was as dangerous as I have found out since I have been here in Washington.

Mr. WAXMAN. I assume you and your family, as well as some of your neighbors have seen doctors. You mentioned specifically some cases where doctors were involved.

Have any of the doctors that have been seen by any of the families in your area, linked adverse health effects to the chemicals in the water?

Mrs. STERLING. They will not. We have even had doctors tell us that they did not want to get involved, not to even come.

Mr. WAXMAN. Have they tested your blood or other fatty tissue for residues?

Mrs. STERLING. Dr. Hale, our local health official in Hardeman County, took—well, he came to our home and he was going to take blood tests of anyone in the area that would like to have a blood test.

He said that there especially would be more concentrations in children, and he did not take any child's blood tests. I think he managed to get three, which the blood samples are frozen because we were told that they did not know a laboratory that could run the blood samples for these chemicals, and no, there have been no fatty tissues tests made.

Mr. WAXMAN. Do you have any explanation why the doctors would be so reluctant to get involved in what is clearly a medical problem for patients?

Mrs. STERLING. I wish I did.

Mr. WAXMAN. Are these doctors that you have known for some years, that have served the family, and been family physicians?

Mrs. STERLING. Yes.

Mr. WAXMAN. I find that remarkable.

Well, I join my colleague, the chairman of this meeting, Mr. Gore, in expressing to you both the horror that we feel for the experience that you have gone through and the dread that all of us feel when we realize that this kind of situation is not an isolated event. What has happened in the Love Canal area of New York, and what seems to be happening here in Tennessee, may happen in places all over the country. We now know hundreds of sites have been used to dump toxic substances without providing adequate protection to the public from chemicals seeping into local water supplies.

We hear so much today about Government involvement interfering in our lives. However, the public expects the Government to be involved and protect each of us from toxic substances, we may find right in the drinking water in our own home.

Thank you very much for your testimony.

Mr. STERLING. Mr. Chairman, back to your question about us moving out. We did contact Red Cross at the insistence of some of

our friends, and we were told if we could get some public official to declare this a health hazard that they could provide housing for us temporarily.

But, so far we have not been fortunate enough to find somebody that would say yes, there is a hazard.

Mr. LAFALCE. For your information, I simply want to point out that in the Love Canal situation, in Niagara Falls, what was necessary was for a considerable amount of testing to take place.

I constantly had to prod the State health department, the State department of environmental conservation, the Environmental Protection Agency. But then after months and months and months of prodding, they finally did declare—"they" being the State health department—a health emergency to exist.

Based upon that, the Governor of the State of New York requested the administrator of the Federal Disaster Assistance Administration, Mr. Bill Wilcox, to trigger the provisions of the Disaster Assistance Relief Act.

Those provisions were triggered. It was defined as an emergency under the Federal Disaster Assistance Relief Act, the very first such occasion when an act created by man as opposed to an act of God was brought within the embrace of those provisions.

But a precedent has been established. Relief, including temporary relocation costs and energy construction work, has been provided, continues to be provided by the Federal Government under the provisions of the Federal Disaster Assistance Relief Act.

This is something that might be applicable there, and something perhaps which we can discuss with your Congressman, Congressman Beard.

There are further avenues of recourse, too. Permanent relocation is not something the Federal Government has ever provided. Such action would be dependent upon the generosity of your State. Our Governor and State legislature have been unbelievably generous because they have provided permanent relocation for the victims of the Love Canal area. They have provided new homes for all those within the immediate contiguous area.

Mr. GORE. I might just say, Mrs. Sterling, and Mr. Sterling, that the subcommittee will be more than glad to write a letter to the health officials, summarizing the opinion of this subcommittee on the imminence of the health hazard there. It is certainly clear.

Mr. Waxman was talking about the carbon tetrachloride. The analysis of your well water indicates that it contains 2,400 times the maximum exposure level set by the National Institute of Occupational Safety and Health.

Now, did anyone ever tell you that before?

Mrs. STERLING. No.

Mr. GORE. No, nobody ever told you. You know, in Ohio, EPA instructed people consuming water to remove the carbon tetrachloride from it when they found levels of carbon tetrachloride 48 times lower than the amount found in your water. Yet, they never said anything to you about carbon tetrachloride.

I think it is an absolutely disgraceful performance on the part of the agency.

Mr. Nowak?

Mr. Nowak. Thank you, Mr. Chairman.

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If I may just go back a minute, you had mentioned that in March of 1978, I believe, it was confirmed that five wells serving a total of 12 families—or I guess approximately 40 people—that those wells were contaminated with a mixture of toxic chemicals.

I am wondering if since that time, if there has been any greater exposure that you are aware of, or any spreading of this particular problem?

Mrs. STERLING. Not that we are aware of, no.

Mr. NOWAK. Could you tell us how large an area these families live in at the present time?

Mr. STERLING. The six wells are probably within half a mile of each other, stretched out along the west side of the dump site, the north and the west.

Mr. NOWAK. And you haven't discontinued your use of it for washing in your own private use, for dishes and laundry?

Mr. STERLING. We are still using the water for laundry, in our dishwasher, for bathing, except our children are taken to a State park, which has a campground and bath houses to take their showers.

Mrs. STERLING. The reason for that, we have three daughters, and little girls like to get in the bath tub and spend an hour. There is that nagging thought in the back of our minds, are these daughters going to grow up and have cancer, because they have been subject to this water for so long, even when we were unaware.

Are our daughters going to have deformed children. Is our son going to have deformed children. We have these questions, and we cannot get them answered.

I feel like that if we get anything, that we need to know this. We need to know this, for their protection, for the protection of their children to be, because we can't get answers.

I am sure that when they grow up, if they knew that their child was going to be somehow affected by these chemicals being taken into their bodies to the great extent that they are, that they would make the decision not to have children.

I feel like that if anything, we have got to know this. We have got to know this.

Mr. NOWAK. There is certainly great sympathy here for you. I know in our own area, in the Love Canal situation, the greatest danger was to the unborn and certainly the young children, and they were the first removed from the area.

It would seem that greater emphasis certainly has to be placed on your own situation because you are living under the cloud of really not knowing. EPA and the other agencies involved really do have to take an active role and certainly a thorough analysis of what exists there now is required.

So, I hope that this hearing will help focus prompt attention on your problem. I am sure that under the leadership of our chairman, Mr. Gore, we will be able to have further oversight into this matter and into many others throughout the country.

I want to thank you very, very much for your attendance today.

Thank you, Mr. Chairman.

Mr. GORE. Mrs. Sterling, we talked earlier about your reactions when you went back and looked at some of the reports that had been done so many years ago.

What is your feeling about how officials have handled this, or how government as a whole has functioned with respect to this problem?

Mrs. STERLING. I don't have the words to express how I feel. I am hurt. I am bewildered. I cannot understand why we are not made aware of this because if we had know this when these documents were written, many people would not live in that area because they could have built their homes elsewhere.

Many lives would not have been affected. The chances that have been taken would not have been taken because many of the people would not live there.

In fact, probably we would not live there because when they first learned this, we hadn't even finished our house there and it would be so much simpler to just leave it then than it is now.

Our children have gone to school there. We have a 13-year-old daughter. She is in the eighth grade. She has lived there all her life. Her friends, her surroundings. We would not be there. Many of the other people would not be there.

I feel like that the government officials, that the State officials should have been open and honest with us because I thought that is what government was about.

Mr. GORE. At one point it was recommended to you that you boil the water, is that correct?

Mrs. STERLING. That was recommended to one of our neighbors, yes.

Mr. GORE. And she did so for some months?

Mrs. STERLING. She did.

Mr. GORE. Later you found out that only intensified the concentrations of the pesticides?

Mrs. STERLING. That is true.

Mr. GORE. One of your neighbors, perhaps it was your father, experienced symptoms and was advised by his doctor to drink as much water as possible?

Mrs. STERLING. That was my husband's father.

Mr. GORE. That was your father, Mr. Sterling?

Mr. STERLING. Yes, sir.

Mr. GORE. What kind of symptoms did he experience?

Mr. STERLING. He was drinking the water all the time, of course. And he began to lose his breath, symptoms of emphysema, which my dad has been a smoker for 30, 40 years, I guess. And I have told him to quit. But it is kind of hard to raise parents sometimes. But he went to the doctor, and they gave him some medication for emphysema, and told him that, recommended he drink all the water that he could. And he told me later that he was afraid one time that he would not live to see the first of the year because he became very, very ill. Since, we found out there was a problem with the water, and everybody in the area now does not drink it, and he is back to work and doing fine. He still has shortness of breath. But nothing, not anything near the extent that it was back in November and December of last year.

Mr. GORE. You know, you were trying to establish the fact that the dump area was the source of the chemicals in your wells. It just seems so obvious that it was the source. Could you tell us

about the problems you had in proving that? The company consistently denied that there was any relation; is that correct?

Mr. STERLING. The company and the man, our neighbor who works for the company, helped haul the chemicals in, sold the property to the company, does the upkeep, fills the holes that sink in, and he told us there wasn't anything in there to worry about, that he was staying in constant contact with these people, and he had talked to the people who were making the 1976 survey, and there was absolutely no contamination of any water whatsoever. So we were going merrily about our way. And then we finally decided there was something wrong and called in our county health official, and he goes around to different people's houses that complain about their water, and takes a little handful of it, tastes it, and says, "Ah, that is fine, go ahead and drink it."

Mr. GORE. Well, we are going to explore EPA's performance with later witnesses. But I think the record will show that one of the reasons they failed to act is that an official said that there was no evidence to establish a connection between the dump and the contamination of the wells. And that they bought this line hook, line, and sinker. And how they could do so is just beyond me; 16½ million gallons of it, less than a half-mile from your home, exotic chemicals, they turn up in your well. The company says, "Oh, there is no connection," and EPA says, "I guess there is no connection." It's just ludicrous, just ludicrous. And there has still been no comprehensive health survey of the people who live in the vicinity.

Mr. STERLING. None whatsoever.

Mr. GORE. It is difficult to believe.

I would like to insert into the record at this point, without objection, a series of articles by Sue Ann Tanzer Roberts, reporter from the Jackson Sun, detailing the experience that you and your neighbors have gone through during this period of time.

[Testimony resumes on p. 305.]

[The articles referred to follow:]

Toone Water Investigated For Pollution

Related editorial, Page 2A

Copyright 1978, The Jackson Sun, Inc.

By SUE ANN TANZER ROBERTS 5/10/78
Sun Reporter

TOONE — State water quality control officials say they suspect that about 16.5 million gallons of toxic chemicals are seeping into at least two community wells.

The chemicals were buried between 1964 and 1972 in a Memphis-based chemical company's dump near here, but a Velsicol Chemical Corporation spokesman says there is no proof that the pollutants are coming from the dump site.

MEANWHILE, 25 residents of the Toone-Teague Road have been told by water quality control officials not to use the water they get from two area wells because 12 chlorinated hydrocarbons have been found in the water.

Poison control officials in Memphis say ingestion of the chemicals could cause kidney, liver and nerve damage, even cancer, over a long period of time.

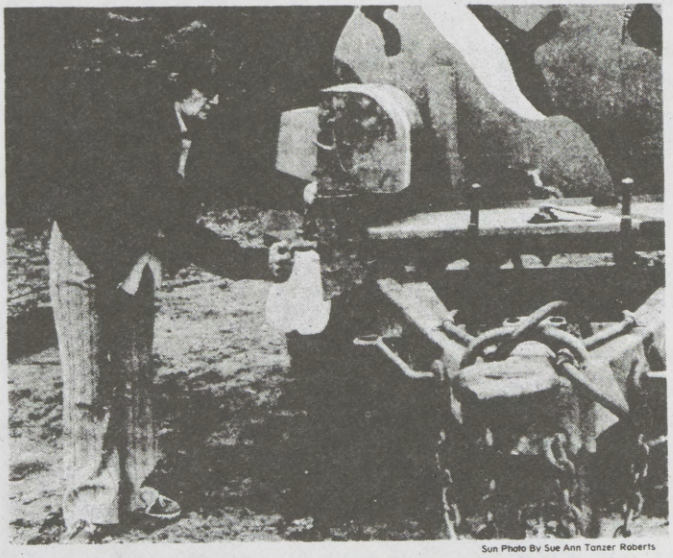
During the eight-year period, Velsicol dumped about 300,000 55-gallon drums of its waste products from pesticide production into 15-foot trenches in a 242-acre dump, water quality control officials say.

In 1972, the company was ordered by state Department of Public Health Commissioner Eugene Fowinkle to stop the dumping and the company began burning its wastes out of state, said Velsicol Plant Manager Charles Hanson.

"We don't believe there is seepage," Hanson said. "Right now, I don't think we can really say anything because we don't have any results from our testing or the state's testing."

Hanson said a preliminary study by his company shows that "the material is stable and staying in the tanks."

Wayne Max, environmental engineer for the Department of Public Health's Division of Water Quality Control, said two tests have revealed positively that toxic pesticide-related chemicals are in that area's drinking water.



Sun Photo By Sue Ann Tanzer Roberts

Toone-Teague Road residents fear that chemicals found in their water could cause long-term damage to their bodies. Meanwhile, they need to haul their drinking water daily from a tank supplied by Civil Defense workers.

IN A LETTER dated May 2, Max gave Velsicol 10 days to determine temporary and long-term solutions to the problem. Max has not received Velsicol's response.

Max told Velsicol the chemicals found in several area water samples "appear to be waste products of materials produced by Velsicol which were buried near the mentioned wells in the 1960s and early 1970s."

"It is suspected that they may be coming from the burial site," it stated.

In November, the Woodrow Sterling and John D. Boyd families complained to Max's office about a peculiar smell and taste in the drinking water in their well. Samples were taken, and results were negative.

Sterling said he even replaced the pump on his well, thinking a malfunction could be causing the objectionable smell and taste.

In January, a second batch of water samples was taken. These were positive, Max said, and the results were verified by a March 23 sampling.

Max said it was later in March when the Boyds and Sterlings were advised not to use the water from the wells, which also serve seven other families. Since then, 13 other wells have been tested and Max is waiting results from those tests.

Civil Defense workers deliver safe drinking water to the area.

Area residents use the fresh water for drinking and cooking, but they say they still use the polluted water for bathing, washing dishes and clothes and all other purposes.

MAX SAID he and his department have been testing the water and soil around the dump for several years to monitor any seepage that might have occurred.

If Velsicol does not come up with a solution to the groundwater he believes the company's chemicals have contaminated, Max said he will consider taking action against the company.

"We don't have any plans along this line at this time," he added.

Max said he does not know what can be done about the polluted wells.

A problem facing officials is that Velsicol buried its waste before laws governing such disposal were passed.

"People have willy-nilly disposed of things without concern for ground water. This is just the beginning of this type of thing all over the country," said Dr. Mark McClanahan, toxicologist for the Environmental Protection Agency in Atlanta.

"It is a very hazy area in which our laws are not well defined," McClanahan added. If state officials are unable to take action against Velsicol, however, EPA is prepared to, he said.

If Velsicol were still using the site, environmental agencies would have several regulations under which they could prosecute, said Tom Tiesler, director of the Division of Solid Waste Management in Nashville.

"THE WAY THE waste was put into the trenches at the time, a lot of it spilled out and the drums rusted away," he said. Laws banning such disposal became effective in 1972.

His division is waiting for Max to resolve the problem. "Actually, we're not doing too much," he said.

"We're very much interested in this. There's a great potential there for serious ground water pollution problems," Tiesler said. "I'm not sure at this point if any action needs to be taken."

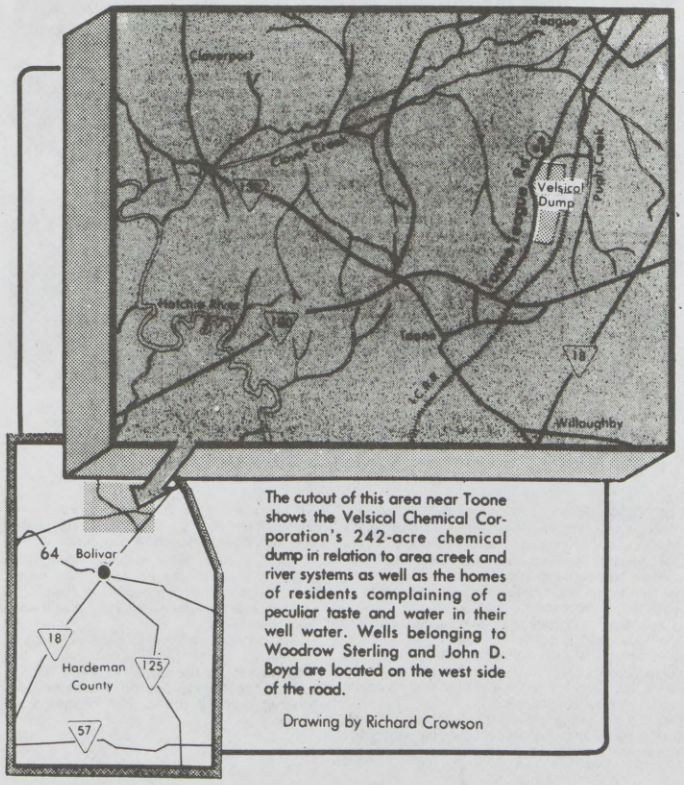
Tiesler and other officials agree that before anyone pushes the "panic button," all the facts need to be known.

Meanwhile, Toone-Teague Road residents wonder what effect the chemicals have had on their bodies.

County Health Officer B.D. Hale said he is concerned about the chemicals' possible long-term effects. He has put in a request with the University of Tennessee Center For the Health Sciences in Memphis to see what tests can be made to determine chemicals still in their bodies.



Christine Sterling
. . .initiated complaints.



The cutout of this area near Toone shows the Velsicol Chemical Corporation's 242-acre chemical dump in relation to area creek and river systems as well as the homes of residents complaining of a peculiar taste and water in their well water. Wells belonging to Woodrow Sterling and John D. Boyd are located on the west side of the road.

Drawing by Richard Crowson

Residents Demand Answers

"I would like to have the question removed from everyone's mind. It's my prediction that these (chemicals) are not associated with any known disease," Hale said.

A biopsy can be performed by taking a sample of fatty tissue and having it chemically analyzed, McClanahan noted. However, since many residents stopped using their water a month ago, McClanahan said it is unlikely that the chemicals would be detectable in either blood or urine.

SCIENTISTS AGREE the study of effects of such chemicals is an infant science and even the so-called experts are not sure what will happen to victims after long exposure to small doses.

About six residents of the Toone-Teague Road have complained of physical problems — persistent dizziness, paralysis, strep throat and other illness — but there is no medical evidence to link the illnesses to the chemicals.

Christine Sterling, mother of four, whose initial complaints spurred state officials to take water samples in her well, has complained of paralysis in her right arm and leg — a condition she fears may be a result of drinking polluted water.

Several of her children have also told her of weak knees, an unusual number of numb joints and other illnesses over the past six months, Mrs. Sterling said.

They have contacted medical authorities and say they are told there is no apparant reason for the ailments.

"It looks like it is tearing down the immunity of the body to fight off infection," speculated her sister-in-law, Nell Grantham, an LPN who lives nearby.

For months Mrs. Sterling has been contacting state and federal authorities to get some action on the water problem.

"I'm very, very upset. I feel I am slowly killing my family and what can I do about it. We have waited and waited and waited for these people (water quality control officials) to do something. We can't be silent any longer," Mrs. Sterling said.

JOHN AND Ethel Boyd, the younger Mrs. Sterling's parents who live down the road, said they have suspected problems with the water for a long time. The Boyds were the first to detect an unpleasant odor and taste in their well water.

"I don't want to be poisoned ... When you run it through the hot water heater, it almost takes the skin off your nose," Boyd noted, speaking of the odor it emits.

Their neighbors, Pat and Daniel Johnson, have stopped drinking their water, even though water quality control officials have not confirmed that it is polluted.

The Johnsons' 14-year-old daughter, Pamela, complained of shortness of breath, coughing, vomiting and was taken to LeBonheur Children's Hospital in Memphis recently when they learned their well might be contaminated.

Mrs. Johnson said a team of doctors was unable to find a reason for the illness.

"Since we quit drinking the water, she hasn't been quite as bad. I want to know if it's the water causing it or what," Mrs. Johnson said.

Mrs. Johnson and Mrs. Sterling said they were not sure whether they would be willing to go through with the biopsy test to see if the chemicals were still in their bodies.

"It makes me sick to think about it. I don't think it would be worth the misery," Mrs. Sterling said.

WATER QUALITY control officials said the following chemicals were found in the Sterling and Boyd wells: naphthalene or azulene (cyclopentacycloheptene), methyl naphthalene, chlorobenzene, dicyclopentadiene, tetrachloroethylene, hexachloroethane, toluene, hexachlorobutadiene, hexachloronorbornadiene, tetramethyl benzene, dimethyl-ethyl benzene and trimethyl benzene.

Kathy Haunninen of the Memphis Poison Control Center said data is sketchy or nonexistent as to what effects the chlorinated hydrocarbons will have in drinking water.

She said, however, that symptoms from direct exposure range from irreversible damage to the kidney and liver, headaches and fatigue to cancer in laboratory rats.

EPA legal advisors confirmed that Velsicol is in court over pollution cases in Texas, Illinois and Memphis.

A civil case in Texas involves the runoff of leptophos, a chemical which workers at the Velsicol plant there claim has caused extensive nerve damage, an EPA attorney in Washington said.

The case is still pending in Houston's federal district court, she said.

In December, six top Velsicol officers in Chicago were indicted by a federal grand jury for concealing from EPA the results of some tests of chlordane and heptachlor, which caused cancer in rats, the attorney added.

In Memphis, Velsicol was charged with discharging endrin and heptachlor, pesticides, into the Mississippi River in excess of EPA permit limitations. The company was found to be liable for the discharge and the company awaits a decision by the court and a possible fine of up to $10,000 for each day they were in violation, EPA added.

Many Unanswered Questions Over Tainted Wells

5/10/78

For eight years, a Memphis chemical company hauled its pesticide-production wastes 50 miles to an isolated spot in northwest Hardeman County.

Each day several truckloads of metal drums holding the chemicals were dropped into narrow, 15-foot-deep trenches and buried. As each trench filled, a new one was dug. In that way, it's estimated that eventually 300,000 barreis were deposited totaling 16.5 million gallons of pesticide-related chemicals.

FROM THE OPERATION'S earliest days, residents nearby complained of eye-watering odors. Yet it wasn't until 1972 that the state finally ordered the dumping stopped.

The Jackson Sun's copyrighted story today on Page 1 is the first public report of what state Water Quality officials believe to be pesticide contamination of private water wells near the chemical dump. They say their preliminary investigation indicates that undetermined quantities of the buried chemicals have begun moving off the 242 acres of property owned by Velsicol Inc. Company officials say they don't believe their chemical wastes are responsible for the contamination.

So far, only two wells serving about 25 persons have been shown to have traces of 12 assorted chemicals in tests conducted by the state Division of Water Quality. Another 14 wells are suspect, with tests from them still uncompleted. About 20 families draw their water from those wells.

THE INVESTIGATION, initiated four months ago, is in its early stages. Water Quality and state health officials are careful not to be alarmists, which is an appropriate attitude for them to assume.

But at least in one respect they've been too cautious.

It ought to be obvious that fear and confusion build in an atmosphere of insufficient information. Yet despite what should be a clear need to meet with each family to discuss the progress of the investigation and to advise what precautions need to be taken, many residents have yet to be approached by anyone in authority. All they know — much of it rumors — is what they've heard from neighbors or relatives.

MEANWHILE, ALTHOUGH a disquieting number of persons have complained of unexplained illnesses — including paralysis and numbness of the hands and feet — no one from the county health department or any other medical agency has attempted to inquire into the extent or nature of the complaints. Not one doctor, although several have conducted tests on at least four of the sufferers, has been contacted by state health officials.

Asked why not, one health officer said he didn't think such investigation was warranted. Before proceeding further, he said, he is making a computer-assisted "document search" of studies into pesticides to determine, among other things, what the symptoms of exposure are and whether tests are available to indicate presence of the chemicals in the human body. A reporter for The Jackson Sun made two long-distance calls and came up with that information in a few minutes.

Meeting with these people to discuss the situation — and, it's hoped, to allay fears — ought to be an immediate action taken by both Water Quality and health department officials. If they feel they lack the expertise, then they need to find the people who can speak with

authority and who will attempt to answer the residents' questions.

A nearby school would be an appropriate place to hold such a meeting.

IN THE MEANTIME, every effort needs to be made to speed up the investigation and to come up with solutions to the contaminated well water. At the very least, piped-in water appears to be mandatory. These people cannot reasonably be expected to continue to bathe, wash their clothes and cook in the polluted water while hauling bottles of drinking water much longer.

There's still much to be learned about how far the chemicals can be expected to spread as the metal drums break down. Moreover, the feasibility of removing the waste chemicals needs to be seriously studied.

Those questions are two of many that need to be answered in coming months.

The Jackson Sun

An independent newspaper established April 9, 1848. Published daily except Saturday by The Jackson Sun, Inc.; 245 West Lafayette St.; Jackson, Tenn.; 38301.

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8 Toone-Teague Residents Tested For Poison

5/16/78

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Eight Toone-Teague Road residents were tested in a neighbor's home Monday to see if traces of 12 toxic chemicals found in two community wells have remained in their blood and urine.

Results of the tests should be available within five weeks, said Dr. B. D. Hale, Hardeman County health officer, who hand-carried the samples to the Memphis-Shelby County Health Department for analysis Monday.

HALE ADVISED about 50 area residents who gathered not to drink or cook with their well water until results of water quality tests on about 13 area wells taken more than a week ago are available.

The doctor performed medical tests Monday after several of the residents complained of persistent illnesses which they fear are the result of ingestion of chlorinated hydrocarbons, fat-soluble chemicals found in the Woodrow Sterling and John Boyd wells.

Several residents Monday told Hale that since November they have experienced persistent dizziness, numbness in their limbs, paralysis, shortness of breath, flaky skin, sore throats and strep throat, headaches, high fever and vomiting green-colored phlegm.

A Memphis poison center spokesman has said direct exposure to the chemicals could cause kidney, liver and nerve damage, even cancer, over a long period of time.

HALE TOLD Toone-Teague Road residents, however, not to be alarmed because no one chemical was found in a higher ratio than two parts per billion of well water in either the Sterling or the Boyd well.

"It is my opinion that this is too small to cause many health problems," Hale told the rural residents who crowded into the Sterlings' tiny living room. "But none of these (chemicals) are recommended for human consumption."

State water quality control officials say they suspect the chemicals to be coming from a 242-acre landfill owned by Memphis-based Velsicol Chemical Corporation. Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in 15-foot trenches there.

Local residents say they saw many of the about 300,000 barrels buried in the dump were thrown into the ditches without lids and the toxic materials could be seen in two-foot puddles in the ground.

IN 1972, Velsicol was ordered by state Department of Public Health Commissioner Eugene Fowinkle to stop the dumping and the company began burning its wastes out of state, a company spokesman said.

State health officials and Environmental Protection Agency engineers, in separate tests, concluded in March that the water supplies contain the chlorinated hydrocarbons.

Yet Velsicol Plant Manager Charles Hanson contends there is no proof that the pollutants are coming from the dump site. The state gave the company until Sunday to come up with long-term and short-term solutions to the pollution problem.

Hanson said Friday and in a response to water quality control officials early this week, however, that

the company will assume no responsibility for the chemicals in the wells until water quality officials can prove a link between the pollution and Velsicol.

WAYNE MAX, environmental engineer for the Department of Public Health, Water Quality Control Division, said Monday his division will not respond to Velsicol's reply until he receives the results of samples from about 13 other wells taken last week.

The samples include several from the Toone city water system. "We don't feel there will be anything found in Toone," Max added.

Toone-Teague Road residents, in the meantime, are concerned about persistent illnesses and abnormalities that they fear could be the result of drinking contaminated well water.

These residents have been pleading with water quality officials since November to do something to improve the quality of their water. That is when they noticed a peculiar odor and taste in the water from the Boyd and Sterling wells.

About a month ago, Max advised the nine families who use the Boyd and Sterling wells not to drink the water. Neighbors who noticed an unpleasant taste and odor in their well water also were advised not to drink that water.

MOST RESIDENTS of the rural Hardeman County community have complied. Others are still drinking the suspect water pending results of the latest state tests, they claim.

Many residents complaining of unexplained illnesses have consulted their doctors. Others have been hospitalized. But the doctors have been unable to either link the illnesses with the chemicals or find medical evidence for the illness.

Faye Brooks, 33, Toone-Teague Road resident, said late last year she lost the use of her left hand. "These two fingers were numb," she told Dr. Hale, extending her index and middle fingers. "I couldn't even hold this cigarette case then."

Mrs. Brooks said her doctor in Jackson suspected she had a fractured disc in her spine. After undergoing spinal tests for that ailment, however, the doctor could find no rupture, Mrs. Brooks told Dr. Hale.

THE HAND becomes numb now a couple of times a week, she said. "I haven't been able to breathe good, either," she noted, and she said her skin has been unusually dry and scaly.

Pat Johnson, 32, said she and her family have had an unusual number of headaches.

Her 14-year-old daughter, Pamela, missed one month of school and was hospitalized at LeBonheur Children's Hospital recently because of persistent shortness of breath, coughing and vomiting green phlegm.

In February Mrs. Johnson said she began boiling her water, hoping to destroy impurities, but was told by Hardeman County Environmentalist George Wallace that boiling only made the chemicals stronger.

Drinking her water makes 29-year-old Gail Phillips "feel like I want to throw up," she said. She has been to the doctor several times for severe chest pains for which the doctor has been unable to find a cause.

MRS. PHILLIPS' daughter, Sheila, 8, has had an unusual number of high fevers since November, her mother said. Many nights her temperature rose to 104 degrees, her mother said.

In October, young Sheila had her tonsils taken out, but her sickness persisted and she continued vomiting often, Mrs. Phillips said.



Sun Photo By Sue Ann Tanzer Roberts

Blood and urine sampling in the home of Woodrow Sterling was quite an attraction for a number of children who were taken out of school Monday morning to talk to Dr. B. D. Hale about possible effects of 12 chlorinated hydrocarbons found in their water. They watch as Dr. Hale, Hardeman County health officer, takes a blood sample from John Boyd, first resident of the Toone-Teague Road to notice a peculiar taste and odor in his well water.

Ethel Boyd, in whose well the chemicals were first detected, said she has experienced dizziness, a sick stomach and headaches for months. The symptoms have lessened considerably since she stopped drinking her water about a month ago, she told Dr. Hale.

Besides the blood and urine samples, Dr. Hale took a small plastic bag full of white powder that Boyd says was left in a cooking pot after the water had evaporated away. He also took a sample of oily scum from the back of one resident's commode, which the resident suspects is chemical residue.

Until the water pollution can be resolved, the Jackson National Guard unit has been supplying water from Toone wells in a 500-gallon tank to Toone-Teague Road residents.

Toone City Water OK; 3rd Well Bad

5/18/78

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — No contaminants were found in Toone city wells tested more than a week ago, a state water quality control official said this morning.

Wayne Max, environmental engineer for the Department of Public Health's Division of Water Quality Control, said, however, that 11 toxic chemicals were found in a third community well on Toone-Teague Road.

THE WELL, owned by Pat and Daniel Johnson, is between the homes of John Boyd and Woodrow Sterling, in whose wells the contaminants were found in January.

"It sounds good to me," Wayne Max, environmental engineer for water quality division, said of Toone's pure water.

Nevertheless, he said it is disturbing that the same 11 chlorinated hydrocarbons found in the Boyd and Sterling wells are present in the Johnsons' well.

The Johnsons' 14-year-old daughter, Pamela, was one of several area residents who had blood and urine tested for possible lingering chemicals Monday. The youth complained of shortness of breath, coughing and vomiting green phlegm.

She was taken to LeBonheur Children's Hospital in Memphis months ago when the family learned its well might be contaminated. A team of doctors at the hospital could not explain her symptoms.

Results of blood tests of Miss Johnson and others sampled Monday have not been obtained, Dr. B.D. Hale, Hardeman County health officer, said this morning.

STATE WATER quality control officials say they suspect the chemicals come from a 242-acre chemical dumping ground owned by Velsicol Chemical Corporation of Memphis.

Between 1964 and 1972, about 16.5 million gallons of the chemicals were buried in 15-foot trenches there, a company spokesman has confirmed. Area residents say many of the barrels were thrown into the ditches without lids and the toxic materials could be seen in two-foot puddles in the ground.

Velsicol stopped dumping in the rural Hardeman County site when it was ordered to stop by state Department of Public Health Commissioner Eugene Fowinkle.

Waste chemicals have since been burned out of state, said Velsicol plant manager Charles Hanson. Hanson contends there is no proof that the pollutants are coming from the dump site.

Environmental officials gave Velsicol until Sunday to come up with some long- and short-term solutions to the pollution problem.

The company says it will discuss solutions when water quality officials can prove the company is responsible for the ground water contamination.

WATER QUALITY officials are taking a wait-and-see attitude to Velsicol's response until all water, blood and urine samples are tested and the results are available.

In the meantime, Toone-Teague Road residents continue to complain of unexplained illness and say they cannot understand why it has taken since November, when the first residents complained of a peculiar taste and smell in their water, for officials to solve their water problem.

About 50 residents of the road came to have their blood and urine tested at a neighbor's home Monday, but only three persons who had had the most persistent exposure to the chemicals were tested by Dr. Hale.

The results of the tests, being analyzed by the Memphis-Shelby County Health Department, should be available within a few days, Dr. Hale said.

Hale advised the residents Monday not to drink or cook with their well water until tests of eight other wells are complete. They still use the water for bathing, washing dishes and other purposes, however.

SEVERAL RESIDENTS Monday told Hale that since November they have experienced persistent dizziness, numbness in their limbs, paralysis, shortness of breath, flaky skin, sore throats and strep throat, headaches, high fever and vomiting green-colored phlegm.

The residents fear the symptoms are the result of drinking the fat-soluble chemicals.

Many residents complaining of unexplained illnesses have consulted doctors. Others have been hospitalized. But the doctors have been unable either to link the illnesses with the chemicals or find medical explanations for the illnesses.

A MEMPHIS poison center spokesman has said direct exposure to the chemicals could cause kidney, liver and nerve damage, even cancer, over a long period of time.

Hale told residents Monday, however, not to be alarmed because no one chemical was found in a higher ratio than two parts per billion of well water in either the Sterling or the Boyd wells.

He told residents he did not believe that such small concentrations of the chemicals could cause many health problems, but that none of the chemicals is recommended for human consumption.

Hale said scientific knowledge of the long-term effects of drinking chemicals in well water is sketchy and that little research has been done about the effects of the chemicals ingested in combination with each other.

Spokesmen Dispute Link To Toone Water Problem

Seepage From Dump 'Improbable:'

By SUE ANN TANZER ROBERTS
Sun Reporter

MEMPHIS — Two top officials of Velsicol Chemical Corp. of Memphis said Friday it is "highly improbable" that 11 chemicals found in Toone-Teague Road wells came from the company's nearby landfill.

Based on Velsicol's own investigation, 11 chemical compounds — at least 10 of which were placed in the dump between 1964 and 1972 — were found in the wells of area residents Woodrow Sterling and John Boyd.

THESE ARE the same 10 chemicals found by state water quality control officials in their tests in April and May.

Velsicol Plant Manager Charles Hanson said a 60-foot gully separates the wells from the dump site. This gully would prevent the chemicals from flowing into the local water supply, he said.

Hanson said he does not know whether the chemicals could have leached into the local residents' water table. A 1967 report issued by the United States Geological Survey indicates that seepage shouldn't have happened, he noted.

The compounds couldn't have come from the landfill area as more than 11 chemicals were buried and traces of the other should have been found in the tests if the chemicals came from the site, Hanson said.

If the chemicals did not come from the dump site, Hanson was asked where they did come from.

"THERE'S A lot of speculation where they could be coming from. I think the general population is beginning to draw some conclusions. I don't think at this time I really want to get into that," Hanson said.

"I can say now I don't believe it's coming from our dump site," he added.

The Boyds and Sterlings live about one-half mile from the company's 243-acre dump site, where during the eight-year period about 16.5 million gallons of chemicals were buried in 15-foot trenches, water quality officials say.

Hanson said Friday water samplings made by the company April 26 and May 2 show three wells (located between the dump and Sterling's and Boyd's wells) free of the 11 chemicals found in the two polluted wells.

Hanson attributed the foul smell and taste of the contaminated well water to small amounts of manganese, iron and sulfides which he said Velsicol and a private Memphis laboratory, Ramcon, Inc., found in several area wells in their own tests. Neither the state nor Environmental Protection Agency reported those chemicals when they analyzed the water.

MANGANESE, an element which normally appears in water, Hanson said, was found at four times the acceptable level in the Boyd well.

He said the presence of manganese might explain a demonstration by one local resident, Ethel Boyd, who found that water standing in her kitchen sink turned brown when bleach was poured into it.

14 The Jackson Sun, Jackson, Tennessee, Sunday, May 21, 1978

Velsicol Disputes Contamination Link

Hanson said the company is concerned about the pollutants found in the Boyd and Sterling wells, but said the company is not prepared to do anything about it until water quality officials can link the pollution to the chemical dump.

Last week state water quality officials revealed that the well of Pat and Daniel Johnson had traces of 12 chlorinated hydrocarbons. The Johnsons live between the Sterlings and the Boyds.

ACCORDING TO Hanson, Velsicol did not sample the Johnson well.

Hanson said it "baffles" him how the chemicals could be in the Sterling and Boyd wells and not in some of the wells closer to the dump site.

> "I don't believe speculation really benefits anything. The story of how it (the chemicals) got there is not going to break right away. Don't hold your breath," Hanson told a group of reporters in Memphis Friday.

Several area residents have claimed the drums containing the toxic chemicals were haphazardly dumped into the trenches and many of the drums had no lids. They say they saw raw chemicals in the ditches two feet deep in places.

"It would not have mattered how the drums were put in the trenches. The drums only have a two-year life span," Hanson said. It was the company's understanding at the time of the dumping that the chemicals would pose no pollution hazard, he noted.

FOR THREE weeks, Army National Guard and Civil Defense personnel have been delivering fresh water to the community in a 500-gallon drum. Many residents continue to bathe and wash their dishes in the contaminated water, however.

Three residents who had been drinking the water the longest had their blood and urine tested last week by Dr. B. D. Hale, Hardeman County health officer.

Hale said Friday small amounts of three pesticide-related compounds were found in the blood of all three Toone-Teague Road residents.

The health officer said, however, that Memphis-Shelby County lab technicians were asked

to look for five chlorinated hydrocarbons that were found in the water in late December in the Sterling and Boyd wells and never found again.

Hale has said the tests could have little meaning since the chemicals were found in the water in such small quantities and were not the same chemicals found in two tests after the December test.

HALE SAID small levels of the three pesticide-related chemicals ranged between .5 and 100 parts per billion parts of blood.

"These are extremely small amounts and are well within the range known to be present in most of the general population in the United States," Dr. Hale said. "They are not, at these levels, expected to be related to ill effects."

Several residents Monday told Hale that since November they have experienced persistent dizziness, numbness in their limbs, paralysis, shortness of breath, flaky skin, sore throats and strep throat, headaches, high fever and vomiting green-colored phlegm.

The residents fear the symptoms are the result of drinking the fat-soluble chemicals.

MANY RESIDENTS complaining of unexplained illnesses have consulted doctors. Others have been hospitalized. But the doctors have been unable either to link the illnesses with the chemicals or find medical explanations for the illnesses.

A second set of blood samples from the same three residents tested last week are being held for Hale by the state toxicology laboratory until an effective testing method for the 12 chemicals found in the well water can be found, the health officer said.

Hale said he has learned from several regional and federal environmental agencies that substances found in the water are in "extremely low concentrations."

"At this point, information does not indicate a definite health hazard from these chemicals at these concentrations, Hale said.

Hale is also working with the Disease Division of the Communicable Disease Control section of the state health department to develop a questionnaire for area residents on water consumption and illness history.

The questionnaire is expected to reveal more comprehensive information than received in recent oral interviews with area residents, Hale said.

10 The Jackson Sun, Jackson, Tennessee, Wednesday, May 24, 1978

12 Toxic Chemicals Discovered In Fourth Toone Well

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Twelve toxic chemicals have been found in a fourth well, just south of three other polluted wells, on the Toone-Teague Road, state water quality control officials revealed this morning.

Water quality officials say they are not sure what effects the small quantities of the chemicals will have in drinking water, but they have taken the precaution of advising local residents not to drink their well water.

Officials say they will draw no conclusions about a possible movement of the contaminants until results of tests of nine other area wells are available from the state lab.

Elmo Lund, director of the state Division of Water Quality Control, said this morning he does not know when the other nine test results will be ready. "It's a very, very complex procedure. It takes time," he said.

State water quality control officials say they suspect the chemicals are coming from a 243-acre chemical dumping ground owned by Velsicol Chemical Corp. of Memphis.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches there, a Velsicol company spokesman has confirmed.

Area residents claim many of the barrels were thrown into the ditches without lids and that toxic materials could be seen in two-foot puddles in the ground.

Velsicol officials say there is no proof that the chemicals are coming from the nearby dump site and argue that a 60-foot gully separating the wells from the dump would have kept the chemicals away from the local water supply.

"The theory is credible," Terry Cothran, assistant director of the Division of Water Quality Control in Nashville, said this morning.

Velsicol Plant Manager Charles Hanson said independent water samples taken by the company showed the presence of 10 chemicals in the wells of John Boyd and Woodrow Sterling. They were 10 of the 12 chemicals found in the Boyd and Sterling wells by state water quality researchers.

Hanson added that he could not understand how traces of other chemicals buried at the dump site did not show up in chemical analyses if, in fact, the chemicals came from the dump.

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Until the other nine water samples are available and an awaited report by the U. S. Geological Survey is complete, Lund said his department will take no action to find out the origin of the chemicals.

"We need a professional geological opinion," he said.

If other water tests are positive, Lund said he will immediately set up a meeting with Velsicol, USGS and water quality officials to discuss the problem. Further exploratory drilling to determine where the chemicals are coming from may then be necessary, he said.

For more than three weeks, Army National Guard and Civil Defense personnel have been delivering fresh water to the community in a 500-gallon drum. But many residents continue to bathe and wash their dishes in the contaminated water.

Blood tests of three residents who had been drinking the water the longest revealed small traces of three pesticide-related compounds, said Dr. B. D. Hale, Hardeman County health officer.

He noted, however, that Memphis-Shelby County lab technicians were asked to look for five chlorinated hydrocarbons that were found in the water in late December in the Boyd and Sterling wells and never found again.

Water quality officials have since found 12 chlorinated hydrocarbons in the Boyd, Sterling, Pat and Daniel Johnson and Boyd Frye wells. The Johnson well is between the Sterling and Boyd wells, and the Frye well is south of the Sterling, Johnson and Boyd wells.

Meanwhile, many residents of the rural Hardeman County area are complaining of unexplained illness and a foul taste and odor in their well water.

Several residents have told Dr. Hale they have experienced persistent dizziness, numbness in their limbs, paralysis, shortness of breath, flaky skin, sore throats and strep throat, headaches, high fever and vomiting green-colored phlegm.

The residents fear the symptoms are results of drinking the fat-soluble chemicals.

Many residents complaining of unexplained illnesses have consulted doctors. Some have been hospitalized.

But the doctors have been unable either to link the illnesses with the chemicals or find medical explanations for the illnesses.

Velsicol attributes the foul taste and odor to unusually high levels of manganese found in the water in their independent lab tests.

Manganese, an element which normally appears in water, Hanson said, was

found at four times the acceptable level in the Boyd well.

"The manganese doesn't concern me at all," said Cothran, assistant director of the Division of Water Quality Control in Nashville.

Manganese can give a taste and possible odor problem, but it has no effect on the body in such small concentrations as found in the Boyd well.

"The fact that there's manganese in the water is really of no consequence. The water's still not recommended for drinking even if we got rid of the manganese," he added.

4 The Jackson Sun, Jackson, Tennessee, Friday, May 26, 1978

Toone-Teague

Permanent Water Supply Top Priority

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — A Nashville engineering company has put top priority on finding a permanent water supply for Toone-Teague Road residents in whose water 12 toxic chemicals have been found.

For about a month, Civil Defense and Army National Guard employees have supplied about 35 residents with fresh water after chemicals were found in four community wells by state water quality control officials.

"What we will try to do is to determine whether it is feasible for the City of Bolivar to furnish water to this area. The city has indicated that it is willing to help out if it's economically feasible," said Robert S. Miller of Robert S. Miller and Co. of Nashville.

Miller said he hopes to have the study complete at the end of next week.

His enginners will study the distance to the nearest water line, the amount of pipe needed and facilities necessary to get the water to the rural Hardeman County area, he said.

"If there's a health hazard, I'm certainly concerned about it," noted Miller, whose firm is retained as consulting engineers for Bolivar.

If the study proves it is economically feasible to bring water from Bolivar, the company will present its plan to the Farmers Home Administration, then to the Bolivar City Council for approval, Miller explained.

J. D. Beaty, Farmers Home Administration chief of community programs for Tennessee, said Thursday afternoon he was asked by state water quality officials what FmHA could do for Toone-Teague Road residents.

It was Beaty who contacted Miller.

"We are concerned with the pollution of water anywhere. That's what the Farmers Home Administration is for — to help rural people," Beaty explained.

Beaty said he has instructed Miller to secure some rough cost estimates.

"I'm sure the City of Bolivar will be interested in running water out to these people if it's a feasible project. The city would have to issue bonds which would be paid back by the water users over there," Beaty said.

FmHA presently has loans to more than 300 municipalities, utilities and non-profit associations throughout Tennessee, Beaty noted.

Terry Cothran, assistant director of the state's Division of Water Quality Control, said Thursday that supplying fresh water from a local municipality is simply "a matter of working out the details."

Fred Kessler, manager of the Bolivar Gas and Water Department, said he is waiting for Miller to supply the city with cost estimates before saying whether the city would extend its water lines.

"It's very possible the city could be more involved in the future. If the people over there want it and the engineer thinks it's feasible, we have plenty of water and we need to sell it," Kessler said.

State water quality control officials have said they suspect chemicals found in the four community wells to be coming from a 243-acre chemical dumping ground owned by Velsicol Chemical Corp. of Memphis.

The dump is within a mile of the wells found to be polluted, a company official confirmed.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches there, the company spokesman said. Area residents claim many of the barrels were thrown into the ditches without lids and that toxic materials could be seen in two-foot puddles in the ground.

Velsicol officials say there is no proof that the chemicals are coming from the nearby dump site.

Area residents have complained of unexplained illnesses they fear are linked to polluted water.

Who Will Pay For Piped-In Water?

Whether the score of families on Toone-Teague Road will be able to have water piped in from Bolivar won't be known for several days. A story on page 4 today details newest developments in the community's plight over its contaminated well water.

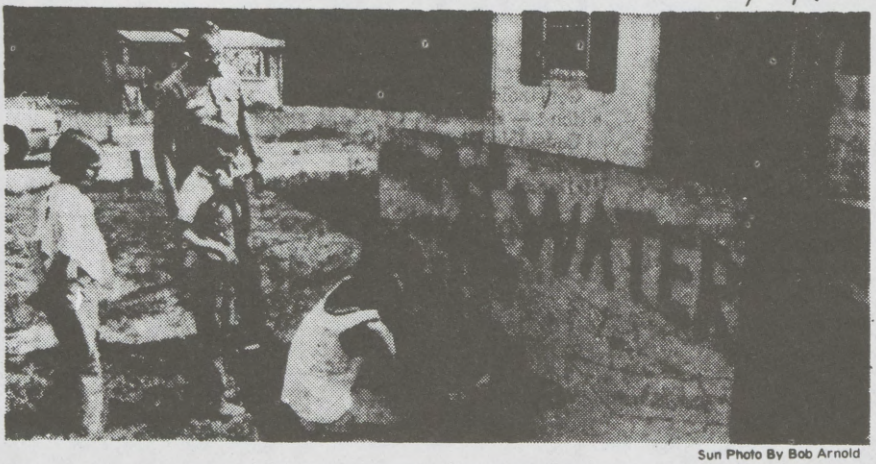
Nearly as important as whether they can get potable water is the matter of who will pay for it.

It's probably beyond reasonable expectations for these families to bear the cost of piping in water the seven or so miles from Bolivar. Many of the families are poor and on fixed incomes. Even with a long-term, low interest loan from the Farmers Home Administration the cost will likely be prohibitively high.

It falls to Hardeman County, the state or both to take on most of the financial burden of supplying the water at least until it can be proven who's responsible for the contamination, assuming fault can be shown. Then it should be the guilty party who foots the bill for permanently providing the residents drinkable water.

Just as no one would think of charging the Toone-Teague residents for the emergency drinking water and other services now being supplied them, neither should the cost of permanent correction of the damage to their water supply be placed on their shoulders.

5/28/78



Sun Photo By Bob Arnold

Danny Maness, 16, paints a message outside a house on Toone-Teague Road vacated by the Donald Collins family last week. The family was one of several advised to stop drinking water from a well owned by Woodrow Sterling after toxic chemicals were found in the water supply several weeks ago. At left are Sterling and his children, Vickie, 8, and Tracy, 10.

Fifth Toone Well Polluted

TOONE — State water quality control officials have determined a fifth well on the Toone-Teague Road to be polluted.

Terry Cothran, assistant director of the state Division of Water Quality Control said Friday that analytical results indicate substances in the Carol Frye well were similar to those found in four other wells in the same area.

Ms. Frye has been advised not to drink water from the well, Cothran added.

The latest polluted well lies between the wells of Boyd Frye and John Boyd, which were earlier determined to contain 12 toxic chemicals, Cothran said.

He said six other wells are being tested, and preliminary results indicate some chemicals in the water. Quantitative tests are being done to determine the levels of the chemicals. State water quality control officials have said they suspect the chemicals in the polluted wells to be coming from a chemical dumping ground owned by Velsicol Chemical Corp. of Memphis, where about 16.5 million gallons of chemicals were buried in metal drums between 1964 and 1972.

Velsicol officials say there is no proof that the chemicals are coming from the nearby dumping site and argue that a 60-foot gully separating the wells from the dump would have kept the chemicals out of the local water supply.

Blood tests of three residents who had been drinking the water the longest revealed three pesticide-related compounds, Dr. B. D. Hale, Hardeman County health officer, has reported.

The blood samples were tested for five chlorinated hydrocarbons found in two of the wells in late December and never found again, Hale said, however.

Many residents of the rural area have complained of unexplained illnesses and a foul taste and odor in their well water. The residents say they fear the symptoms are a result of drinking the chemicals in their water.

Doctors have been unable to link the illnesses with the chemicals or to find medical explanations, and Velsicol attributes the foul taste and odor to unusually high levels of manganese found in the water in their independent lab tests. Manganese has no effect on the body in the concentrations found in the wells, officials say.

Toone

Class Action Suit Planned By Residents

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Residents of Toone-Teague Road have hired an attorney to file a class action lawsuit against Velsicol Chemical Corp. of Memphis, whose nearby chemical landfill they believe has polluted five community wells.

Christine Sterling, in whose well the chemicals were found in January, said she is not sure when the suit will be filed.

FOR MORE THAN a month, Civil Defense and Army National Guard employees have supplied about 35 residents with fresh water after 12 toxic chemicals were found in four of the wells by state water quality control officials.

Velsicol Plant Manager Charles Hanson has said there is no proof that the chemicals are coming from the nearby dumping site and argues that a 60-foot gully separating the wells from the dump would have kept the chemicals out of the local water supply.

Meanwhile, residents of the rural Hardeman County community have started to raise money to hire a chemical engineer to analyze their well water and find the origin of the chemicals, Mrs. Sterling said.

Money is also being raised to hire a doctor to determine what the chemicals could do to the residents who have consumed them in their drinking water for months before the water was deemed polluted, she noted.

"WE'VE GOT TO have water out here," Mrs. Sterling said this morning. "I on't know what else to do. We're just grasping at straws, you might say."

Information collected by the independent engineer

and doctor will constitute evidence to be presented in the forthcoming lawsuit, Mrs. Sterling explained.

The fund is necessary because many residents of the Toone-Teague Road are elderly or at the poverty level and are unable to defend themselves against this growing pollution problem, she said.

"We have got to prove that Velsicol is at fault here. We have got to prove that it's their chemicals," Mrs. Sterling said.

She urges anyone interested in helping her neighbors to send their contributions to the Teague Water Fund, P.O. Box 84, Toone, Tenn. 38381. An escrow account to pay the professionals has been set up at Merchant Planters Bank in Toone.

A NASHVILLE engineering company, Robert S. Miller and Co., has put top priority on finding a permanent water supply for the residents. The cost feasibility study is expected to be complete this week, Robert S. Miller, owner of the company said late last week.

His engineers will study the distance to the nearest water line, the amount of pipe needed and facilities necessary to get the water to the rural Hardeman County area, Miller said.

If the study proves it is economically feasible to bring water from Bolivar, the company will present its plan to the Farmers Home Administration, then to the Bolivar City Council for approval, a state official said.

Blood tests of three residents who had been drinking the water the longest revealed three pesticide-related compounds, Dr. B.D. Hale, Hardeman County health officer, has reported.

Toone-Teague Might Not Get Bolivar Water

6/6/78

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — At least 350 new water customers need to be recruited before it is economically feasible to supply Toone-Teague Road residents with pure Bolivar city water, an engineering study has revealed.

Customers would have to be recruited by Toone area residents in whose wells toxic chemicals have been found by state water quality control officials, said Robert S. Miller, Bolivar's Nashville-based engineer whose staff conducted the study.

J.D. BEATY, Farmers Home Administration chief of community programs for Tennessee, said the work is only feasible if 100 percent of the residents in the Toone, Teague and Medon areas took advantage of the line and if FmHA is able to secure a 50 percent grant for the project.

There are about 350 houses in the area, but it is always difficult to get every resident to subscribe to water service, Beaty said.

Beaty said Monday that it will cost about $800,000 to extend the water line and to erect an elevated tank to serve the area with fresh water from Bolivar. Beaty said he knows of no available funds through FmHA at this time for the project, but that he has notified the FmHA national office to search for necessary matching funds.

To extend the line, however, new customers must be recruited, and Miller says that's the job of the affected residents.

"IT'S UP TO the people out there to organize themselves. There seems to be an interest down there to get water. It really depends on the individuals whether they get it," Miller said.

The engineer said his staff studied the distance to the nearest water line, the amount of pipe needed and facilities necessary to get the water to Toone-Teague Road residents.

The study, requested by water quality control officials, was designed to see whether the line was economically feasible, Miller added.

Fred Kessler, manager of the Bolivar Gas and Water Department, said his department would only be able to help the residents get city water if a FmHA grant was available. Even then, the matter would have to go before the Bolivar City Council for final approval.

State water quality control officials have said they suspect chemicals found in community wells to be coming from a 243-acre chemical dumping ground owned by Velsicol Chemical Corp. of Memphis.

THE DUMP IS within a mile of the wells found to be polluted, a company official confirmed.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches there, the company spokesman said. Area residents claim many of the barrels were thrown into the ditches without lids and that toxic materials could be seen in two-foot puddles in the ground.

Velsicol officials say there is no proof that the chemicals are coming from the nearby dump site.

Area residents have complained of unexplained illnesses, but their doctors have been unable to link the illnesses with the chemicals found in the drinking water.

In the meantime, about 35 residents of the Toone-Teague Road have hired an attorney to file a class action lawsuit against Velsicol, whose buried chemicals they believe have polluted at least five community wells.

THE RESIDENTS ARE raising money to retain a chemical engineer, to analyze their well water to find the origin of the chemicals, and a doctor, to determine what the chemicals could do to the residents who have consumed them in drinking water for months before the water was deemed polluted.

The fund, which is being held in an escrow account at Merchants and Planters Bank in Toone, totaled $1,642.

The community also plans a fund-raising dance at 7 p.m. June 17 at the Teague baseball field when there will be dancing and refreshments, said Christine Sterling, area resident who is coordinating the event.

Thursday, June 8, 1978

News Improves In Well Woes

Toone-Teague Road residents can take heart in the latest hope for help in solving the plight they face with their contaminated well water.

A fortnight ago, those residents were told Bolivar's water supply might be tapped to provide a permanent alternate supply of drinking water. The residents have lost their private wells to a yet-undetermined source of 12 assorted pesticide-related chemfcals.

The Bolivar hope later was all but dashed when engineers determined it would cost approximately $800,000 to lay about seven miles of pipe and to construct a pumping station.

Even with a possible Farmers Home Administration grant of 50 percent, the price would be out of reach for the score of families affected by the spreading contaminants.

So why not supply water from nearby Toone? The question came from The Jackson Sun; the answer is supplied on Page 1A today from the state Division of Water Quality and Toone government officials.

From a supply standpoint, the idea is plausible. Toone water is healthy and ample. The community water department officials are willing. And the distance from Toone to Toone-Teague Road is less than half the distance from Bolivar. Engineers for the water company have appraised the approximate cost of supplying Toone water ct $125,000 to $200,000.

The cost, then, is much lower and quite a bit more within reach compared to the Bolivar connection.

Meanwhile, in a related upturn in the news, a representative of the Department of Housing and Urban Development says there just might be emergency funds available to the residents.

Before Wednesday, inquiries by the Sun to officials in Nashville, Atlanta and Washington turned up nothing but pessimism on the possibility of emergency funding. One EPA official explained that, typically, federal disaster aid comes in response to a devastating "act of God." Pollution from man-wrought chlorinated hydrocarbons apparently doesn't qualify, although the people lost their water as surely as if an earthquake had destroyed their wells.

Nevertheless, the Knoxville HUD official now expresses some optimism that emergency funds might be found.

Obviously, U.S. taxpayers — should they be the source of a grant — would be better off supplying total funding for water from Toone than if they paid half the cost of supplying water from Bolivar. With either type of funding, it's apparent the Bolivar plan should be dropped.

As to whether the stricken families deserve half, total or no emergency financial assistance, it boils down to a matter of fairness and social responsibility.

The contaminants are not the fault of the Toone-Teague residents, and thus it shouldn't be their responsibility to solve the water problem.

On the other hand, one of the important reasons people form communities and governments is so they can help or be helped in time of need. Since local, state and federal protections failed so miserably, it falls to government to help them out.

Pollution Relief

HUD May Help Toone-Teague Residents Find Fresh Water

By SUE ANN TANZER ROBERTS
Sun Reporter

Toone-Teague Road residents could have relief from their polluted drinking water within 40 days if it is officially deemed an "imminent threat" to health, a Department of Housing and Urban Development official said Wednesday.

Glen Strange, director of HUD's division of community planning and development in Knoxville, said even though a special $500,000 emergency fund was used in Waverly, the department probably could find money to help residents.

FOR ABOUT two months, Civil Defense and Army National Guard employees have supplied about 35 residents of Toone-Teague Road with fresh water after state water quality control officials found chlorinated hydrocarbons in five community wells.

Residents are seeking a permanent water supply.

Engineers from Toone and Bolivar have explored the possibility of running pipes from those city water systems.

Robert S. Miller, Bolivar's Nashville-based engineer, estimated it would take about $800,000 and 350 new water customers to make the project economically feasible from Bolivar.

TLM and Associates, Toone's Jackson-based engineer, estimated that to extend lines four miles from Toone would cost between $125,000 and $200,000, depending on whether an elevated water storage tank had to be erected.

BOLIVAR WATER officials say they would be glad to supply the water if a Farmers Home Administration grant were available. This would have to be approved by the Bolivar City Council.

A.E. Smith, Toone's mayor, said the town of 325 residents is concerned about the pollution, but could help only if HUD financed the project with a 100 percent grant.

"We have plenty of water, and we have good water. I'm looking for a grant. I'd like to take care of the people," Smith said.

The matter probably will be discussed at the next City Board meeting, Smith said, which will be at 7 p.m. Tuesday in Toone City Hall.

"It seems the problem would fit the criteria for the emergency funds that we have," Strange said. "We would first want at least a fairly good indication that we knew where it (the pollution) was coming from."

Residents whose wells are affected and state water quality control officials suspect the pollutants are from a 243-acre chemical landfill owned by Velsicol Chemical Corp. of Memphis.

Between 1964 and 1972 about 16.5 million gallons of toxic chemicals in about 300,000 metal drums were buried in 15-foot trenches, a company spokesman said.

VELSICOL Plant Manager Charles Hanson has said there is no proof the chemicals are coming from the dump site. He has said a 60-foot gully, which separates the site from the wells, would prevent chemicals from flowing into the water supply.

Thursday, June 8, 1978

HUD May Find Emergency Funds

A 1967 report issued by the U.S. Geological Survey indicates that seepage through the soil to the water table should not have happened, Hanson contends. The dump is within a mile of the polluted wells, he said.

Strange said he will be in Hardeman County area this week to survey the problem.

Terry Cothron, assistant director for the state division of water quality control, believes a definite "imminent threat" to health, which is required to get emergency funds, exists in the area

Cothron said his department has begun an investigation of where the contamination is coming from.

"We are looking at the possibility of enforcement action. Things are progressing," Cothron said.

Area residents continue to complain of unexplained illnesses, but doctors have been unable to link the illnesses with the chemicals found in the drinking water.

The Jackson Sun, Jackson, Tennessee, Monday, June 19, 1978 5

$1,000 Added To Pollution Funds

Toone-Teague Road residents raised more than $1,000 Saturday to use in their fight against pollution in several community wells.

Christine Sterling, spokeswoman for the rural Hardeman County community, said today about $1,045 was raised by local residents in a benefit featuring picnic foods and bands at the Teague Ball Park.

At one point during the day-long event about 500 people were in attendance, Mrs. Sterling said.

Community residents will add Saturday's proceeds to the Teague Water Fund to hire a doctor and a chemical engineer to further analyze their well water and the toxic chemicals found in five wells by state water quality control officials.

The residents need the doctor to determine what the chemicals could do to persons who have consumed the water.

Information gathered by the specialists is expected to be used to file a class action lawsuit against Velsicol Chemical Corp. of Memphis.

Residents say they believe the company's nearby chemical landfill is responsible for the pollution, but a plant spokesman denies there is any proof the chemicals are coming from the dump site.

For about two months, residents of the area have been supplied with fresh drinking water by the Civil Defense and National Guard while engineers from Bolivar and Toone have sought a permanent water supply.

Mrs. Sterling said the proceeds from the benefit will bring the fund to about $3,000, but, she said, "we feel like it is going to take a lot of money" to hire the professionals.

She said local residents are planning a second benefit next month when they will serve barbecue and all the trimmings.

Mrs. Sterling said all the food sold at Saturday's outing was donated by Hardeman County and Jackson merchants and distributors.

Additional money was raised through donations and the sale of photos made with actor Gene Evans, who lives nearby, she added.

The Jackson Sun, Jackson, Tennessee, Thursday, June 22, 1978 5

Toone-Teague: Health

Commissioner To Discuss Pollution In Bolivar

By SUE ANN TANZER ROBERTS
Sun Reporter

BOLIVAR — State Commissioner of Public Health Eugene W. Fowinkle announced Wednesday he will discuss the chemical pollution of wells on the Toone-Teague Road when he comes to Bolivar Wednesday.

A public meeting with the commissioner, Deputy Commissioner for Environment Robert H. Wolle and Deputy Commissioner for Medical Services David D. Allen is set for 2 p.m. Wednesday at Bolivar Electric Department.

For about two months, Civil Defense and Army National Guard employees have supplied about 35 residents of the rural Hardeman County area with fresh water after 12 toxic chemicals were found in five wells by state water quality control officials.

Ron Culberson, environmental coordinator for the department's Bureau of Environmental Health, said Wednesday the purpose of the meeting is to discuss the pollution problem with the residents affected by it.

Also invited to the meeting are representatives from Velsicol Chemical Corp. of Memphis, from whose nearby landfill residents believe the chemicals have seeped.

The dump is within a mile of the wells found to be polluted, a company official confirmed.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in the dump, the company has said.

The company has said there is no proof that the chemicals are coming from the nearby dumping site and argues that a 60-foot gully separating the wells from the dump would have kept the chemicals out of the local water supply.

Culberson said the department has been interested in the Toone-Teague Road area and its relationship with the dump since the 1960s.

"Some of our worst fears are being realized. That's the thing that's really concerning us," Culberson said. "There's a possibility this could affect all of West Tennessee."

The coordinator said the department needs to meet with residents now to see what specific steps can be taken by public officials to alleviate the problem.

In a report last week that analyzed water samples from five community wells, 17 chemicals were found by state water quality control officials. Concentrations varied between 41,000 parts per billion of one chemical to traces of others.

What these concentrations mean to the residents' drinking water, Environmental Engineer Wayne Max said he doesn't know.

Water quality scientists say effects from the chemicals ingested in small quantities in drinking water are unknown. Such research is an infant science, they say. Dangerous levels have not even been determined in most cases, they say.

Max said, however, there appears to be enough of a possible health hazard that the department has advised residents of the area not to drink their water.

Area residents have complained of unexplained illnesses, but their doctors have been unable to link the illnesses with the chemicals found in the drinking water.

In the meantime, area residents who are distressed that it has taken state officials too long to provide a permanent solution to their problem, are taking some matters into their own hands.

They have established the Teague Water Fund, which now totals more than $3,000 in contributions in an escrow account at Merchants and Planters Bank in Toone. Contributions are still being accepted by writing to Teague Water Fund, P.O. Box 84, Toone, Tenn. 38381.

The fund will go to hire a doctor and a chemical engineer to further analyze their well water and the toxic chemicals found in the wells, said Christine Sterling, community spokesman.

The residents need a doctor to determine what the chemicals could do to persons who have consumed the water. Information the specialists gather is expected to be used to file a class action lawsuit against Velsicol.

Residents raised about $1,000 Saturday in a benefit featuring picnic foods and bands at the Teague Ball Park. wa second benefit is planned next month when they will serve barbecue and all the trimmings, she noted.

Food for Saturday's benefit was donated by local merchants and all donations were put into the Teague Water Fund, Mrs. Sterling said.

The Jackson Sun
2A Tuesday, June 27, 1978

Geologists Up Next In Water Probe

It's encouraging to see state Commissioner of Public Health Eugene Fowinkle taking a personal interest in the contamination of wells in northwest Hardeman County.

Fowinkle is scheduled to meet with residents of Toone-Teague Road whose wells about three miles north of Toone have been knocked out by a yet-undetermined source of chemical pollution.

Aside from the fact that the meeting has been scheduled at an inconvenient time for many of the residents (2 p.m. Wednesday) it ought to have some good consequences.

If nothing else, it's time the residents received an update on the status of the state's investigation into the contamination. The state believes the pollution originates from a nearby chemical dump used between 1964 and 1971 by Velsicol Corp., a pesticide manufacturer in Memphis. During that time, 16.5 million gallons of pesticide-related chemicals were deposited in the landfill. Velsicol officials disclaim responsibility for the pollution.

Six months have passed since the first indications of pollution in several wells in the isolated section of Hardeman County. Investigation has been necessarily slow and painstaking as the state collected water samples and determined which wells were affected and the nature of the pollutants.

In the meantime the state has received some preliminary figures produced last year by a U.S. Geological Survey team which examined the spread of chemicals from the Velsicol dump site.

The USGS report won't be released publicly for two months, but federal sources indicate the pollution has spread much farther than predicted by an earlier USGS study. That study in 1967 revealed contaminants were gradually seeping into nearby groundwater and also were invading two subsurface water tables (although not the very lowest acquifer, which serves several West Tennessee municipalities including Memphis and Jackson.) Nevertheless, geologists then were saying the possibility was "nil" that even the closest water wells would be contaminated.

It's to be hoped Fowinkle will be ready to announce the beginning of the next phase of the investigation, which will require extensive geological testing of the chemical landfill and the surrounding area to determine the speed, direction and extent of the chemical migration.

It's doubtful the state will be able to rely solely on the latest USGS test for that information. Even the USGS geologist who conducted the monitoring operation said he would like to see more data collected now that there are reports of well contamination.

It's up to Commissioner Fowinkle to order state geologists to conduct the tests. Or he could invite the USGS back to gather more information. Either way, it's imperative we learn more — much more — about what those chemicals are doing.

Fowinkle: Threat Small, But Real, To Area Water

By SUE ANN TANZER ROBERTS
Sun Reporter

BOLIVAR — There is a real but small possibility that pollutants found in five wells on the Toone-Teague Road could eventually filter into the Memphis water supply, state Commissioner of Public Health Eugene Fowinkle said Wednesday.

"We have to, at the risk of panic, face the very real possibility of the future effects on the aquifer (water) level in Memphis and the rest of West Tennessee," Fowinkle told residents of the rural Hardeman County community and interested officials.

FOWINKLE CALLED the possibility "infinitesimal" that the area water supply could become polluted. Yet he said a United States Geological Survey predicted more than 10 years ago that the chemicals from a nearby dump site could reach the Toone-Teague water table.

The commissioner was in Bolivar Wednesday to field questions from area residents about what can be done to alleviate pollution in the Toone-Teague Road area.

State water quality control officials say they believe the chemicals found in the residents' drinking water are coming from a nearby chemical dump, owned by Velsicol Chemical Corp. of Memphis.

The dump is within a mile of the wells found to be polluted. Velsicol officials deny a link between the corporation and pollution in community wells.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in the dump, the company has said.

FOWINKLE ordered Velsicol to stop dumping in the area in 1972.

The question of whether the Toone-Teague problem could affect Memphis was posed by Dr. Richard Swiggard of the Memphis-Shelby County Health Department.

Swiggard asked whether the deep clay layer, which separates the shallower Toone-area aquifer from the 100-foot deeper Memphis artesian aquifer, had been penetrated.

Fowinkle said he had no knowledge of such penetration.

The aquifers are separated by about 100 feet of clay and silt, which state geologists have said is unlikely to allow seepage.

Leakage through the 100 feet of clay would only be possible, they say, if someone had a well drilled through the aquifer which supplies the Toone-Teague Road to the artesian aquifer that supplies Memphis.

The artesian aquifer extends under most of West Tennesseee from just west of the Tennessee River to the Mississippi River. Craig Sprinkle, a hydrologist with the USGS, said the aquifer flows westerly underneath the Toone-Teague Road area towards Memphis (away from Jackson.) The direction of the flow of the Toone-Teague water table has not been determined, however, Sprinkle said.

OFFICIALS HAVE said the only way to know whether the pollutants have penetrated to the artesian is to drill down and take samples. But they have not taken the samples because they fear the drilling would pollute the lower water table.

Several area residents told Fowinkle they have proof that

several area wells have penetrated the protective clay layer.

One resident said he knew of one which was drilled about two feet from the dump site.

Fowinkle assured residents he would look into this information and also instructed his staff to take a series of water samples from nearby Pugh Creek to determine levels of contaminants there.

A survey taken this year by USGS geologists is expected to reveal the movement of chemicals underground. This information will help the state develop a case against the chemical company if the issue is taken to court, the commissioner said.

"IT'S INCONCEIVABLE to me that Velsicol's disposal ground is not related to this problem," Fowinkle said.

Bob Wolle, deputy commissioner for environment, said to develop a case for legal action, the department must know the exact movement of the chemicals, have water samples verified and explore all other possible explanations for the pollution.

Toone-Teague Road residents wanted to know from Fowinkle what medical effects the chemicals can have on them.

Area residents have complained of unexplained illnesses — including paralysis, shortness of breath and flaky skin — which their doctors have not been able to link with the chemicals.

"There's not good information on these chemicals and their relationship to humans," said Dr. David Allen, deputy commissioner for medical affairs.

JOHN D. Boyd told Fowinkle that he was sick all winter, ever since he noticed a peculiar taste and odor to his well water. Boyd said he had shortness of breath and eventually had a stroke.

"I have related it to what I've been a drinking. Now I'm on total disability," Boyd said, sitting among family members at the meeting.

Fowinkle had no answers for the residents other than advising them not to drink "large amounts" of the water. He would not confirm that the problem here was "an imminent threat to health," terms that must be confirmed to secure a federal grant to extend fresh water to the area.

"How much longer are we going to have to wait?" asked Christine Sterling, community spokesman. "It's killing us."

Fowinkle gave the community no idea when they could expect relief, but said after the meeting he hoped something could be done before the first hard freeze.

FOR MONTHS the residents have been supplied fresh water in a 500-gallon tank by Army National Guard and Civil Defense squads from Memphis. During cold weather, the tanks would freeze, the residents fear.

Though the department has been working with the Department of Housing and Urban Development and the Farmers Home Administration to extend water lines from nearby Bolivar and Toone, no plan has yet been implemented, Fowinkle said.

Meanwhile, residents are raising their own money to hire an independent doctor and chemical engineer to research their case. The information will be used to file a class action suit against Velsicol, Mrs. Sterling said.

The Jackson Sun, Jackson, Tennessee, Thursday, June 29, 1978

Toone-Teague Residents Frustrated Despite Meeting

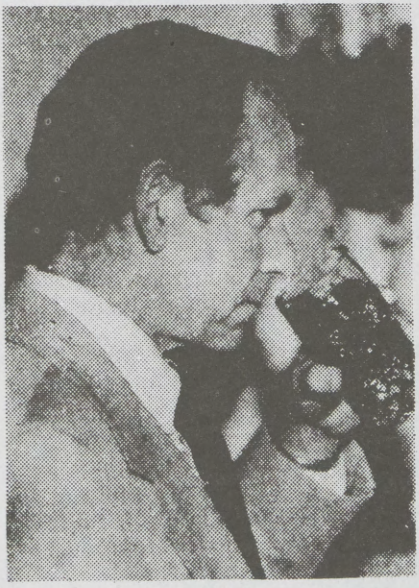
By HUNTER BRUMFIELD
Sun Reporter

A frustrated Christine Sterling was among residents of Toone-Teague Road who gathered in Bolivar to hear what the state's top public health official had to say about their polluted well water.

She was frustrated before she attended the meeting in the air-conditioned auditorium at Bolivar's water plant.

SHE WAS frustrated when she left.

It was a hot day. By the time the 2 p.m. meeting was over, the thermometer pushed 100. But for the 30 or so neighbors who live on the rolling land in northeast Hardeman County, there was no cool tapwater to greet them at their homes.



Dr. Eugene Fowinkle, state commissioner of public health, sniffs, then drinks some water from the tap of Woodrow and Christine Sterling on the Toone-Teague Road, in whose well 17 toxic chemicals have been found.

The residents fear that drinking it would invite illness or death. While health officials won't go that far, they have flatly advised against consuming it.

"I've tasted worse," said state Commissioner of Public Health Eugene Fowinkle. "But I definitely wouldn't advise drinking the water in large quantities."

He had taken a sip for the TV cameras, a few hours before the meeting, standing in the kitchen of Christine Sterling.

Mrs. Sterling and her husband have owned their modest home on Toone-Teague Road since the early 1960s. They were there when Velsicol Inc., a pesticide manufacturer in Memphis, got in trouble with the Shelby County health department for allegedly dumping plant wastes in a creek.

VELSICOL then hauled its pesticide byproducts up U.S. Highway 64 about 60 miles to Hardeman County. No one objected much.

A few voices did rise in protest. The Sterlings, for one, complained of the stench which drifted through the air from the dump site about 1,500 feet southwest of their home.

J.H."Hut" King, now in his late 60s, and his wife Gladys, were even closer.

They say their nights were sleepless when the wind blew over the dump and into their screened windows. King says when the leaves are off the trees you can see from his porch where the chemicals were buried.

They lie about 900 feet due east.

But at that time there were no state or federal laws against disposing of dangerous chemicals that way. So between 1964 and 1972, Velsicol buried an estimated 16.5 million gallons of pesticide-related chemicals in shallow trenches on the 242-acre farm it had purchased for that purpose.

Wednesday in Bolivar, Commissioner Fowinkle said "it seems clear by circumstantial evidence" that contaminants found in Toone-Teague Road wells are coming from the dump site. So far, five wells serving 25 families have been found tainted.

Water samples have revealed a collection of chemicals, many with the sort of unpronouncable names only chemists dare attempt. All are related to pesticide production. Yet Velsicol officials disclaim responsibility for the toxic well water.

FOR COMMISSIONER Fowinkle, it's a nightmare come true.

He was responsible for closing the chemical dump in 1972 when he issued a commissioner's order forcing Velsicol to stop delivery of its toxic cargoes. At the Bolivar meeting, he said he took the action as soon as the state established statutory authority to control solid waste disposal.

He spent "many sleepless nights" worrying whether his decision was appropriate, he said, adding that at the time there was no clear evidence the chemicals ever would pose a threat.

In the years since, he said, the state has attempted to keep an eye on the dump in case the chemicals began to seep into nearby groundwater and subsurface water.

In 1967 the U.S. Geological Survey conducted an extensive evaluation of the dump area's geology and the potential spread of the chemicals.

BY THEN the dump was barely three years old. But the USGS team found that the chemicals already had contaminated the "perched" water zone about a dozen feet below the trenches and had entered the "water table" aquifer about 90 feet down.

That aquifer is the one from which the Sterlings and Kings draw their water.

But, USGS officials said, the chances were "nil" that either of the two wells ever would be affected because neither was in the anticipated direction of the contaminant flow.

It would take a pump much more powerful than theirs drawing water 24 hours a day for 15 years before the Sterlings' well would be reached, the report said.

Although the King well was closer to the chemicals, it was out of the way of their predicted route. Even using a much stronger pump, bad water wouldn't turn up for at least 18 ½ years, the report further stated.

A second study done by USGS last year hasn't yet been publicly released. But there have been hints the report will show the spread of contaminants hasn't followed predictions.

IT IS WORSE than anticipated. The direction has swung more northeasterly — heading straight at the Sterling's well and several other wells put down in recent years by others who have moved into the area.

Even though the 1967 USGS report is public information, the Sterlings complained Wednesday they never were informed about the study or its findings. They acted surprised when informed their well and the King's were discussed at some length in the 41-page study.

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"Why weren't we told about this back then?" a bewildered Mrs. Sterling asked Fowinkle. "At least there wouldn't be as many of us involved in this as there are now."

No one would have purchased land near the Velsicol property if the risk had been known, she said.

A public hearing was held on the problem in 1971, she was told. "It was publicized in Hardeman County and Madison County," responded Elmo Lunn, chief of the state Water Quality Division.

LACK OF information has been one of the biggest complaints of Mrs. Sterling and the committee of 10 families who have banded together to get some of their own answers. In recent weeks they have acquired the legal services of lawyer and state Lt. Gov. John Wilder, who has undertaken the case on consignment.

The group plans to file a class action suit against Velsicol.

Mrs. Sterling called on media in May to publicize her neighborhood's plight. She said state officials had asked her to "keep quiet" while they conducted the investigation.

But, after waiting weeks to hear whether her well was contaminated, she called Rep. Robin Beard's office. Next, she got on the phone to The Jackson Sun.

Soon she started getting answers.

Yes, her well was contaminated, but no one could tell her much more than that.

"We don't know," Fowinkle repeatedly said Wednesday. He apologized, but said that information "just isn't available" on the effects many of the chemicals have on human beings when taken in extremely small doses.

But he assured the 30 or so residents that the state was doing everything it could to determine the source of the pollution, how dangerous it is and what could be done to provide them a new source of good, wholesome water.

It would just take time.

His words didn't hold much encouragement for Mrs. Sterling.

After the meeting, she was again back in her kitchen. The cameras and the ranking state officials were long gone. And she was still dejected.

"They told me last week I'd be frustrated by their answers, and they were right."



Sun Photos By Matthew Kisber

Woodrow and Christine Sterling listen as state public health officials field questions about the pollution found in five community wells on the Toone-Teague Road.

The Jackson Sun
2A Tuesday, July 4, 1978

Good State Showing Over Toone-Teague

There are those who wonder why it was so long in coming, but it nonetheless was satisfying to see last week's turnout of public health officialdom over the Toone-Teague well contamination disaster.

A quick motorcade out to the inflicted area, a few sips of water for the cameras, and then the assemblage of state and area officials made its way to Bolivar. There, a two-hour meeting was held to assure the unhappy residents that everything is being done to help them despite the state's slowness in getting anything accomplished.

The residents left the Wednesday meeting on the most part still bewildered at the pollution which has turned their beautiful, isolated hill land in northeast Hardeman County into a virtual desert of undrinkable water. They returned to their homes where their only sources of consumable water are the sky and a National Guard water trailer.

Still, the show the state put on that it was trying to come to grips with the monumental problem was impressive. It also was overdue.

Actually, nothing that was said was new — at least from the Commissioner of Public Health Eugene Fowinkle and his staff. They explained, as they have before, that the nature of the investigation makes it necessarily slow and tedious.

The more interesting side of the discussion came from the residents. Several had comments that were met with interest from the commissioner. More than once he directed his assistants to "check that" and "follow that up" after being told things the state apparently hadn't been aware of.

The residents were relaying information they knew all along and were quite happy to share. It just required someone to listen. After six months the state finally provided the proper forum.

Moreover, the meeting also showed the Toone-Teague folks that those in the state capital are aware of their problem and consider it significant. That concern isn't new, either, but so far it mostly has been expressed in phone calls and by one small effort to gather medical data.

A face-to-face meeting is a lot more convincing.

The Jackson Sun, Tuesday, July 4, 1978

'Fact-Finding' Mission Planned For Toone-Teague

A "fact-finding mission" is set for Wednesday to determine whether the Toone public water supply might be tapped to provide water to the residents of Toone-Teague Road in northeast Hardeman County.

Five wells serving about 25 families have been contaminated from chemicals state investigators believe are coming from a chemical landfill owned by Velsicol Chemical Corp., a Memphis pesticide manufacturer.

Velsicol officials have said they don't believe the contamination comes from their property.

Tommy Allen, aide to U.S. Sen. Jim Sasser, explained the trip to the community will have a dual purpose.

First, Allen says he wants to find out if Toone officials are willing to supply water to the community about three miles north of their town.

The second is to give Farmers Home Administration officials a first-hand look at the problem. Accompanying Allen will be FHA district supervisor James Sanders. Sanders' office was contacted several weeks ago to arrange possible funding for construction of a water pipe. Engineers estimate it will cost between $125,000 and $200,000 to pipe the water in from Toone.

"We don't want to raise any hopes," Allen said late Monday. "We're having some luck but it's not as good as we'd like."

He said he had tried to have a representative of the Department of Housing and Urban Development along on the trip but wasn't able to make the arrangements.

Instead, another Sasser aide, Wilma Housewright, is scheduled to meet with HUD officials in Knoxville Wednesday.

There's a chance HUD might be able to supply emergency funds to help finance a portion of the construction. So far, no such HUD funds have surfaced.

FHA officials, on the other hand, have said there's strong likelihood the construction could be paid for under the department's standard loan-grant program.

Such funding would require the residents to take out a long-term loan covering 50 percent of the construction cost. The FHA would supply the remainder as a grant.

The Jackson Sun, Jackson, Tennessee, Thursday, July 6, 1978

Toone Offered Grant For Water Line Costs

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — A Farmers Home Administration grant has brought Toone-Teague Road residents closer to a permanent alternative to their polluted wells.

James Sanders, FmHA district supervisor, told about 30 residents of the rural Hardeman County community Wednesday the agency would fund up to half the cost of extending water lines from Toone.

CITY ENGINEERS estimate the project cost between $125,000 and $200,000.

But Toone Mayor A. E. Smith says unless additional federal money can be found, the city will not underwrite the project and the grant will mean nothing. He said the city has no money for such a project.

Under FmHA guidelines, a municipality must apply for the grant and pay at least half the cost of the project out of city coffers, Sanders explained.

"I don't want to borrow any money," said Smith, whose 325 constituents don't all have access to city water.

"The town of Toone would really be in the dog house if we went out yonder to help those people and didn't help our people just over the railroad tracks," the mayor said.

Tommy Allen, aide to U.S. Sen. Jim Sasser, told the mayor and concerned Toone-Teague Road residents he is working with the U.S. Department of Housing and Urban Development to secure a grant for the other half of the project cost.

"IF THERE is some money available, we're interested in helping them get some water," Allen said. "Sometimes you can piggyback these federal monies." He called the possibility of getting HUD money "very hopeful."

HUD officials have said that there is a fund for such emergencies, but this year's $500,000 emergency fund for non-metropolitan areas was depleted in Waverly after its derailment disaster earlier this year.

Five wells serving about 25 families have been contaminated by chemicals state water quality control officials suspect are coming from a nearby chemical landfill owned by Velsicol Chemical Corp., a Memphis pesticide manufacturer.

A company spokesman has said that between 1964 and 1972 about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in the 243-acre dump.

Dumping stopped on orders of state Commissioner of Public Health Eugene Fowinkle in 1972 and the corporation began burning its wastes out of state.

EVEN THOUGH the dump is within a mile of the wells found to have 17 toxic chemicals, Velsicol officials say there is no proof that the contamination is coming from their property.

Since the pollution was discovered in the wells late last year, wells have been tested and retested by several environmental agencies and Velsicol. The results of the tests are the

same — toxic, chlorinated hydrocarbons are present in the drinking water drawn from five community wells. Yet the agencies say they still do not have sufficient evidence to take the company to court.

TOONE-TEAGUE Road residents, distressed at bureaucratic red tape and what they consider unwarranted delays, have raised more than $3,000 to file a class action lawsuit against the chemical company.

The money will be used to hire a doctor and chemical engineer to research the problem and to provide a permanent solution to the community's growing problem, Christine Sterling, community spokesman, has said.

For months, residents of the northeast Hardeman County community have had their water trucked in in a 500-gallon tank by Army National Guard and Civil Defense workers from Jackson. When the water runs out, Mrs. Sterling must make a long-distance telephone call to Henderson at her own expense to have the water replaced, she said.

Residents fear what will happen after the first hard freeze when such a tank could freeze and force them to get Water from another source.

Even if both grants are secured, however, Mayor Smith said residents would be responsible for paying a $200 tap fee, charged to all city water users to extend the water line from the property line to the home, and a regular monthly water bill. This would amount to a minimum of $5.50 per 1,000 cubic feet of water.

During a fact-finding trip to Toone and the Toone-Teague Road Wednesday, Allen, Sanders, Smith and other officials paused at the Sterling home to speak with the homemaker.

She told the officials she has to pour bubble bath into the family's bath water to get them clean.

Following the fact-finding session Wednesday, Allen said he feels optimistic about the residents getting relief from their problem soon.

"We think we've got it rolling now. We won't know how (the HUD grant) will turn out for a few days, but it's looking good," Allen said.

"At this point, I don't know of another thing that can be done. The wheels are rolling. Everything's falling into place," he added.

The Jackson Sun, Jackson, Tennessee, Wednesday, July 19, 1978 5

City Board At Toone Rejects Relief Offer

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — The Toone city board decided behind closed doors Monday to reject an 87 ½ percent grant from two federal agencies which would have provided relief for residents of nearby Toone-Teague Road.

About 40 residents of the rural Hardeman County area have been plagued with chemically-polluted wells since November.

IT WAS NOT until early this week, they say, that they have had any hope that federal money would become available to help solve thi problem of their polluted drinking water.

The Department of Housing and Urban Development has offered the town of Toone a $120,000 grant and the Farmers Home Administration has offered a $90,000 grant and a $30,000 loan to extend city water lines from the city to the affected area, nearly three miles away.

FmHA authorities said Tuesday the loan could be paid off at 5 percent interest over 40 years at a rate of $1,777 a year, a cost which could be absorbed entirely by the 30 new water users in the Toone-Teague Road area.

It would mean new users would have to pay $6.25 for the first 2,000 gallons used; $1.20 per 1,000 gallons for the next 3,000 gallons; and 90 cents for each 1,000 gallons over that amount, said City Engineer Bob Polk, of TLM Associates Inc. of Jackson.

TOONE CITY water users use an average of 5,000 gallons of water a month, Polk noted, and they pay $5 for the minimum 4,000 gallons.

The Toone water system is now showing a deficit of $4,000, Polk said. He said he has recommended that the board raise city water rates.

"In the near future they will have to up their water rates. The six dollars is not out of line," Polk noted Tuesday. The board has not, however, taken any action on raising water rates, the engineer explained.

As far as the city board and Mayor A. E. Smith are concerned, extending water lines to the Toone-Teague Road area is out of the question if the city doesn't receive a 100 percent grant.

"I TOLD THEM we didn't want to borrow any money," Smith said of the FmHA. Some city constituents aren't even serviced by the city water system, he said.

"The town of Toone would really be in the dog house if we went out yonder to help those people and didn't help our people just over the railroad tracks," the mayor has said.

The board voted Monday, however, to reconsider an offer of a 100 percent grant if such an offer should be presented to the members.

HUD and FmHA officials as well as interested citizens and members of the press were not invited to the board's private session Monday, despite repeated attempts by The Sun to learn the time, place and date of the board meeting.

The meeting is in apparent violation of the Tennessee Sunshine Law, which prohibits the convening of a public governing body for which a quorum is required to make a decision from meeting without "adequate public notice of such meeting."

THE MAYOR said the press was not notified of the meeting and that it appeared he had violated the open meetings law.

"I'm pretty sure it is (a violation of the Sunshine Law), but it doesn't bother me nohow," Smith said.

Under the same law, it states that any action taken in an unannounced meeting "shall be void and of no effect." Therefore, whether the board's decision to reject the government's 100 percent grant-loan is official still is in question.

Aldermen who voted unanimously to reject the government's offer included L. P. Smith, A. L. Keller, A. E. Smith Jr., W. F. Wiggins and Joseph L. Jones. Alderman Ned Leathers was absent.

Alderman Jones said Tuesday he didn't think the city could take on even the small $30,000 loan.

"WE'RE A small town and we're 100 percent behind those people, but we're not able to take on any more obligations for the town," Jones said, referring all other city comments to the mayor.

The other aldermen were unavailable for comment.

Jones and Mayor Smith said the city is holding out for more money. Smith said the city will only consider the offer if a 100 percent grant is offered.

The possibility of such a grant being offered is doubtful, say HUD and FmHA officials, who

say they have gone all the way to Washington to obtain the money they originally offered.

Earl Wayne Avery, state director for FmHA in Nashville, said the agency cannot legally make a 100 percent grant.

"This is not going to cost the town of Toone anything, but they would be liable for the $30,000," Avery said Tuesday. "It's the most liberal offer that could possibly be made from the two agencies."

AVERY SAID when he heard the board had rejected the joint grant-loan offer, he was "very disappointed."

"I was disappointed for the people of that area. Our prime concern is to provide a safe and adequate water supply. I think they are the ones who are actually going to be penalized. I would hope the mayor and board would reconsider," Avery said.

If the board holds fast to its decision, Avery said FmHA will go to Bolivar and Mercer to seek an alternate water source for Toone-Teague Road residents. "But Toone is the logical one to furnish them water," he added.

Glen Strange, HUD director of community planning and development in Knoxville, said Tuesday the board's decision has put his agency "in limbo again, about the same place we've been for the past several weeks."

Even if HUD came up with an additional $30,000, the city would lose all of its FmHA money since FmHA cannot make a grant without the project being partially locally funded, Strange explained.

"In my mind, I really don't see how we can do much more," Strange said.

Strange said he has contacted the offices of U. S. Rep. Robin Beard and Sen. Jim Sasser to see if there are any other possible funds available for the project, but has received no answer.

Both Avery and Strange said they would welcome a notification from the city board that it had reconsidered the offer.

"Our offer has not expired. There may be a time when it does. We have money at times and at times we don't," Strange explained.

Terry Cothron, basin engineer for the state Division of Water Quality Control in Nashville, said though he was disappointed that the board had not accepted the proposal, "I'm not ready to give this thing up yet."

For months, Civil Defense and Army National Guard employees have supplied residents of the road with water from a large tank.

The tank will be removed from the area Monday because it is needed for summer National Guard maneuvers and when it will be replaced is uncertain, Cothron said. He noted, however, that Jackson water quality control officers are working on the arrangements.

News of the board's rejection of the water line extension came hard to Christine Sterling, who lives on the road with many members of her extended

family. Mrs. Sterling has for months tried to secure fresh water for her tiny community and says she doen't know where else to turn.

"I can't believe they did us like this. I went to the doctor last week. The worry — the pressure of not knowing and not having water is too much, the homemaker said.

Mrs. Sterling said neither she nor her neighbors knew about the city board meeting.

"I feel that they did us a terrible injustice and they should have let us know what was going on. Now what do we have to hope for?" Mrs. Sterling asked.

Since November 1977, residents of the road have noticed a peculiar taste and smell in their water. After repeated tests, more than 12 toxic chemicals were found in five community wells.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in a nearby dump, which is owned by Velsicol Chemical Corp. of Memphis.

Water quality officials and the residents say they suspect the pollutants are seeping from the dump into the water supply, but Velsicol officials claim there is no proof that the chemicals are coming from the dump.

The Jackson Sun
2A Wednesday, July 19, 1978

Out Of Water, Out Of Luck On Toone-Teague Road

Drinkable water seemed so close for the 25 unfortunate families on Toone-Teague Road in northeast Hardeman County who have lost their wells to contaminants.

Several weeks of effort to find federal emergency grants to pay the $230,000 cost of piping in the water produced all but $30,000.

All it would take to get fresh water flowing was the willingness of Toone officials to borrow the rest of the funds which would be paid off in 40 years by the new customers.

But the small town, perhaps with some justification, said "sorry, we can't help" in a meeting Monday night.

What if the number of customers predicted for the new pipe didn't materialize, the nervous officials ask. Thirty will be required paying about $11 a month to cover the costs of the water and the loan. New customers would have to build to 40 over the next four decades to make Toone break even. Projected growth for the area is only slight, making it possible Toone residents may end up losing some money.

It was a tough decision.

Still, it was just about the only realistic hope for the residents who will have to abandon their homes unless they can get a permanent supply of water. So 25 families get wiped out, their property rendered valueless, all for the want of $30,000.

What now? All that are left are straws.

A chance exists that Toone's officials might change their minds. They did, after all, conduct the meeting secretly — and thus illegally — and should reschedule it in accordance with state law which requires all such meetings to be public and announced.

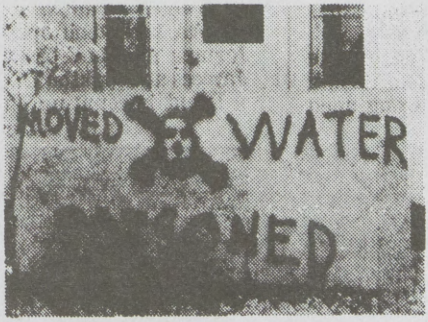
There's a strong possibility more private wells will be lost to the almost certain spread of contaminants. There's no assurance that Toone itself won't eventually get caught by the chemicals and also see its water go bad.

It's something for the people of Toone to ponder as they reconsider whether to come to their neighbors' aid. As one of the affected residents pointed out, no one thought 10 years ago his well would be contaminated.

Yet Toone's officials aren't the bad guys in this tragedy. After all, they have to look after their own residents. The bad guys — the ones responsible for the pollutants — are off somewhere else obviously hoping the state can't build a legal case against them. There's little chance any money will come from them — at least not voluntarily.

Then there's Hardeman County, which could respond, although all through this county officials have been deafeningly silent. A $30,000 grant from the county, in restitution for not better protecting its residents, isn't out of the question.

The state might come up with the $30,000 although it seems more willing to let federal taxpayers take on the burden. The state failed, too, by not acting earlier against the chemical dump it now believes — but can't yet prove — is causing the pollution.



Who knows? There even may be a candidate willing to champion the cause of some people in terrible need of a champion. It would be an expensive, but immensely rewarding way to win some votes on Toone-Teague Road.

The Jackson Sun, Jackson, Tennessee, Friday, July 21, 1978 5

Toone Officials Reverse Decision, Seek Grant

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Overturning an earlier decision, Toone city board decided Thursday to accept an 87½ percent grant from two federal agencies to extend pure water to nearby residents of Toone-Teague Road.

The decision depends, however, on the ability of the residents to get at least 30 households to sign up as water customers by Monday, the board decided.

ABOUT 40 residents of the rural Hardeman County area have been plagued with chemically polluted drinking water since November.

Monday night, the board voted unanimously, behind closed doors, to reject a $120,000 grant from the Department of Housing and Urban Development, and a $90,000 grant and $30,000 loan from the Farmers' Home Administration to extend a water line from the city to the affected area, about three miles away.

The decision came even after Bob Polk, city engineer, told the board the loan could be repaid with the revenue from 30 paying customers at a minimum of $6.25 a month.

FmHA authorities said this week the loan could be paid off at 5 percent interest over 40 years, with only about $250 paid the first two years (interest payments) and $1,777 for the next 38 years.

Even though Mayor A.E. Smith and the aldermen voted Thursday to accept the grants and loan, they said they still had reservations about committing the small town to any debt when many of their own residents have no city water.

ALDERMAN JOE Jones, a local banker, said he didn't think a town so small could withstand any more debts.

Alderman Albert Keller said he voted for the grant-loan plan "because I felt like they needed water." But Keller added he fears Toone water rates will be raised later on.

"We want to help them, but we don't want to go in debt to do it," the alderman said.

Another reason he voted for the proposal, Keller said, is because so many residents turned out for the meeting and got their enthusiasm up. Keller said it was an indication that they would all work together to get the needed customers signed up.

Alderman Ned Leathers, who was absent when the board first voted on the loan-grant proposal, was the only nay vote Thursday night.

LEATHERS SAID he voted against the motion because only eight families raised their hands as being in favor of paying the $160 initial tap fee and the monthly water bill.

The board's action will mean nothing, however, unless residents carry out their planned door-to-door campaign to sign up at least 30 water customers.

Christine Sterling, who has spoken for the tiny Toone-Teague Road community where many members of her extended family live, said the recruiting team may have several stumbling blocks to hurdle.

She said many residents in the affected area are uneducated and are still drinking the polluted water.

"I've had people say they'll drink the water if it kills them," she said.

Most of the residents in attendance agreed to sign up, however.

The Jackson Sun
2A Friday, July 21, 1978

Some Help For The 'Little Guys'

Last night, half a victory was scored by the residents of Toone-Teague Road in their quest for untainted water.

In a gratifying display of compassion, the Toone board of aldermen voted to rescind action it took earlier in the week. The board had refused Monday to borrow money to extend the town's water system to the area of pollution-stricken wells.

Even though the board has changed its mind, there's a catch. The water will be provided only on the condition that enough households sign up for it. It will take a minimum of 30 to cover the full cost of the loan.

Again, a serious problem over money arises.

One stipulation of the water contract is that it be accompanied by a $160 tap-on fee. The fee is needed to help operate the line once constructed.

A good number of the residents will pay it, and gladly. It's the one chance they have to provide their homes and families clean, healthy water. If everything goes smoothly, water will flow within 90 days.

But there are other residents on the road barely scraping by on fixed incomes who can't pay the $160 — at least not on such short notice. This is a beautiful, but poor part of Hardeman County. You might as well be asking these people to cough up $16,000 as $160.

Everything rides on at least 30 signing up. Anything less and the agreement will fall through, forfeiting the sizable federal assistance that's being offered.

A fund already exists to help these people wage a court fight against heavy odds.

Right now they have an immediate and severe need for a second show of compassion from those of us who are willing to help some "little guys" out of a nightmarish situation.

It's bad enough that they've lost their water apparently to garbage chemicals dumped on them from somewhere else. Now they're on the verge of losing their homes as well. And they will, unless they can get a new supply of water.

These people are fighting hard to help themselves. But this is bigger even than their indominable spirit. If you can spare a few dollars, they sure do need them — and quickly.

Donations can be sent to "Teague Water Fund, Box 84, Toone, Tenn. 38381."

July 24, 1978

Enrollment Drive Succeeds For Toone-Teague Citizens

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Toone-Teague Road residents, who have been plagued with chemically polluted wells since November, will soon have fresh water because of a successful weekend door-to-door campaign to recruit at least 30 new water customers.

The new customers were the stipulation of the Toone City Board when it approved the $240,000 project to extend a water line from city wells to the northern Hardeman County area. The city accepted an 87½ percent grant and a $30,000 loan from two federal agencies, to be paid back at 5 percent interest over 40 years. The city engineer said 30 new customers would provide the money to repay the loan.

CHRISTINE STERLING, in whose well the toxic chemicals were first found, said Thursday after the board meeting, that she feared she could not secure the needed 30 signatures.

It would mean convincing some of her neighbors of the worth of paying an initial $160 tap fee and monthly water bill of $6.25. Some of these residents were still drinking the water from the wells, she noted, even after water quality officials had warned against it.

This morning, $48,000 in checks in her hand, Mrs. Sterling deposited the needed money in a local bank, where it will be held until Farmers Home Administration needs the money.

"You can't imagine how hysterically happy we all are. We didn't have any hope hardly at all," Mrs. Sterling said this morning.

Many of the low-income residents of the rural area were unable to raise the $160 tap fee by the deadline, and they were loaned money from the Teague Water Fund. "One family just couldn't afford $160," Mrs. Sterling said.

The fund was set up months ago to raise money for a court battle against Velsicol Chemical Corp. of Memphis, which residents and water quality control officials say they believe is responsible for the pollution.

Between 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in the company's nearby dump, located within a mile of the wells found to be polluted.

'You can't imagine how hysterically happy we all are. We didn't have any hope hardly at all.'
— Christine Sterling

WATER QUALITY officials and the residents say they suspect the pollutants are seeping from the dump into the water supply, but Velsicol officials claim there is no proof that the chemicals are coming from the dump.

Residents said today they still plan to pursue their class action suit against the corporation.

Recruiting was not an easy task, say the five couples who knocked on every door of the community.

"We tried to get everybody. We just told them it was our only hope of getting water here," Mrs. Sterling.

Besides Mr. and Mrs. Sterling, other recruiters included Nancy and Steve Sterling, John and Ethel Boyd, Thomas and Linda Young and Richard and Gail Phillips.

It was Steve Sterling's job to revisit the homes of residents who would not sign the papers when approached by other recruiters.

"I got all the ones that didn't want it at all. I just explained it the best I could and what shape everybody was in. I really did better than I thought I would," the outgoing resident said.

"It didn't mean as much to me as it did to this community. I just wanted everybody to know how I felt," Sterling added.

Also among those recruiting signatures was Toone Mayor A.E. Smith, who commended the residents for their persistence in wanting to solve their water problems.

"THEY'VE DONE an excellent job. I'm mighty proud of them. You better believe it," Smith said this morning.

The mayor said he plans to notify the Knoxville FmHA office and Nashville office of the Department of Housing and Urban Development today that the town has accepted their loan and grant offers.

The Jackson Sun

2A Tuesday, July 25, 1978

Blessed Rainclouds On The Horizon

Monday success was announced in the plan to obtain a new supply of water for the homes on Toone-Teague Road. It was a happy day for people who haven't had much to be happy about lately.

It's as if these past six months the area has been caught by a horrendous drought. There's still plenty of water, but it flows with the noxious stench of chemicals. For drinking purposes it's the same as no water at all.

Fresh water from nearby Toone will be piped in using $200,000 in federal grants and a $30,000 loan. Thirty families had to sign up for the service before Toone's officials would agree to acquire the loan. There were only about that many families in the afflicted area. Yet the people rallied and, although many are poor, managed to scrape up the $160 required of each household for initial tap-on charges.

The residents, first, have themselves to thank. Fortunately, enough recognized why it was essential they join together to get water from Toone. Without it, their property is virtually worthless.

It took Toone's willingness to help them out. The support was a gratifying show of concern that should be recognized and applauded. Mayor A.E. Smith can take pride in his town.

Yet behind the scenes there was a lot of work by government staffers who realized the desperate fix the people were in. Much searching for funds and a little harmless rule-bending were done to help them out. Here's one time those "faceless, unfeeling bureaucrats" have shown that government can be compassionate.

In the middle, playing a major role as worrier, reminder and compromiser, was the staff of U.S. Sen. James Sasser. In particular, Tommy Allen, Sasser's field representative for our area, deserves credit for staying on top of the funding request and helping ease it through some difficult moments.

The water won't flow for another three months. But to those on Toone-Teague Road the assurance of it is like rainclouds on the horizon of parched farmland.

The Jackson Sun, Jackson, Tennessee, Friday, August 25, 1978

Toone-Teague Residents Plan Fund-Raiser

TOONE — A fund-raising picnic is planned Saturday by residents of the Toone-Teague Road who are fighting pollution found by state water quality officials in their wells.

The picnic will begin at 6 p.m. at the Teague Ball Field.

Proceeds from all sales of barbecue, stew, hotdogs and cold drinks will go to the Toone-Teague Water Fund. The fund is being held in escrow at a local bank, said event coordinator Christine Sterling.

Money is being raised to file a class action lawsuit against Velsicol Chemical Corp. of Memphis, which owns a nearby chemical landfill where barrels of chemicals are buried, a resident said.

Residents suspect pollutants have seeped from the landfill into their water supply. The chemical company says there is no proof that this happened.

Proceeds will be used to hire independent experts — a chemical engineer and doctor — to testify as to what the chemicals have done to the water supply and to the persons who have consumed the water, Mrs. Sterling explained.

The Jackson Sun, Monday, August 28, 1978

Toone-Teague Grant OK'd; Water May Flow In '79

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — City officials here have received final approval of an 87½ percent grant from two federal agencies to extend pure water to nearby residents of the Toone-Teague Road.

Tommy Allen, aide to Sen. Jim Sasser, D-Tenn., said the city will soon receive a $120,000 grant from the Department of Housing and Urban Development and a $90,000 grant and $30,000 loan from the Farmers Home Administration.

This means engineering planning will begin today on the project's fine points, said City Engineer Bob Polk, of TLM Associates Inc. of Jackson.

The project design should be completed within 30 days, Polk said. Then it must be approved by the state Department of Public Health. Bids will then be taken and the contract could be awarded after two months, he said.

"The soonest they could get a fresh water supply is the first of the year," said Polk. The only way it could be done sooner is if either his design is completed sooner or if the contractor works faster and has materials readily available, he said.

Polk said his company will be studying the best location for installing the storage tank and lines and the size of the pump station in the next week. He said he is going to look into any state plans for widening Tennessee 100 before final plans are submitted.

About 40 residents of the rural Hardeman County area have been plagued with chemically polluted drinking water for many months. More than 12 toxic chemicals have been found in five community wells.

Retween 1964 and 1972, about 16.5 million gallons of chemicals were buried in about 300,000 metal drums in 15-foot trenches in a nearby dump, which is owned by Velsicol Chemical Corp. of Memphis.

Water quality officials and the residents say they suspect the pollutants are seeping from the dump into the water supply, but Velsicol officials claim there is no proof that the chemicals are coming from the dump.

For several months, the residents have been supplied fresh water by Civil Defense and Army National Guard employees but they have been using the polluted water to do such things as wash dishes, take baths and feed livestock and pets.

Toone-Teague Road residents, who have consumed the polluted water, have complained of unexplained illnesses, but their doctors have been unable to link the chemicals to the illnesses.

Toone City Board accepted the grant-loan proposal on the condition that 30 households sign up as water customers in three days.

Polk said 42 customers have paid their initial tap fee and have agreed to pay about $10 a month for water in the Toone-Teague area.

Residents of the area say the foul taste and smell in their water is getting worse. They say they hope to get some relief soon, at least before winter.

The Jackson Sun
2A Monday, August 28, 1978

This Time, Credit Richly Deserved

It's always been somewhat amusing the way congressmen horn in on the publicity when a new federal grant or program is announced.

It's SOP in Washington to let senators and representatives make the official declaration, although their offices may have had little or no actual responsibility for it.

Friday, a press release from Washington made it official that the pollution-stricken families on Toone-Teague Road would get a $120,000 grant from the Department of Housing and Urban Development to help pay for a new water system. "Sen. Jim Sasser and Rep. Ed Jones report that HUD. . .", the release began.

This is one time when such recognition is richly deserved, particularly in Sasser's case. If it weren't for hard, persistent work by his staff, the grant never would have been possible.

For the folks on Toone-Teague, Sasser's influence was one of the few hopes they had for drinkable water. Fortunately, it worked.

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The Jackson Sun
2A Wednesday, September 27, 1978

Oozing Chemicals A National Problem

The families on Toone-Teague Road who have lost their drinking water to apparent contamination from a chemical dump have some small consolation. They are not alone in their plight.

Nationally, almost weekly, reports surface about similar dumps slowly leaking toxic waste chemicals into nearby water supplies and residential areas. It becomes increasingly apparent that the southwest Hardeman County community will be only one of dozens, perhaps hundreds, of communities across the nation visited by the specter of buried poisons from the past.

Federal officials estimate there may be as many as 400 suspicious hazardous waste sites around the country. The problem is, no federal policy exists, nor are substantial court precedents set on who's responsible for cleaning them up.

How serious the problem has become was reported two weeks ago in The Washington Post. While the lengthy article dealt mainly with the Toone-Teague Road well contamination, it also cited several of the more recent chemical dump disasters elsewhere:

- In Michigan, state authorities have determined it would cost $100 million to stop toxic wastes from leaking from a chemical dump into Lake Michigan. "There's no way we're going to ask the taxpayers to ante up to that," one official said.
- In Massachusetts, health officials got an emergency $1.3 million from the state legislature to remove 17,000 barrels of toxic chemicals leaking from an abandoned lot into the Merrimac River, the water source for several communities.
- At Love Canal, in Niagra Falls, N.Y., probably the most widely publicized of chemical waste disasters, officials have estimated that preliminary cleanup costs alone will run to $8 million. "And that," according to one official, "is just to make the area livable. We're not even talking about relocation costs."

In those cases, as was determined some time ago by Toone-Teague Road residents, no federal grants are available to assist with cleanup. And EPA officials were not optimistic that local communities would easily come by financial relief.

"It's kind of confusing," one EPA spokesman was quoted in the Post story. "I guess the one who pays is whoever gets left holding the bag." That could include any of the estimated 425,000 firms which generate toxic chemical wastes, or the 25,000 or so firms that transport it, or another 25,000 firms that store, treat or dispose of it.

Fortunately, EPA is in the process of developing stiff new rules on chemical waste disposal. Presumably, the regulations will spell out who is responsible for cleaning up future chemical leaks. One proposed solution is a national trust to pay to clean up hazardous waste sites. The trust would come from a per-ton tax on waste as it is dumped and would be held for emergencies such as the Love Canal disaster.

Such financial aid is probably years off, though, and offers scant comfort to the 25 families in rural Hardeman County.

Friday, September 29, 1978

Toone-Teague

Residents Face Loss Of Federal Funds

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Toone-Teague Road residents face cancellation of federal funds to provide their area with pure water unless $900 more in tap fees is paid by Oct. 24.

For five months, residents have been supplied fresh water by Civil Defense and Army National Guard employees in large tank trucks because toxic chemicals have been found in community wells.

IN JULY, the Toone city board voted to accept a $120,000 Department of Housing and Urban Development grant and a $90,000 grant and $30,000 loan from the Farmers Home Administration to extend a water line to the area.

The grants amount to 87½ percent of the cost of the project.

The deal was contingent, however, on the area residents' ability to secure 30 new water customers, each of whom would pay a $150 tap fee and a $10 first water payment.

City Engineer Bob Polk of TLM and Associates of Jackson said 30 customers had agreed to pay, but only 24 of them have actually paid the tap fees.

Failure to pay the fees could mean an end to the project, he said. A FmHA regulation calls for $4,500 in cash contributions for the project plus 30 customers, Polk noted.

"We feel we have carried this as far as we can. We're ready to do the design and get it out for bids, but if this condition is not met, Farmers Home is not going to make the loan to Toone for the project," Polk said.

"IF THAT condition is not met by Oct. 24, the project will not go through, unless Farmers Home is willing to extend the deadline," he added.

J.R. McCroy, FmHA community program specialist in Nashville, said the agency intends to be somewhat lenient on the deadline. He added, however, that if tap fees are not paid, the FmHA will not be able to participate in the project.

McCroy said the money has been set aside for the Toone-Teague Road project, but FmHA has said if the fees are not received in a reasonable length of time the money will go to other projects.

"We'll work with them any way we can. We know the problem they have and we want to help them resolve it," the FmHA official added.

City Treasurer Joe Jones, local banker, said this morning that six residents submitted their checks to the bank more than a month ago. They asked him to hold the checks in trust and not to cash them until they were able to raise the $160, Jones said, noting that many of these residents didn't and don't have accounts at the bank.

THE HOLDUP on payment, said Christine Sterling, local resident, is that the people can't afford even the initial tap fee and are awaiting news on federal loan applications they have filed to pay the money.

"There are months that some of these people don't have money for groceries," Mrs. Sterling said.

If the six required customers are not paid up soon, Mrs. Sterling said more money might have to be taken from the Teague Water Fund.

The fund was set up to hire independent specialists to study the source of pollutants found in community wells and to file a class action lawsuit against Velsicol Chemical Corp. of Memphis. The suit has not yet been filed, however.

Water quality officials and residents say they suspect the pollutants are seeping from the company's nearby chemical dumpsite into the water supply, but Velsicol officials claim there is no proof that the chemicals are coming from the dump.

Since the city board agreed to underwrite the FmHA loan, residents of the economically-depressed area have diligently conducted a door-to-door campaign to get the required 30 customers.

The Jackson Sun, Jackson, Tennessee, Thursday, October 5, 1978

Congress To Study Toone-Teague

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — The Environmental Protection Agency and the U.S. Congress soon will be probing the problem of polluted community wells on Hardeman County's Toone-Teague Road.

The House of Representatives' Subcommittee on Oversight and Investigation will consider the nationwide problem of pesticide disposal, groundwater pollution and the effect of chemicals in drinking water Oct. 25 in Washington.

Among the committee's target projects will be the tainted drinking water on the Toone-Teague Road and what can be done about groundwater contamination, a committee spokesman said.

Witnesses from the area may be called to testify at the Congressional hearings over which U.S. Rep. Albert Gore Jr. of Tennessee is expected to preside. The hearings will be held during Congressional recess, the spokesman added.

Meanwhile, the EPA has granted the University of Cincinnati a $1 million grant for a four-year research project in Memphis, Chicago and Cincinnati to determine how infectious diseases relate to employees who handle sewage.

The university has decided to include the Toone-Teague Road case in its research, project director Dr. Scott Clark said.

Clark said university researchers, stationed in Memphis to study infectious diseases and sewage workers, then learned about possible chemical spills in Hardeman County.

They will be in the area in a few weeks to take urine specimens to see if any chemicals have lingered in the bodies of area residents, he said.

Seventeen toxic chemicals, many of which are chlorinated hydrocarbons, have been found in at least four wells in the remote West Tennessee area. Some 35 families on the road and in the vicinity fear what effects the ingested chemicals have had on them.

Water quality control officials and area residents believe the pollution is seeping into the water supply from a chemical dumpsite, owned by Velsicol Chemical Corp. of Memphis, one-half mile from one affected well.

Corporation officials say, however, there is no proof the chemicals are coming from the dump.

Clark said the University of Cincinnati's study will test for traces of chemicals in the residents' bodies.

"We'll look for three or four organic compounds

that have been found in the Toone-Teague water supply," Clark said. "This is to determine if we can see any effects from exposure. It is not a health effects test."

The study could help show the difference in chemical concentrations in the urine of the affected area's residents versus a group of other Hardeman County residents who have not consumed the water, he explained.

"If you find it in the urine in people who are bathing in the water and not in those who are not bathing in the water, it could mean they have it in their urine because of the water," Clark noted.

The researcher said he has taken a personal interest in this case.

"I'm certainly interested in their plight. It's certainly nothing they could help. Certainly the dumping was done carelessly. These are people who have suffered an injustice," Clark said.

Besides helping to prove what chemicals have persisted in the residents' bodies, the study could also help them get a fresh water supply faster, he said.

For nearly six months, residents have been supplied fresh water by Civil Defense and Army National Guard employees in a large tank truck.

The Department of Housing and Urban Development has offered a $120,000 grant, and the Farmers Home Administration has offered a $90,000 grant and $30,000 loan, to be paid back at 5 percent over 40 years, to extend a water line from Toone.

To get the FmHA money, the City of Toone must underwrite the loan. City fathers have said they will do so only if 30 area residents pay an initial $150 tap fee and $10 first water bill payment.

Many residents of the economically depressed area cannot afford the $160 and have applied for government loans to pay it. The paperwork has not yet gone through leaving the entire project in jeopardy.

The pollution was first discovered last November when residents noticed a chemical odor and taste in their well water. Repeated tests of five area wells revealed numerous pesticide-related chemical traces.

Since November, residents have complained of paralysis, weak knees, numb joints, dizziness, shortness of breath and coughing up phlegm. They are afraid the symptoms are a result of drinking the tainted water.

Some have been hospitalized and others have made routine visits for medical advice, but their doctors have been unable to link their illnesses to ingested chemicals.

Since pollutants were first found in area wells, traces of chemicals have been found in the bloodstreams of three local residents by county health officials.

The Jackson Sun
2A Friday, October 6, 1978

Questions Warrant EPA Attention

It's good to see the federal government finally take an active, if limited, role in the investigation of contaminated well water in Hardeman County.

The Environmental Protection Agency announced Thursday that the apparent pesticide contamination of wells serving 20 families on Toone-Teague Road will be taken up in a Congressional hearing Oct. 25. The hearing was called in an effort to determine how widespread a problem there is nationally with leaking chemical dumps.

Also announced were plans by the University of Cincinatti to include Toone-Teague Road residents in a federally funded, $1-million research project examining the effects of human exposure to dangerous chemicals.

At this point it appears federal involvement will be limited, since the state is supposed to request help before federal agencies move in.

Yet it's becoming apparent that the Hardeman County problem may rank as one of the country's worst cases of chemical contamination. Thus it's no longer just Tennessee's concern.

The EPA should get about the task of learning what's gone on in Hardeman County so more can be predicted about the other estimated 400 suspicious chemical dumps around the country.

Still, there are numerous questions to be answered for the benefit of the residents in and near the afflicted area.

One is whether it's safe to wash clothes and dishes and bathe in the tainted water. Another is whether the land would be perilous to live on even if there were an alternate supply of fresh water. How far have the chemicals seeped? Are they likely to contaminate other sources of water, such as at Toone three miles away?

The state hasn't even begun to answer those questions, which require lengthy and expensive investigation.

Perhaps as the EPA becomes more involved, some of this awful mystery will start unfolding.

October 8, 1978

Toone-Teague

Residents Don't Plan To Drop Suit Despite Concessions By Velsicol

Toone-Teague Road residents do not plan to drop a lawsuit against Velsicol Chemical Corp. despite the company's acknowledgment that its dumping site may have contaminated the Hardeman County community's water supply.

Christine Sterling, who is joining 10 others in a class action suit against Velsicol, said Saturday "I don't feel like we will drop the suit. We've been out a lot and suffered because of what they've done to us."

MODIFYING AN earlier position, Velsicol said Friday a new study of the chemical disposal site by an independent geological firm indicated some seepage of toxic chemicals into the water supply of about 30 homes may have occurred.

"Preliminary analysis just received may suggest the former disposal site is the source of contamination via underground migration," said the statement released by Rich Blewitt, vice president of public affairs. "A possible seepage was found in what was previously considered by experts a secure landfill."

Although results of the contamination tests by Geraghty & Miller Inc. are not conclusive, Velsicol has agreed to pay for new water supply connections to 26 homes adjacent to company property in Hardeman County, the statement continued.

Mrs. Sterling commented that "even if we get a fresh water supply out here, our property isn't worth what it was before the chemicals were found in the water.

"It's been a year since the water started tasting bad. It's frightening because we don't know what this polluted water has done to our children.

"I WON'T shut up until they do something about this situation," she said, adding that her family has spent as much as $500 on telephone calls in an effort to find some environmental or health agency that would hear the residents' complaints.

County officials have also begun steps to extend a waterline from the Toone community to supply the residents of the area with treated water.

For nearly six months, residents have been supplied fresh water by county civil defense units and the Army National Guard in a large tank truck, explained Toone-Teague Road resident John D. Boyd.

"We've had the tank from the National Guard and the civil defense

people to supply water to us, but I still haul water by car from outside the community," he said.

Boyd said whenever he wanted water to drink he "goes into Toone to drink the city water" and hauls some back. The contaminated water in the wells "may be all right to bathe or wash in," he said.

Boyd said he didn't know whether the agreement by Velsicol would pay for the laying of water pipeline to the affected community from the city of Toone or just for the water tap fee to homes once the pipe is lain.

THE CITY of Toone is eligible for a loan and grant for $120,000 from Farmers Home Administration, but must first underwrite the loan-grant by passing the $150 tap fee along to residents of the area.

The 242-acre disposal site in northern Hardeman County was closed in 1972 by order of the state public health commissioner when questions were first raised about the area's water supply in wells.

After other Toone-Teague Road residents complained about their well water this year, the state Health Department's water quality control division ordered testing which revealed chemical compunds in the water similar to those known to be in the dump.

Velsicol initially denied any link between the dump and contaminated water along the road area, citing an earlier report by the U.S. Geological Survey which indicated seepage from the dump could not get into the water table which supplies wells in the area.

THE ANNOUNCEMENT by Velsicol Friday also included a provision where cost of water provided and delivered to the affected resdients would be paid by the company.

It said company representatives will meet this week with federal, state and local officials to review corrective measures to be taken in the contaminated water area.

The Jackson Sun
2A Tuesday, October 10, 1978

Defusing Timebomb Next Priority

Responding to what they call "preliminary evidence," Velsicol Chemical Corp. officials have agreed to take steps to deal with contamination of well water near the Memphis pesticide manufacturer's chemical dump in Hardeman County.

The corporation will pay for hookups for 26 homes to a water system funded by $200,000 in federal grants and low-cost loans. The hookups will cost about $4,000.

While that figure may seem a pittance, the concession is a major one for the corporation. As the officials no doubt realize, plantiffs in the class action suit being brought against the firm will view the action as an admission of blame, and will use it in court.

Thus, although it was the only morally correct act, Velsicol's agreement to help supply the water was courageous nonetheless.

Whether the company should pay the full amount for supplying the water is debatable.

The company failed to take adequate precautions to ensure the chemicals would not spread and now must face the consequences.

However, the state and federal governments share at least some of the blame for their failure in the past to strictly regulate the disposal of dangerous chemicals. It seems reasonable that the government should also share some of the cost of rectifying the mistake — particularly if it means government assistance will speed up resolution of the problem.

Much more important than who pays is that now the task of containing the spread of contaminants can begin. Velsicol has agreed to work with the state in coming up with a plan to carry that out.

No one knows what the dump, with its 16.5 million gallons of lethal chemicals, is capable of doing.

Now that the residents are assured of obtaining a fresh supply of water, the next priority should be defusing the chemical timebomb. Too much time already has been wasted.

October 11, 1978

Velsicol, State Form Task Force

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Velsicol Chemical Corp. and state water quality officials have formed a joint task force which will give top priority to relieving 30 Toone-Teague Road households from polluted well water.

The force was formed Tuesday when company representatives met with state and research officials in Nashville to iron out details of the company's commitment to pay tap fees for the families in whose wells 17 toxic chemicals have been found.

TERRY COTHRON, state water quality control assistant director, said the group will push to get the line extended before freezing weather.

It also will disperse money for the project, supply fresh water to livestock, study health effects of consumption of chemicals found in the water and reimburse governments who have supplied the area with a temporary water supply, Cothron noted.

"Everything ought to roll now," Cothron said.

Also at the meeting, William Howard Beasley III of Chicago, vice chairman of the board, said Velsicol, a pesticide manufacturer, will absorb the cost of the line's extension even if it is later proven that a waste disposal site once used by the firm in Hardeman County wasn't the cause of well contamination.

"IT'S WITH no strings attached," Beasley said after the meeting in Nashville. Late last week, Velsicol announced that independent testing by Geraghty and Miller Inc., nationally known groundwater geologists and hydrologists, indicated its wastes were responsible for the contamination in community wells.

Blewitt said $4,500 has been deposited in Planters and Merchants Bank of Toone for the line extension work.

The Jackson Sun, Jackson, Tennessee, Thursday, October 12, 1978

Velsicol, Agencies Meet To Examine Water Data

By SUE ANN TANZER ROBERTS
Sun Reporter

ATLANTA — About 30 representatives from Velsicol Chemical Corp. and state and federal environmental agencies met today to compare data on the Toone-Teague Road, where community wells are polluted.

The Environmental Protection Agency is cooperating with Velsicol to bring fresh water to the Toone-area residents, said Paul Traina, EPA Region IV enforcement division director.

"(Velsicol officials) have demonstrated to us in the last 30 days a complete turnabout in their attitudes towards environmental problems," Traina said.

"I'm very encouraged by the attitude of the company and what they've done with this particular case in Hardeman County," the Atlanta-based executive said.

"Given Velsicol's past track record, it's unusual that we're talking to Velsicol," Traina said.

EPA is reserving its right to take legal action against the company, Traina added.

EPA and state water quality control officials were in the Toone-Teague Road area Wednesday for an inspection, Traina said.

Bruce Granoff, EPA attorney assigned to the Toone-Teague Road problem, said Wednesday, "It's about time we get this thing out in the open where the U.S. Geological Survey, the state, the EPA and the company can meet face to face instead of each one going on its own to solve the problem."

Both officials said no decisions are expected today.

Late last week Velsicol announced that independent testing by Geraghty and Miller Inc., nationally known ground water geologists and hydrologists, indicated Velsicol's wastes were responsible for contamination in community wells.

The company has agreed to pay the residents' tap fees for a water line extension rom Toone, making the residents eligible for $240,000 in loans and grants from Farmers Home Administration and the Department of Housing and Urban Development.

Velsicol says it will pay for the water tap fees even if it's later proven that the pollution is not coming from the company's nearby chemical dumpsite.

Area residents,

meanwhile, have had their water supplied in large tanks by Civil Defense and National Guard units.

Residents like John Boyd, in whose well the toxic chemicals were first found last December, have turned off their hot water taps all together. He and his wife, Ethel, now drive miles to Chickasaw State Park to take showers, Mrs. Boyd said this morning.

Boyd and his neighbors are discouraged because state and federal officials have taken so long to supply the area with a permanent fresh water supply. They say they plan to file a class action lawsuit against Velsicol, despite the company's recent promises.

The Jackson Sun, Thursday, October 26, 1978

Toone-Teague Residents To Tell Plight In Washington

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Two residents of Toone-Teague Road will explain their plight to get relief from polluted community wells Monday when they appear before a Congressional subcommittee in Washington.

Christine and Woodrow Sterling, in whose wells 17 toxic chemicals have been found by state water quality officials, are scheduled to appear before the House Commerce Subcommittee on Oversight and Investigations.

Chaired by Rep. Albert Gore Jr., D-Carthage, the subcommittee will also consider New York's Love Canal pollution problem.

"We are very concerned that the federal government has not taken the proper steps to protect the public from the health hazards posed by the improper handling or disposal of toxic wastes," Gore said Wednesday.

The hearing will focus on the failure of the Environmental Protection Agency to develop controls for hazardous waste materials as required by a 1976 law, Gore noted.



Woodrow and Christine Sterling, center, residents of the pollution-plagued Toone-Teague Road in Hardeman County, will appear Monday in Washington before a House subcommittee to explain their year-long quest to get fresh water.

"There are countless communities across the country like Toone where food and drinking water supplies have been contaminated because toxic or dangerous chemical wastes have been improperly discarded," he said.

The Sterlings, whose travel expenses are being paid by the government, said they are prepared to explain the trouble they have had getting fresh water piped in to their community and the months it has taken to get public officials involved.

"I really think people ought to stand up and take notice of all the landfills. I think there are going to be problems like this that are going to have to be faced all over the country," Mrs. Sterling said.

Besides the Sterlings, Gore said two New York congressmen, an EPA official and an assistant attorney general from Illinois are expected to attend. Representatives from the Environmental Defense Fund and Citizens For A Better Environment are also set to appear, Gore noted.

Between 1964 and 1972, Velsicol Chemical Corp. dumped 16.5 million gallons of toxic chemicals in the company's dumpsite less than half a mile from the nearest community well in the Hardeman County area.

The company was ordered in 1972 to stop dumping by state Department of Public Health Commissioner Eugene Fowinkle and the company began burning its wastes out of state, company officials have said.

Velsicol officials have recently announced that the pollutants found in the wells were probably coming from the dumpsite and have offered to pay the fees of 30 area residents to tap onto a fresh water line.

Area residents claim they will file a class lawsuit against Velsicol unless the company provides a permanent solution to their problem.

The Jackson Sun, Jackson, Tennessee, Sunday, October 29, 1978

Toone-Teague Story To Be Told On TV, In House Hearing

By SUE ANN TANZER ROBERTS
Sun Reporter

WASHINGTON — The story of 34 Toone-Teague Road families who seek relief from their polluted community wells will be told to the nation Monday on "Good Morning America."

Woodrow and Christine Sterling, in whose well 17 toxic chemicals were first found last December, will be interviewed about the pollution problem in their rural Hardeman County area on the show, aired from 7-9 a.m. on WBBJ-TV.

The Sterlings will be in Washington Monday to testify before the House Commerce Subcommittee on Oversight and investigations, chaired by Rep. Albert Gore Jr.

Gore, also to be interviewed on television, said the hearing will focus on the failure of the Environmental Protection Agency to develop controls for hazardous waste materials as required by a 1976 law.

He and the Sterlings say they are concerned that similar cases where toxic or hazardous chemical wastes have been improperly discarded will be cropping up in other parts of the country.

The Sterlings said they are prepared to explain the trouble they have had getting fresh water piped in to their community and the months it has taken to get public officials involved.

Others expected to testify include two New York congressmen on New York's Love Canal pollution problem, an EPA official and an assistant attorney general from Illinois.

Representatives from the Environmental Defense Fund and Citizens For A Better Environment are also set to appear, Gore noted.

Between 1964 and 1972, Velsicol Chemical Corp. of Memphis dumped 16.5 million gallons of toxic chemicals in the company's dumpsite, located less than half a mile from the nearest community well in the Toone-Teague area.

Velsicol officials have recently announced that pollutants found in the wells probably were coming from the dumpsite and have offered to pay fees for 30 area residents to tap onto a fresh water line.

October 30, 1978

Gore Probes EPA's Inaction

By SUE ANN TANZER ROBERTS
Sun Reporter

WASHINGTON — Rep. Albert Gore Jr., D-Tennessee, told a House subcommittee this morning he wants answers to hard questions about why federal regulations governing hazardous chemical waste disposal are not being enforced.

Gore chaired today's hearing at which a Hardeman County couple appeared to tell the plight of their polluted wells.

THE TENNESSEE congressman said a 1976 Congressional act was designed to develop regulations to manage hazardous waste problems like those that have cropped up in Hardeman County's Toone-Teague Road wells and New York's Love Canal.

But Gore said the Environmental Protection Agency regulations, to have been effective in April, now will not be in use before 1980.

"America has been pockmarked with thousands of cancer cesspools. EPA drags its feet to avoid facing the magnitude of the threat," Gore told the subcommittee in his opening remarks.

"Rusting and busted 55-gallon drums are not a sensible final resting place for powerful poisons and carcinogenic industrial chemicals," he noted.

The 1976 act is "a strong law with a clear mandate directing the U.S. Environmental Protection Agency to bring this problem under control," Gore said.

EPA has had 18 months to promulgate regulations which would bring this health threatening environmental problem to an end, the congressman said.

Gore called for EPA to take an inventory of hazardous waste sites, monitor the sites and take action on potentially dangerous sites.

Gore appeared on ABC TV's "Good Morning, America" show today with Woodrow and Christine Sterling, residents of the Toone-Teague Road in whose community wells toxic chemicals have been found.

"WE HAVE witnesses from EPA today and we're going to have some tough questions for them — like why haven't they done the job we ordered them to do," Gore said on national television.

"The congressman proposed that EPA take a long look at its priorities and deal with the real threat to public health.

He criticized EPA for spending about $40,000 on a two-year study "to find out that run-off from open stacks of cow manure on Vermont farms causes pollution of the water in nearby small streams.

ALSO ON the program, Mrs. Sterling told ABC Washington correspondent Betina Gregory she had suffered stroke-like symptoms and numbness of the limbs from what she believes to be drinking of polluted water.

"My father is 100 percent disabled from the very same symptoms," she

said of J.D. Boyd, another resident of the rural Hardeman County area. Mrs. Sterling noted, however, that her doctor was unable to link the symptoms with chemicals found in the water.

After the show, her husband said he hopes today's hearing will "put EPA where it should be — on the side of the people of Tennessee — rather than on the side of the company."

The company is Velsicol Chemical Corp., a Memphis-based chemical company which owns a 243-acre chemical dump site within a mile of the tainted wells. The company has admitted that the chemicals could be coming from the site into the water supply. Between 1964 and 1972, about 16.5 million gallons of toxic chemicals were dumped by the company at the site, a company spokesman has said.

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The Jackson Sun, Jackson, Tennessee, Tuesday, October 31, 1978 5

Official Tells Of EPA Inaction

By SUE ANN TANZER ROBERTS
Sun Reporter

WASHINGTON — An Environmental Protection Agency official said Monday he was ordered earlier this year by his superiors to halt his search for health-threatening chemical dumpsites, like one in Hardeman County.

Hugh B. Kaufman, manager of EPA's Hazardous Waste Management Divison assessment program, was one of several EPA officials to testify before a House subcommittee studying the problems of chemical waste disposal.

"On July 16, 1978, we were ordered to stop looking for imminent hazards by the head of EPA's Office of Solid Waste. This order is still in force," Kaufman testified.

A 1976 FEDERAL law called for development of regulations to deal with hazardous waste problems like those that have arisen in the Toone-Teague Road wells of Hardeman County and the Love Canal in New York. But EPA representatives said Monday the regulations, to have been effective in April, will not be ready until 1980 at the earliest.

Realizing the delay, Kaufman said he proposed that the agency begin to look for hazards rather than continue its policy of not searching out and assessing environmental and health damages.

He said he found potentially hazarous cases in Seymour, Ind., and Deerfield, Ohio.

"However, trying to get the appropriate EPA regional offices to take action against these facilities proved to be an almost insurmountable obstacle," Kaufman told the subcommittee.

In talking to regional officials, Kaufman said he discovered they have files of other cases that pose a threat to health, but the regional offices said they do not plan to look into the cases.

"They also told us to stay out of the case, and when we raised the issue to management, we were also turned off the case," Kaufman testified.

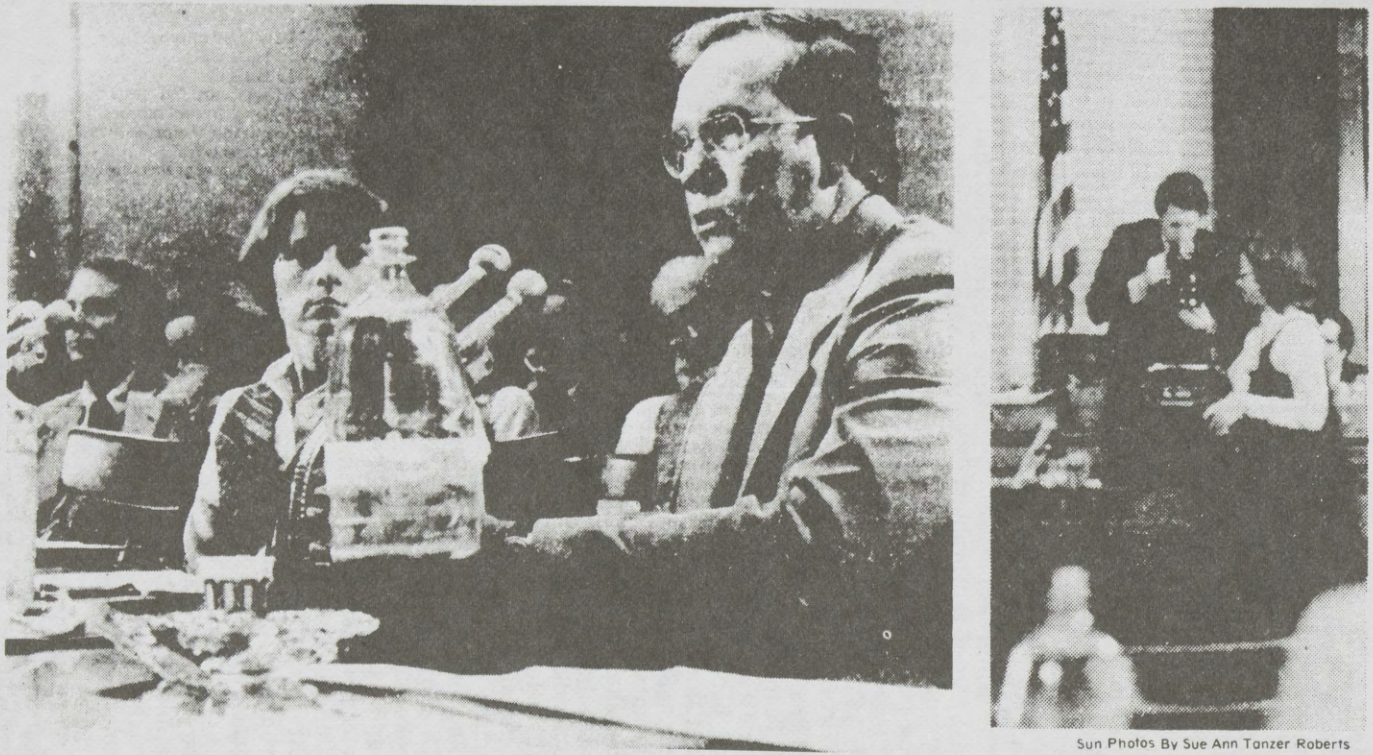
KAUFMAN CALLED for EPA regional office files to be scrutinized, other sources of information sought and the public as well as appropriate government officials alerted to any dangerous hazardous waste disposal sites.

He also recommended to the subcommittee that "suitable enforcement action should be initiated."

Thomas Jorling, EPA's assistant administrator for water and waste management, assured the subcommittee the agency is moving with "all prudent dispatch" to provide solutions to national pollution problems.

Jorling said the job of looking into disposal sites has been shifted from the solid waste management to the enforcement division of the agency.

"We have to look at the resources we have and who can best do what," Jorling testified.



Sun Photos By Sue Ann Tanzer Roberts

Christine and Woodrow Sterling, Toone-Teague Road residents whose community wells have become chemically polluted, testified Monday before the House Commerce Subcommittee on Oversight and Investigation in Washington. With them, the Sterlings brought bottles of water from their wells, which Rep. Albert Gore Jr., D-Tenn., at right, sniffs.

Rep. Albert Gore Jr., D-Tenn., who chairs the subcommittee, told Jorling he was concerned that EPA officials were being told not to do their jobs.

"It concerns me that there are thousands of cancer cesspools all over this country and people in EPA have been given the impression from higher up that they shouldn't look into this," Gore said.

The congressman said just because the problem of groundwater contamination is huge is no reason not to look into it.

WOODROW STERLING and his wife Christine of the Toone-Teague Road, in whose wells toxic chemicals have been found, also testified Monday.

Mrs. Sterling told the subcommittee of the problems she and her family and neighbors have had from wells that are within a half-mile of a Velsicol Chemical Corp. pesticide dump.

She told how her father, J.D. Boyd, had had a stroke, and others in the neighborhood had suffered from a number of unexplained illnesses.

Sterling told how his father had developed respiratory difficulties until he quit drinking the water from his well. His wife explained how a baby had been born with a deformed stomach that required surgery.

"We took our family on a vacation to Georgia for 10 days. When we got back we all got sick with severe nausea and headaches," Mrs. Sterling told the committee.

The Sterlings said they have been deceived by many local, state and federal environmental officials and that it was not until they arrived in Washington for the hearing Sunday that they learned there was an unusually high level of carbon tetrachloride in their water.

Gore confirmed that water samples obtained form the Sterlings's well and tap indicate at least six suspected carcinogens in the family's drinking water.

CARBON tetrachloride was found in concentrations approximately 2,400 times the maximum daily exposure suggested by the National Institute For Occupational Safety and Health as safe for workers, Gore noted.

"Carbon tetrachloride is acutely toxic and is readily absorbed in the body. Some scientists believe chronic and subchronic ingestion or inhalation may cause a variety of ailments, including kidney, liver, lung and central nervous system damage," Gore said.

When EPA found carbon tetrachloride in the Ohio River in 1976, it cautioned the public not to drink the water without boiling it, Gore said. "The level of carbon tetrachloride in the Sterlings' well is at least 48 times the level found in Cincinnati's drinking water during the period

warnings were in effect," Gore noted.

The Sterlings begged environmental officials for answers. They were advised by the subcommittee not to use their well water for any bodily purpose, including bathing and washing dishes.

Mrs. Sterling said she has repeatedly asked EPA for advice but was unable to get a straight answer. "I was just told we were a very low priority."

She said she knows her life will probably be shortened by extended ingestion of the chemicals, but needs to know whether her three daughters and son will have deformed children because of exposure to the chemicals.

"If anything, we have got to know this," she said.

Between 1964 and 1972, about 16.5 million gallons of toxic chemicals were dumped by the company at the site. Company spokesmen have admitted its disposal site may be responsible for the polluted wells.



An appearance on ABC-TV's 'Good Morning America' Monday, complete with a professional make-up job, was part of Woodrow and Christine Sterling's itinerary while they were in Washington for a House subcommittee hearing.

Sun Photo By Sue Ann Tanzer Roberts

Sterlings' Reaction Mixed On Government's Role

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Woodrow and Christine Sterling, whose tainted community wells brought them national attention Monday, say they have mixed feelings about government's involvement in their problem.

The Sterlings brought their problem to the nation's attention Monday by their early-morning appearance with Rep. Albert Gore Jr., D-Tenn., on ABC-TV's "Good Morning America" and before a House subcommittee.

Mrs. Sterling is critical of the Environmental Protection Agency's failure to warn her and her family that carbon tetrachloride, a toxic chemical, was found in concentrations 2,400 times the safe level in their drinking water.

But she says she is also encouraged that legislators like Gore and Sen. Jim Sasser, D-Tenn., have diligently sought grants for fresh water and probed EPA to make the project a high priority.

The mother of four breaks down when she talks about her year-long struggle to get information on health effects of the 17 toxic chemicals that have been found in her well water.

"Words cannot describe how I feel. They should have given us the information when we were begging for answers. I feel (EPA officials) should have been running to us with the answers," Mrs. Sterling said, frustrated and exhausted after the two-day Washington trip.

But she was encouraged by the testimony of EPA's Hugh Kaufman, who said the agency ordered him to stop looking for health hazards.

"(Other EPA officials) really said to forget about us," Mrs. Sterling said.

"I feel the (Hardeman) county (health) officials have done nothing and care about nothing. They don't care about the people. All they care about is keeping their jobs," she added.

State officials have deceived the Toone-Teague Road community too, she said. "They knew about (chemical pollution) for years before we knew about it. I felt they should have told us."

Things have changed for the Sterlings since

November, when toxic chemicals were discovered in their well.

"Last November we were like everybody else, going our merry way. Now we're involved in what's happening and I wouldn't have it any other way," Mrs. Sterling said.

The road to Washington has not been easy. She has had her telephone temporarily disconnected because neighbors turn to her for information. She said some do not understand why she can't test their water for possible pollution.

Mrs. Sterling said that while she is vitally interested in the community's welfare, she and her family were losing quiet time alone as a family. The neighbors now stop by to talk in person to the community spokesmen.

The Jackson Sun
2-A Wednesday, November 1, 1978

Toone-Teague Just Start Of Chemical Nightmare

Mark well the names Toone-Teague, Love Canal and Deerfield.

They are names that could go down in history books as signalling the beginning of a national public health menace that crept up on us unawares.

The menace is the carcinogenic chemical "fallout" from an estimated 20,000 industrial waste dumps that have pockmarked the face of the country the past three decades. They already contain millions of tons of lingering hazardous chemicals. They yearly will receive an estimated 92 billion pounds of additional chemical wastes — of which only about 7 percent will be disposed of safely.

THE RESULT, AFTER the metal drums corrode and the chemicals begin to leach into nearby groundwater, are places such as Toone-Teague Road in Hardeman County, where people such as Christine Sterling already have crossed the threshold into a nightmarish situation in which many thousands, perhaps millions, of Americans will eventually find themselves.

Mrs. Sterling and her husband testified Monday before a House subcommittee, headed by Tennessee Rep. Albert Gore Jr., which is investigating the magnitude of the problem and the Environmental Protection Agency's failure to adequately deal with it.

The Sterlings presented powerful testimony on the hopeless frustration they've felt in the 11 months since their rural well water was knocked out by pesticide residues from a nearby chemical dump.

IN THOSE MONTHS they found, to their utter dismay, that although many of the chemicals they drank with their tap water have been produced for years, no one could tell them what damage may have been done to their bodies and their children's bodies.

They also found that the state could be maddeningly reluctant to deal forthrightly with a health hazard threatening a score of families — and perhaps West Tennessee's entire water supply.

And they found the federal government to be even less help.

The hearings, which were the first concrete sign Washington was paying their predicament more than passing notice, dealt the Sterlings a double blow. They learned, for the first time, that water they had been told was "probably safe" to cook, bathe and wash clothes in contained 2,400 times the level of carbon tetrachloride considered acceptable for human exposure. In industry, carbon tetrachloride is handled only with rubber gloves and is considered dangerous to breathe.

Somehow, the dangerous chemical previously had been missed in tests run by the state and in federal laboratories.

PERHAPS EVEN MORE incredibly, the hearings revealed that a 1976 federal law, if carried out according to the original time schedule, might have helped alert the Sterlings and their neighbors to the threat of the nearby chemical dump and thus decreased the chance of their exposure to it. The law also would have provided funds to immediately tackle the problem with coordinated state and federal efforts instead of the tediously slow, poorly conducted investigation carried out by the state.

The measure, called the Resource Conservation and Recovery Act, sets out a sane national policy for safe disposal of chemical wastes and establishes

procedures that would locate and neutralize existing hazardous waste sites. The law would have required the state to publicly list the Hardeman County chemical dump as a possible hazard about a year before the chemicals first appeared in the Toone-Teague Road well water.

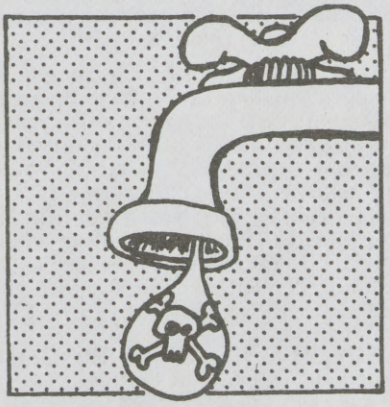
The reason the law hasn't yet gone into effect is that the Environmental Protection Agency has dragged its feet in promulgating the extensive regulations required by the law. EPA officials, who once assured that the 18-month deadline for carrying out the entire law would be reached, now say it will be 1980 before the law can be applied.

In that time another estimated 160 billion pounds of dangerous chemicals will be discarded to worsen existing chemical time bombs or create new ones in thousands of communities and rural areas across the country.

REP. GORE, WHO GREATLY deserves commendation for his efforts to bring this before the public, made a poignant comment during the hearings. He said:

"The threat posed by hazardous wastes may be the environmental sleeping giant of this decade. Hundreds of billions of pounds of these toxic wastes are now polluting our environment and jeopardizing public health. EPA has been charged with the responsibility to solve this problem. And yet, we learn (from Senator Proxmire) that EPA has spent close to $40,000 in a two-year study 'to find out that runoff from open stacks of cow manure on Vermont farms causes the pollution of the water in nearby small streams and ponds.' What are EPA's priorities? What has EPA been doing since the RCRA law passed? How soon can we be assured that EPA is on the right track and has made progress in vigorously attacking this problem?"

When it has, in how many more cases will it be too late?



The Jackson Sun, Jackson, Tennessee, Thursday, November 9, 1978 7

Toxin Traced In Toone City Water

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — Traces of a toxic chemical have been found in the Toone city water supply and nearby Pugh Creek.

John Moebes, of the Environmental Protection Agency's enforcement division, said traces of carbon tetrachloride were found in water samples. Water is being tested in two laboratories today and Friday to verify the results.

THE CHEMICAL was found in the city wells in a concentration of 13 parts per billion, Moebes said. He calls 50 parts per billion "the concern level."

Moebes said EPA did not think the city water would become contaminated after nearby community wells on the Toone-Teague Road were found to contain about 17 toxic chemicals.

Velsicol has said those chemicals could have seeped from Velsicol Chemical Corp.'s 243-acre dumpsite, located within a mile from tainted wells.

Rich Blewitt, vice president of public affairs of Velsicol, said this morning the company had not been notified that carbon tetrachloride had been found in Toone's water supply.

"We're trying to determine why carbon tet is in the Toone water supply. Any time you find something in the water, you're concerned," Moebes said.

EPA officials are trying to determine the amount of chemicals coming from the dumpsite, Moebes said.

"Right now we can't say (the pollution) is coming from that dump," Moebes noted.

TESTS OF Bolivar's water supply revealed no traces of the chemicals, he noted. But several other of the chemicals were found in Pugh Creek, he said.

The fresh discovery may put a proposed water line from Toone to the distressed Toone-Teague Road in jeopardy.

Terry Cothron, of the state Divison of Water Quality Control, said if carbon tetrachloride is found in the water samples, "We have a whole new ballgame."

"It just doesn't make any sense that some carbon tet should be found in the Toone wells," Cothron said. "I think it's a fluke. It could be an analytical fluke."

Toone residents have not been warned against drinking city water pending the additional tests.

Plans to install a fresh water line from Toone to the Toone-Teague Road will continue, Cothron said, until the tests are verified.

Bids to install a storage tank and fresh water line will be opened at 2 p.m. next Thursday at a special meeting of the Toone city board.

THE PROJECT will be paid for with an 87½ percent grant from Farmers Home Administration and

the Department of Housing and Urban Development. Also, a $30,000 FmHA loan will help fund the project, to be paid back through water rates over the next 40 years.

Meanwhile, 11 residents of the Toone-Teague Road say they are considering selling their property to Velsicol Chemical Corp. of Memphis.

Velsicol officials are negotiating with residents, their attorney and state and federal water quality officials about buying the property. The sides have not agreed on a price.

"We're trying to make a deal with them. We want to sell and get out. We've taken this risk too long now," said Christine Sterling, who has testified in Washington, D.C., of her community's plight.

"We're not even supposed to use our toilet anymore," said Mrs. Sterling. "We're trying to sell to Velsicol. Nobody else is going to buy these houses."

The Sterlings are one of about 35 families whose community wells have been polluted. Among the chemicals is carbon tetrachloride, a substance health officials have told residents should not touch the skin or be ingested.

CARBON tetrachloride was found in concentrations about 2,400 times the maximum daily exposure suggested by the National Institute for Occupational Safety and . Health.

For months, some area residents have traveled miles to Chickasaw State Park to take showers. Water has been trucked in for drinking, washing dishes and other uses.

> But some residents, ignorant of effects of the chemicals are still drinking and using the water for all normal functions. Mrs Sterling noted. "(Environmental officials) told us we can't even grow a garden because the soil is contaminated."

She and her neighbors, hoping uncontaminated water would be available before now, say they can wait no longer for relief.

"We have a chance to get out. We're going to take it," she said. "And Velsicol said if we quit using our water, maybe they could slow (chemical flow from the dumpsite) down or stop it That's what we want."

The Sterlings considered selling their home on the open market, but realtors said it probably wouldn't sell.

NEARBY. Robert and Bonnie Cox, whose wells have not been found polluted, have had their home for sale since August. They have moved to avoid possible dangers from the water.

Only three people have looked at the house since it was put up for sale. "We couldn't learn anything definite about our water situation. It scared them off," Mrs. Cox said.

Their realtor, Bob Blackman of Jackson Realty Co., said Wednesday, "There might as well be a skull and crossbones outside. It's going to be impossible to sell that one It might as well be in the Forked Deer River bottom."

Just up the road, some concerned citizens have erected a handpainted sign bearing a skull and crossbones warning visitors they are in a poisoned area.

2nd Toone Water Sample Found Untainted

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — No traces of carbon tetrachloride were found in a second sampling of Toone city water, an Environmental Protection Agency biologist said this morning.

"We feel like there is nothing there and the first samples are in error," said Bob Humphreys, EPA Region 4 director of external affairs in Atlanta. "We found no trace of contamination whatsoever."

EPA REVEALED Thursday the deadly chemical was found in the city wells in a concentration of 13 parts per billion. John Moebes, of the EPA's enforcement division, calls 50 parts per billion "the concern level."

Although the most recent results are negative, Humphreys said the agency plans to return to Toone to take more water samples Monday and Tuesday "just to be sure."

Then the EPA will be back to sample the Hardeman County city's water regularly, he said. "If next week's tests appear negative, the sampling will only be done once a month just to be sure."

Humphreys said he does not know why the carbon tetrachloride showed up in the first water sampling.

"We really don't know, except that the levels we found were so close to the limits of detection that we feel somewhere along the line some carbon tetrachloride — a common substance — might have been left over from washing the bottles" in which the samples were taken, he said.

TOONE Mayor A. E. Smith said this morning he is relieved contamination was not found in the city's wells.

"I feel good about that. I was worried yesterday," Smith said. "My telephone has been ringing."

Discovery of the chemical in city wells in the second test could have jeopardized a proposed water line from Toone to nearby Toone-Teague Road.

About 17 toxic chemicals, including 2,400 times the safe level of carbon tetrachloride, have been found in five community wells in the community just a few miles from Toone.

Bob Polk, Toone's city engineer from TLM and Associates of Jackson, said bids are still being received for the project and will be opened at Thursday's meeting of the city board.

The fresh water line projects include erection of a storage tank and fresh water line from the city's wells.

The project will be paid for with an 87½ percent grant from the Farmers Home Administration and the Department of Housing and Urban Development. A $30,000 FmHA loan to be paid back through water rates over the next 40 years also has been approved.

MEANWHILE, Toone-Teague Road residents — who are no longer able to use their water for almost any purpose — are negotiating with Velsicol Chemical Corp. of Memphis to sell their homes.

The company has offered to buy the property, devalued by the nearby tainted community wells, bu t the parties have not agreed on a price.

Between 1964 and 1972, about 16.5 million gallons of toxic chemicals were dumped by Velsicol at the site. Company spokesmen have admitted its disposal site may be responsible for the polluted wells on the Toone-Teague Road.

The Jackson Sun, Jackson, Tennessee, Wednesday, November 15, 1978 3

Toone To Proceed With Water Line Bid

By SUE ANN TANZER ROBERTS
Sun Reporter

TOONE — The city board says it will proceed with Thursday's bid opening for a $240,000 water line extension project to Toone-Teague Road, despite some concern that the community's residents may be moving out.

Aldermen said Tuesday night they fear the city will be responsible for repaying a $30,000 Farmers Home Administration loan over the next 40 years if the residents leave the small community, which is a few miles from the city.

FmHA OFFICIALS have said the water line would be repaid by about 30 Toone-Teague residents, each paying about $10 a month in water bills for about 40 years.

If the residents move, the board said it is not prepared to assume the debt.

In a letter to the board, however, Fred C. Billings, Velsicol Chemical Corp. industrial relations manager, assured Toone Mayor A.E. Smith Sr. the company will assume the monthly payment if it buys the homes.

The company has offered to buy several homes with wells polluted by what Velsicol officials have admitted are chemicals seeping from a Velsicol dump. Residents and their attorneys have rejected the offers, which Billings would not reveal. He said negotiations are continuing this week.

Several Toone-Teague Road families say they plan to sell their homes and land as soon as they can get a reasonable price for their property. They say even with the new water line, their property will be worth little.

"We can assure you that if Velsicol does buy any or all of those properties, we will assume the minimum monthly charge (water bill) for that property," Billings wrote to the mayor in a letter dated Nov. 9.

The proposed minimum monthly charge is $6.25.

THE CITY was able to get an 87½ percent loan from FmHA and from the Department of Housing and Urban Development because it agreed to underwrite the $30,000 loan for the project.

Velsicol officials admitted in October chemicals may have seeped from its 243-acre chemical dumpsite, polluting wells about a mile from the site. About 16.5 million gallons of toxic chemicals were dumped at the site between 1964 and 1972, when the company was ordered to stop dumping by the state public health commissioner.

Company spokesmen say wastes are presently burned out of state. Billings told the board Tuesday that Velsicol has begun installing a two-inch fresh water line in the area connected to a 10,000-gallon tank. The tank will be filled frequently with water from Jackson, he said.

This will not replace the $240,000 line from Toone, he explained. It will provide immediate fresh water for community residents.

The company also is replacing plastic plumbing in affected homes on the rural Hardeman County road, Billings said. Plastic pipes in the homes are unsafe because they could have absorbed some of the chemicals, he explained.

ALDERMEN WERE critical of state and federal environmental officials for not informing them of the recently discovered carbon tetrachloride found in one test of city well water until several days after it was discovered.

The chemical was not found in a second test, explained Terry Cothron of the state water quality division. He pledged to try to keep the city better informed in the future.

The mayor asked Cothron what will happen if the first test is confirmed or if other chemicals are found in the city water supply.

"Then I believe we'll be running a line from Bolivar — or we may have to go to the Gulf of Mexico," Cothron said, half jokingly. "Nobody knows what's going on 120 feet below the ground."

Billings said independent hydrology (water circulation) tests his company has done indicate "there is no way that (toxic chemicals) can get to your water supply. That's all I can tell you."

Cothron said to ensure that chemicals have not polluted the water supply, he will propose a regular well monitoring program.

HE SAID IT would cost about $350,000 to sink wells with stainless steel casings and to test for pollutants without contaminating the water supply further. It will take another $420,000 a year to run the program, he said.

"The water line, however, is our highest priority," Cothron said. When that is complete, Cothron said his division probably will monitor the area for several years for chemical movement underground.

The board asked Billings whether Velsicol would be willing to pay the $30,000 loan obligation to FmHA if the city agreed to maintain the proposed water line.

Billings said he would bring the proposal to his superiors and have an answer as soon as possible.

Bob Polk, city engineer, said without the $30,000 burden, the city would need only 10 water customers on the line to pay for line maintenance.

Water Quality Engineer Pat Patrick of Jackson told the board the new line would help a three-inch water line along Tennessee 100 which has "extremely low pressure." She said its booster pump needs replacement, and the city is near its maximum pumping capacity, just barely meeting its demand.

The new line also would serve some city water users.

The Jackson Sun, Friday, November 17, 1978

Toone Opens Bids On Waterline

TOONE — Bids for the six-mile water line from Toone city wells to the Toone-Teague Road came in below engineering estimates Thursday afternoon.

The project will be paid for with $240,000 in grants and a loan from Farmers Home Administration and the Department of Housing and Urban Development. If the city board accepts low bids, it will cost $211,811 plus engineering costs.

The water project was divided into two contracts, the first for a six-mile water line and pump station and the second for a 150,000-gallon water storage tank.

The Jackson Sun
2-A Tuesday, November 21, 1978

Toone Water Cleared

TOONE — Environmental Protection Agency officials say a sampling error caused traces of carbon tetrachloride to show up in the Toone city water supply about two weeks ago.

A sample taken last week showed the Hardeman County town's water supply is not contaminated, Bob Humphreys of EPA's regional office in Atlanta said Monday.

EPA REPORTED Nov. 9 that carbon tetrachloride had been found in water samples from city wells in a concentration of 13 parts per billion, well below the 50 parts per billion one EPA official called "the concern level."

The second and third samples showed no traces of the toxic chemical, however, leading officials to suspect that some contamination of the water samples had occurred in the laboratory.

Humphreys said Monday the third tests confirm suspicions that the traces of carbon tetrachloride were "apparently a spurious artifact."

He said the traces showed up because of some sampling error but the cause of "such a small level would be difficult to pinpoint."

The biologist said the contamination may have occurred when water samples were placed in bottles that contained carbon tetrachloride residue or in the laboratory when the water was transferred to other containers.

Although EPA experts believe the first test was in error, Humphreys said they will continue to make periodic tests of the city's water. The tests will probably be made monthly instead of on a weekly basis, however.

Toone officials were concerned by the first test results, since they plan to extend city water to the Toone-Teague Road about six miles away, where toxic chemicals have polluted five community wells.

AMONG THOSE chemicals, carbon tetrachloride has been found in concentrations 2,400 times the safe level.

The community wells are about a mile from a chemical dump site where Velsicol Chemical Corp. of Memphis deposited waste chemicals for an eight-year period. Velsicol has admitted its dump may be responsible for the polluted wells, and the company is negotiating to buy property in the affected area.

38-748 0 - 79 - 20

6 The Jackson Sun, Jackson, November 26, 1978

Toone-Teague Residents Connect To Fresh Water Tank



By BETTYE ANDERSON
Sun Reporter

TOONE — Ten Toone-Teague Road houses were connected this weekend to a fresh, temporary water supply paid for by the same company whose waste chemicals may have polluted the residents' wells.

Velsicol Chemical Corp. had a two-inch water line installed in the area and connected to a 10,000-gallon tank to supply water for community residents until a $240,000 line from Toone is completed. The tank is to be filled with water from Jackson.

Plumbers Friday replaced plumbing in the last of the 10 affected homes on the rural Hardeman County road. Lines were connected to the tank-pump system Saturday.

However, no water was turned on because of leaks in the two-inch line and because the water tank needs cleaning, said John D. Boyd, property owner where the new tank is buried. He said plumbing has been replaced within the past two weeks at the homes.

Some residents are now using water from a gasoline company tank which is to supply water to the new tank, he said.

Residents said plumbing, hot water heaters and washing machines are all being replaced by Velsicol because the Environmental Protection Agency

(EPA) says they could have absorbed some of the chemicals.

Meanwhile, residents said Friday they have turned down an offer from Velsicol of $1,000 each for damages and said they expect to file a lawsuit this week against the company.

The newly installed water tank is about a mile from the 243-acre chemical dumpsite from which Velsicol officials have admitted that chemicals may have seeped into community wells.

About 16.5 million gallons of toxic chemicals were dumped at the site between 1964 and 1972, when the company was ordered to stop dumping by the state public health commissioner.

Velsicol placed a water-filled tanker in the community about two weeks ago, but residents say the water is not drinkable.

"The tank water is not fit for much," said David Grantham. "We're still hauling drinking water from Bolivar," he said, adding that his family has not been able to use the tank water "because it's rusty colored and ruins our clothes." Mrs. Grantham said she makes trips twice a week to Bolivar (about 12 miles away) to wash the family's clothes at the laundrymat.

"You buy a washer and dryer because you need them and still can't use them," she complained. "We have to heat water on the stove if we want hot water."

"The worst part is we don't have any bathroom facilities," said Grantham.

"When you get up at 6 a.m. and it's pouring down rain and you've got a child who needs to go to the bathroom — well, it's tough to grab an umbrella and head for the woods," said Nell Grantham.

"There's no way we could put a price on the damage we've suffered. How can you put a price on such inconvenience?" Grantham asked.

Resident Woodrow Sterling said Velsicol has made no substantial offer to the residents to buy their property. "(Velsicol officials) said at first they would pay $4,000 a family plus what was in some sealed envelopes they had, but we didn't think too much of that idea," Sterling explained.

The residents said they still see no relief even after the new water line is opened.

Mrs. Grantham said the EPA has ordered them not to eat food in residents' freezers and home canned foods on their shelves.

"We spent weeks picking blackberries and shelling peas for the freezer. It was a lot of hard work preparing and canning food they now say we'll have to throw away. How do you put a price on that?" she asked.

Boyd said Velsicol hasn't said what it plans to do to stop the leakage from the dumpsite and the spread of chemicals in the area.

"(Velsicol officials) told us (stopping the leakage) was a few steps ahead of them," Boyd said.

Boyd said he was also told he could not reap the fruit from apple and peach trees on his property when they start to bear fruit next year and other residents said they were told they could not plant vegetable gardens because of chemical absorption.

"I wish there was some magic word you could say and all this would go away," said a sad-faced Grantham.

"People just don't realize how awful this is. I guess the only thing we can do is just work hard at finding a solution to the situation."



Sun Photos By Bob Arnold

At top, some residents are getting water from this gasoline company tank, which is to supply water to a buried 10,000-gallon water tank that was connected to a two-inch water line Saturday. Above, the last of 10 Toone-Teague houses affected by water-polluting chemicals was connected to a new two-inch water line Saturday at the expense of Velsicol Chemical Co.

The Jackson Sun, Jackson, Tennessee, Wednesday, November 22, 1978

EPA: No Easy Solution To Dumps EPA Study Released

By The Associated Press

There is no simple, quick solution to the problem of waste dumps that can leak toxic chemicals into the environment, warns the Environmental Protection Agency.

It is especially difficult to deal with dumps no longer in use, but which may still be leaking dangerous substances.

"EPA'S AUTHORITY TO clean up inactive sites is quite limited," said EPA administrator Douglas Costle in Washington. "We can take enforcement action against the owner of an inactive site to require clean-up if the site is an imminent and substantial danger to human health or the environment."

But Costle said owners of the dumps often do not have enough money to clean them up.

He commented Tuesday in releasing results of a nationwide EPA survey of dump sites that may contain significant amounts of hazardous chemicals.

One of those dumps is in Hardeman County, where Velsicol Chemical Corp. of Memphis buried chemical wastes for an eight-year period. Velsicol has admitted the dump may have been responsible for the pollution of several community wells on the Toone-Teague Road.

The company has begun installing a water line to provide immediate relief to residents of the area and is negotiating to purchase property of residents affected by the polluted wells.

Other Tennessee locations cited in the report were a dump for the city and Champion Paper Co. at Waynesboro and a landfill-incinerator deposit area for Westplex, Inc. in Jonesboro.

EPA ESTIMATES THERE are 638 sites which may contain "significant quantities of hazardous wastes which could cause significant imminent hazard to public health."

In all, it says there are probably more than 32,000 dumps that may contain harmful chemicals in varying amounts.

Among the estimated 638 sites considered to contain the most potential danger are 103 confirmed dumps on which the EPA has compiled statistics.

"Enforcement actions and-or remedial efforts have been taken at a large percentage of the sites," the EPA announcement said.

Costle said the 103 were not necessarily the most dangerous, but merely the ones on which the EPA had the most specific information.

The 638 figure contained in the broader estimate was derived by EPA's Washington headquarters asking its 10 regional offices for "rough estimates" based "on knowledge about present and past industrial activity and present and past disposal practices in each region."

THE CHEMICAL DUMP SITES range from sludge pits that slowly leak harmful chemicals into water supplies to collections of metal drums that eventually leak and spill their dangerous contents into the environment.

Costle estimated from 30 million tons to 40 million tons of toxic wastes are produced each year and that 80 percent to 90 percent of it "is being disposed of in ways which will not meet the forthcoming standards."

EPA is in the process of proposing regulations to insure the proper disposal of toxic wastes and expects to have them completed in a few weeks.

The most publicized dump site incident involved the New York State Department of Health's order to evacuate pregnant women and young children from the Love Canal area near Niagara Falls. The department believed chemicals dumped a quarter-century ago along the canal banks were responsible for birth defects and miscarriages.

Mr. GORE. I would like to thank you both for coming to testify and tell us about the experiences that you have had. This is a nationwide problem. Your experience reflects experience in other areas. There are hundreds and hundreds of dump sites similar to this one. EPA does not even know where they all are. We asked them for an inventory of these locations. They are unable to provide that.

So we wanted to take a close look at the impact that it has on a family. It is difficult to estimate the monetary impact it has had on you. I am sure you have had doctors' bills and time off from work and had to stop your garden and you now have to take your children 20 miles to bathe. And the only thing you have in prospect is $160 for a tap fee to your water line.

Mrs. STERLING. Maybe next year.

Mr. GORE. Maybe next year.

Thank you very much for coming.

Mrs. STERLING. Thank you for having us.

Mr. GORE. Our next witness is Mr. Hugh Kaufman, Program Manager of the assessment program, Assessment and Technology Branch, Office of Solid Waste, Environmental Protection Agency.

Mr. Kaufman, would you stand and be sworn, please. You swear the testimony you are about to give is the truth, the whole truth and nothing but the truth, so help you God?

Mr. KAUFMAN. Yes, sir, I do.

Mr. GORE. Please identify yourself to the reporter for the purpose of the record.

TESTIMONY OF HUGH B. KAUFMAN, MANAGER, ASSESSMENT PROGRAM, HAZARDOUS WASTE MANAGEMENT DIVISION, ENVIRONMENTAL PROTECTION AGENCY

Mr. KAUFMAN. Yes; my name is Hugh Kaufman, from the Environmental Protection Agency.

Mr. GORE. Mr. Kaufman, please proceed with your statement.

Mr. KAUFMAN. I am pleased to provide this committee with any information regarding activities I have knowledge of in the Environmental Protection Agency's implementation of the Resource Conservation and Recovery Act of 1976. My official responsibility at the EPA is to manage the assessment program of our Hazardous Waste Management Division. In this capacity I am required, as part of my duties, to act as the agency focal point and lead office in assessing the environmental and public health damages caused by hazardous waste management practices in the United States. I am further required to assure that the public and appropriate officials are notified if environmental and/or public health damages are occurring or may occur from hazardous waste facilities. In carrying out these and my other functions at EPA I have no budget and only one full-time professional employee, who came on board last March.

Since the Resource Conservation and Recovery Act was passed and signed into law in 1976, the policy of EPA has been to curtail any assessments of hazardous waste damages and the discovery of potential imminent hazards such as the Love Canal.

In April of this year it was obvious to me that the regulations for controlling hazardous wastes would not be issued by the EPA

within the time limit mandated by Congress. Indeed as of today those regulations still have not been promulgated, and the agency does not expect them to be ready until 1980. Therefore, I used the established internal system to try to change EPA's policy of not searching out and assessing environmental and public health damages from hazardous waste management activities, so that the cleanup of dangerous hazardous waste facilities could begin in a timely fashion as the Congress expected—I should add that prior to passage of the act, EPA had a vigorous program to find and assess damages from hazardous waste facilities.

Thus I prepared and circulated to management a policy recommendation memorandum and began to search out hazardous waste facilities that posed a threat to the public health and environment. The first case we found was at the Seymour Recycling Facility in Seymour, Ind. As a result of our efforts the EPA regional office was forced to pressure the State to take action against this facility. After working on the Seymour case, we began to uncover other cases which posed a potential threat. However, trying to get the appropriate EPA regional offices to take action against these facilities proved to be an almost insurmountable obstacle.

In one case involving the Summit National Services facilities in Deerfield, Ohio, the EPA regional office refused even to visit the facility or to let headquarters personnel visit the facility. This regional position was supported by our management and, therefore, no visit was made to this facility.

When I discussed this case with the regional officials I was told that they have in their files other cases that are even worse than Summit and stated that they didn't plan to investigate any of them, let alone take action against them. They also told us to stay out of their region.

When I reported this to my management, no action was taken.

In another case involving the Velsicol disposal site in Hardeman County, Tenn., the EPA regional office told us to stay out of the case.

I might add I would like to give this committee the words that they used, but I don't think you would print them. When we raised the issue to management, we were also turned off of the case.

On September 4, 1978, this case appeared on the front page of the Washington Post. I would like to add that EPA headquarters enforcement first learned of this case by reading the Washington Post story, not from the region.

On July 16, 1978, we were ordered to stop looking for imminent hazards by the head of EPA's Office of Solid Waste. This order is still in force.

On October 2, 1978, the Office of Solid Waste prepared a memorandum to the EPA regional offices requesting that they provide information to EPA headquarters on problem hazardous waste sites in their area. This information, as stated in the memorandum, was to be used to assess the costs of cleanup, rather than to assess environmental and public health damages for possible enforcement action. There were no guidelines in this memorandum for the regional offices to alert the public to potential danger; in fact, the memo further instructed the regions not to find new problem sites

because they might be required to provide this information to Congress and the public.

On October 10, 1978, the EPA issued an enforcement strategy on how to handle identified imminent hazard cases. This document contained no instructions on how to find imminent hazards. There was no requirement for regional offices to check their files and to assess all other available information on hazardous waste facilities. Nor was there any requirement that the public be informed of possible exposure to contamination from these facilities.

These are the policies under which this function of EPA is now carried out. They are policies which do not use to the fullest the resources Congress provided in the RCRA to protect the environment and public health. At the least, the files of the regional offices should be scrutinized, the assistance of other sources of information should be sought. The public, including appropriate Government officials, should be alerted to any dangerous hazardous waste disposal sites, and suitable enforcement action should be initiated.

As Love Canal illustrated, this problem can occur not only with existing sites but also with abandoned sites. Timely action by the EPA would serve to protect the public today, as intended by Congress in passing RCRA. It could also save future generations from stumbling into tomorrow's Love Canal.

Mr. GORE. Thank you, Mr. Kaufman. A very candid and forceful statement.

I take it the current EPA policy is to not look for hazardous sites of this kind.

Mr. KAUFMAN. Yes, sir. That is the current EPA policy.

Mr. GORE. Mr. Greene?

Mr. GREENE. Thank you, Mr. Chairman.

Mr. Kaufman, let me review with you the documentary record related to what you have just chatted with us about.

[The documents referred to follow:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: APR 2 0 1978 Office of Solid Waste

SUBJECT: Imminent Hazard Assessments of Hazardous Waste Management Facilities -

FROM: Hugh B. Kaufman, Program Manager
Assessment Program, HWMD

TO: John P. Lehman, Director
Hazardous Waste Management Division

THRU: William Sanjour, Chief
Assessment & Technology Branch, HWMD

In our discussions on Tuesday, 17 April, I described to you my view that EPA should initiate a major program to use the provisions of Section 7003 of RCRA, Imminent Hazard, to require the "clean up" of hazardous waste facilities in the United States. In this discussion I stated that these actions are imperative for the following reasons:

1) There appears to be a major increase in environmental problems related to hazardous waste management, since the Resource Conservation and Recovery Act has passed. Further, hazardous waste management subsidiaries of companies are being formed with no assets in them, so that if and when major problems occur in these subsidiaries the parent companies' assets will be protected.

2) Congress expected EPA to already promulgate standards for hazardous waste management under RCRA and thus, expected major clean-up to begin by April of this year.

3) It appears that hazardous waste facilities are aware that EPA will not be able to thoroughly scrutinize facilities and compliance with our standards for a few more years. Companies who have assessed their facilities and concluded that they could not get an EPA permit to operate once our strong enforcement begins, have a positive incentive to take as much waste as possible

and provide only minimum care until such time as RCRA Subtitle C is fully implemented. At which point they can close or abandon the facility with virtually no penalty.

4) By EPA taking strong action against facilities that pose this type of hazard to the public health and environment, we will develop a track record in the minds of the public that we intend to take a strong position in assuring that hazardous waste management performed in the United States is protective. Thus, when we issue a permit to a hazardous waste facility, the EPA "Seal of Approval" will have more value.

5) Companies interested in investing capital in good hazardous waste management facilities will have more incentive to make the large capital expenditures required to do the job right if EPA is forcing the clean-up or closure of bad facilities.

6) We are receiving reports that for the most part, the state of hazardous wase management in the U.S. is as bad or worse than it was when the Congress passed RCRA a year and one half ago. The Congress and the public expected us to use our authority to solve this problem and we should use these authorities to do this.

RECOMMENDATION

I recommend that we shift our policy emphasis and not close our eyes to the fact that hazardous waste facilities located in many states are presenting hazards to the public health and environment. We should prod these states to take action or take action ourselves to solve these problems. This should be done even if some states will not pick up the hazardous waste program because of our involvement. Eventhough the Congress wanted us to have the states run hazardous waste programs, they did not want us to do this at the expense of providing adequate protection to the public from hazardous waste managment. I have noticed that in some regions of EPA a policy of closing their eyes to hazardous waste problems in states in order to cultivate their favor to "pick up" the hazardous waste program has been occurring. I think a positive statement by us against this practice should be made immediately.

cc: S. Plehn
W. Kovalick
F. Lindsey
M. Wright (A-133)
T. Hunt (EN-342)
E. Lazar (PM-223)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Solid Waste

DATE: MAY 4 1978

SUBJECT: Potential Imminent Hazard

FROM: John P. Lehman, Director
Hazardous Waste Management Division (WH-565)

Walter W. Kovalick, Jr.
for

TO: Robert L. DuPrey, Director
Air and Hazardous Materials Division, Region V

It has come to our attention that there may exist in Ohio an imminent hazard situation resulting from the storage of 100,000 barrels of hazardous waste. Specifically, our staff has learned that a company by the name of Summit National Services in Akron, Ohio has an incineration facility that can handle a maximum of 500 gallons of burnable waste per hour. Preliminary calculations indicate that it would take about two years for this incinerator to burn the wastes that are presently on site if no further wastes are brought in. Because we feel that there may not be the financial resources available to this company to properly destroy these wastes, this facility may pose a potential imminent hazard.

We request that Region V conduct a site investigation of the Summit National Services facility for possible imminent hazard action. Our staff will be glad to help you with any support you feel is necessary in this investigation. The facility is located near Akron, Ohio and owned by a Mr. Donald Georgeoff. Mr. Georgeoff can be reached in Akron at 633-0110.

We would appreciate your staff keeping us informed as to the progress and results of this investigation.

cc: S. Plehn
W. Sanjour
F. Lindsey
Terrel Hunt
M. Wright
H. Kaufman
E. Kleppinger
J. Seitz

INTER-OFFICE COMMUNICATION

TO Earl Richards, Assistant Director Ohio EPA DATE November 19, 1976

FROM: Wendell C. McElwee thru Don Dav, Chief, Office of Land Pollution Control WCM DD

SUBJECT: Summit National Services

This memo is to provide you with as much information as is possible at this time concerning the situation at Summit National Services near Deerfield, Ohio.

On June 30, 1976, Bob Brown and I together with Dave Woodring and Ray Schaeffer of the NEDO visited SNS. We found the burner shut down for repairs at the time of our visit and it has remained in that condition since our visit.

Liquids are stored at this site in what appeared to be several thousand barrels, at least eleven tanks of steel, fiber glass and concrete block construction, open and closed.

The open top concrete tank is approximately 52' x 70' x 12' and was new at the time of this visit. This tank contained approximately twelve inches of black liquid which had an extremely nauseating odor.

At the time of this visit, the owner told us that he did not have any bad materials on site. I took several pictures of the site and our visit was concluded.

A short time after the visit I began to receive comments from the NEDO that the concrete tank did not have a concrete bottom. Also, home owners in the area have been complaining about tast and odors in their well water and some have had to quit using their wells.

Approximately September 14, 1976, I received a letter from the Michigan Department of Natural Resources which contained copies of some liquid waste haulers reports on materials being hauled to Ohio. One of these reports stated that two loads totalling 4,500 gallons of "C-56" had been delivered to SNS. "C-56" is a code name used by a particular chemical plant in Michigan for Hexachlorocyclopentadiene (HCP). HCP is an intermediate in the manufacture of the pesticide Kepone and probably as an intermediate for the manufacture of Mirex. It's principal use is in the manufactur of heat-resistant and shock-proof plastics.

After further discussions with NEDO personnel and the U.S. EPA I requested assistance from the U.S. EPA in collecting and analyzing samples from SNS in a letter dated October 6, 1976, addressed to Chris Timm (cc to you). On October 28, 1976, I met with Dennis Lee of the NEDO, Lynn Malcolm of the Akron APC District, and Bob Bowlus of the U.S. EPA at Summit National Services. A thorough investigation was made at the site and samples were taken from various tanks and locations in the area. These samples are being analyzed by the U.S. EPA.

Barrels are in all degrees of condition and many are, or have been, leaking. There is evidence that barrel contents have been washed into a watercourse and deposited the premises. One steel tank has a hole in its side and was leaking at the time of our inspection.

The concrete tank which is about four feet above ground and eight feet below ground level was filled within two concrete blocks of the top. This tank is cracked on both sides with the south side crack being about 1/2" wide. Material has leaked out of the tank and pooled on the surface of the ground. The top layers of liquid in this tank are a latex waste which has a tendency to solidify which plugs the cracks. Sub-surface conditions of the tank are unknown. Samples were taken at different depths in the tank.

A small lagoon was also discovered. One side of this lagoon has ruptured in the past and a channel has been cut in a bank which leads to another small watercourse along the east edge of the property. Neighbors have in the past reported that tank trucks discharged directly to this lagoon.

The condition of the site can only be described as bad.

It should be noted that this site is withinthe Berlin Reservoir watershed and the water passing through and around this site flows to the reservoir.

Two rolls of slides were taken of the site and have been developed.

On November 9, 1976, I reviewed Michigan haulers reports to the Michigan DNR and learned that beginning in November, 1975, approximately 14,300 gallons of C-56 had been taken to SNS with the last load of 4,500 gallons being delivered on July 20 and 26, 1976. Also, that 15,050 gallons of Cytrolane waste had been taken to SNS during January 1976. And finally, that 6,500 gallons of Thimet wastes had been taken to SNS on June 26, 1976, which was four days before my first visit to SNS.

Thimet and Cytrolane are both extremely toxic insecticides. Cytrolane is exported to Egypt for use against cotton weevils. It has an LD_{50} of 9.

Depending upon its make-up, Thimet can have an LD_{50} of 1.

Upon learning that these two insecticides could be at SNS, I called Bob Bowlus to notify him and request that the samples be analyzed for these insecticides. On November 17, 1976, Bob informed me it was doubtful that the lab could test for Cytrolane since they had no standard for it. I believe the chemical company can supply the standard and will pursue this possibility.

On November 18, 1976, Dennis Lee informed me that well sampling will be performed in the SNS area on Monday, November 22, 1976, by Paul Gehring of the U.S. EPA, Dennis and Ray Schaefer from the NEDO groundwater group.

I do not feel that Summit National Services should be permitted to continue in operation. They do not now, or have ever had the capability to handle wastes such as HCP, Thimet or Cytrolane.

The burner has been shut down since at least June yet they continue to stockpile drums and fill tanks. The operator and workers have stated that materials have been, or are being taken to Midland, Michigan and Robert Ross for incineration. Robert Ross has vehemently denied receiving material from SNS. The other outlet has not been checked.

Recommendation

I recommend that emergency action be taken to stop operations at Summit National Services which will provide the time to conduct a complete assessment of the situation. Further, there is no SPCC plan and diking is absent which is obvious. This is a Federal violation.

There is evidence of barrels being buried which is illegal open dumping.

There is evidence of water pollution.

This site must be cleaned up by the operator regardless of final outcome and he must be held responsible. Steps must be taken to assure this being done.

The longer this type of an operation is permitted to operate, the longer it will take to provide for proper and safe handling and disposal of liquid wastes within the State of Ohio.

Conclusion

The NEDO is very concerned about this operation. A meeting has been suggested and tentatively scheduled for Tuesday, November 30, 1976, at the NEDO to discuss action to be taken.

WCM/pam

cc: Don Day
cc: Doug Hasbrouck
cc: Chris Stotler

12/7/76 This situation is deteriorating. On 12/6/76, Bob Bowlus & Dennis Lee did more sampling and investigation. Bob Bowlus came again as a result my calling Chris Timm on 12/3 and requesting assistance

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: JUN 19 1978

SUBJECT: Summit National Services

FROM: Robert L. Duprey
Director
Air and Hazardous Materials Division

TO:
John P. Lehman
Hazardous Waste Management Division (AW-465)

I have received your recent memorandum regarding Summit National Services in Akron, Ohio. I am aware from our telephone conversation that you did not personally sign the request to investigate Summit and that you would not have sent the request.

However, I would like to advise you that the Region V offices of Enforcement, Toxic Substances, and Solid Waste have been aware of the situation which exists at Summit for several years. We have had ongoing communications with the Ohio Environmental Protection Agency (OEPA) through the present time. I have attached for your information, copies of reports which our office has in its files. For your benefit, we are enclosing OEPA recommendations for legal action. I do not intend to send any person from this office out to inspect the facility at this time, pending our assessment of the OEPA response.

My greatest concern is the manner in which the term "imminent hazard" appears to have become loosely used by headquarters staff. As we are all aware, hazardous waste management facilities are inherently hazardous. Determination of imminent hazard is, in part, a legal matter and must in my view involve a risk of sufficient magnitude to warrant Federal intrusion into an area that has historically been handled by the State and local sector. In the future, if you or your program staff have any questions concerning a facility in this Region, please make the inquiry without identifying them as "potential imminent hazards." We are well aware that there are hazardous wastes in Region V. We do not believe, however, that a hazardous waste management facility's lack of financial resources should be construed to be an imminent hazard anymore than a bankrupt industrial facility can be considered such. The concept of someone blowing up a hazardous waste facility to avoid paying for its clean-up is also applicable to any industrial facility. To state that potential exists for an illegal act does not necessarily mean that an imminent hazard exists.

In the future, I hope situations such as this can be brought to the attention of the Regional Office in a more rational manner. We simply do not have the resources to put all of our effort into investigating "imminent hazard" situations. In my view we should concentrate our efforts in implementing the regulatory provisions of Subtitle C which are designed to correct problems involving hazardous wastes. Investigations under section 7003 should be limited to those of a truly emergency nature. We would be happy to participate with you in developing procedures to implement section 7003 in a more orderly and rational manner.

Mr. GREENE. Before you is a group of documents, the first of which is a memorandum dated April 20, 1978, in which, as I understand it, you laid out your belief that section 7003 of the Resource Conservation Recovery Act, that is the imminent hazard provision, could be used in a substantial number of cases and should be used during the development of the RCRA regulations. Is that correct?

Mr. KAUFMAN. Yes, it is.

Mr. GREENE. Let me direct you to the second group of documents before you. This is a group of three, the first of which is a memorandum dated May 4, 1978 from a Mr. Lehman to a Mr. DuPrey, and it suggests that certain actions be taken with respect to Summit National Services in Akron, Ohio.

Would you state what those actions were to be.

Mr. KAUFMAN. There was no action taken, and no—as I mentioned in my statement, there was no site visit, either by the regional office or by headquarters.

Mr. GREENE. Let us turn to the next document, which is identified at the top as an interoffice communication. It is dated on its last page November 19, 1976, which describes the Summit National Services' facility.

Could you describe for us generally what this suggests about that facility?

Mr. KAUFMAN. Basically, this described the imminent hazard posed by the Summit facility, and this memorandum was in the regional office files. This is almost 2 years old.

Mr. GREENE. This indicated that certain toxic substances, including substances referred to as C–56, HCP, and various others, including Mirex, were leaking or otherwise contaminating the local area. Is that correct?

Mr. KAUFMAN. That is correct.

Mr. GREENE. Turning finally to the June 19, 1978, document, again one from Mr. DuPrey to Mr. Lehman, could you describe the import of that document to us, Mr. Kaufman?

Mr. KAUFMAN. Yes. This is the response of the division director in the region stating that he did not intend to send any person out to inspect this facility.

Mr. GREENE. To your knowledge, have any EPA personnel ever been sent to that facility?

Mr. KAUFMAN. To my knowledge, EPA personnel went to the facility a couple of years ago, but since our request to the region to inspect the facility now, there has been no inspection at the facility.

Mr. GREENE. Could you describe, to your knowledge, the conditions which now obtain at that facility? Is it any different from the description in the memorandum dated 1976?

Mr. KAUFMAN. Yes, we were able in the assessment program to borrow some money from another program in EPA, to do an overflight of the facility and take pictures.

In looking at those pictures, it appears that the problem at Summit is much worse now than it was when that interoffice memorandum was written 2 years ago.

Mr. GREENE. The problem is worse in what way? Would you be more specific.

38-748 O - 79 - 21

Mr. KAUFMAN. More waste at the facility. The contamination looks like it may have gone farther.

Mr. GREENE. Is it your understanding that a number of facilities in the country are building up much more rapidly than is appropriate?

Mr. KAUFMAN. There are many more facilities taking in hazardous wastes now than before the act was passed, mainly because there is more hazardous waste being generated every day.

Mr. GREENE. I see. Let me turn you to the final and next group of documents.

[The documents referred to follow:]

DATE: June 16, 1978

K-3

SUBJECT: Imminent Hazards

FROM: Steffen W. Plehn
Deputy Assistant Administrator for Solid Waste

TO: John P. Lehman, Director
Hazardous Waste Management Division

The attached memoranda have just come to my attention and disturb me. They lend added urgency to our need to finish working out jurisdiction and priorities for imminent hazard with Enforcement and the Regions. Until we have a chance to discuss this further please have Bill and Hugh put a hold on all imminent hazard efforts. Work on Subtitle C regulations and on our ADP system has higher priority at this time.

Attachment

DATE: June 2, 1978

SUBJECT: The Coordination of Headquarters/Regional Office and Regional Office/ Regional Office Activities with Regard to Hazardous Waste Situations

FROM: Adlene Harrison
Regional Administrator (6A)

TO: Steffan Plehn
Deputy Assistant Administrator for Solid Waste (WH-562)

We strongly support the attached memo from Mr. Conrad Simon to Mr. John Lehman. The Solid Waste Branch has experienced several incidences in the Technical Assistance Program area and the Hazardous Waste area (which were potential Imminent Hazards). In these cases Headquarters staff contacted or were contacted by persons within Region VI, gathered information, and made commitments to come to the Region before contacting the Regional staff.

Attachment

cc: Regional Administrators, Regions I-V, VII-X

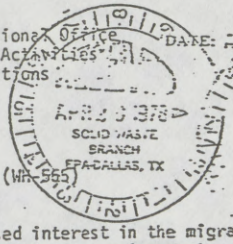
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: The Coordination of Headquarters/Regional Office and Regional Office/Regional Office Activities with Regard to Hazardous Waste Situations

DATE: APR 14 1978

FROM: Conrad Simon, Director
Environmental Programs Division

TO: John Lehman, Director
Hazardous Waste Management Division (WH-565)



As you are aware, there is an increased interest in the migration of hazardous pollutants both into and within our environment. This has been demonstrated by recent news media accounts and public interest group activities.

Since your division is involved with developing rules and regulations to address this issue through Subtitle C of RCRA, we are certain you are aware of the benefits to be derived from increased public awareness. We also recognize and support efforts aimed at building closer EPA ties with the public. This relationship however, is weakened if Headquarters' staff personnel engage in actions affecting a region(s) prior to notifying the appropriate Regional Office. These types of activities subvert the entire organizational structure of EPA. This comment obviously does not simply apply to a Headquarters/Regional Office activity but also to a Regional Office/Regional Office operation.

A specific complaint we have regards the Fred C. Hart study of the Love Canal landfill, New York. We feel that it is inadvisable for EPA consultants to engage in news media interviews which concern Regional interests without the prior approval of the appropriate Regional Office. An uncoordinated approach may lead to serious complications with regard to the release of either premature, inappropriate, unwise or erroneous information.

We also feel that in situations where there is a potential for Imminent Hazard action under Section 7003 of RCRA, the Scope of Work and all reports should automatically be forwarded to the appropriate Regional Office for their evaluation.

Although the need for a guidance document on this issue is doubtful, periodic reminders to both Headquarters and Regional staffs are necessary to insure that prior consultation occurs and that protocol is observed before beginning a Headquarters/Regional Office or a Regional Office/Regional Office activity.

cc: Claire Matassoni, ORIO (A-101)
Air & Hazardous Materials Div.
Directors - Regions I, III-X
William Librizzi, 2 OTS
Stephen Dvorkin, 2 ENF-GE

Mr. GREENE. This is a memorandum dated June 16, 1978, from a Mr. Plehn to Mr. Lehman. I would direct your attention to the next to the last sentence, which I will read to you. "Until we have a chance to discuss this further, please have Bill and Hugh put a hold on all imminent hazard efforts."

Are you the Hugh referred to in that statement?

Mr. KAUFMAN. Yes, I am.

Mr. GREENE. What was your understanding of the import of this memorandum?

Mr. KAUFMAN. This memorandum and the instructions I got from my division director, John P. Lehman, was not to look for any more imminent hazards.

Mr. GREENE. Is that still the policy at the Environmental Protection Agency?

Mr. KAUFMAN. Yes, sir.

Mr. GREENE. This particular order still binds you in your office?

Mr. KAUFMAN. Yes, sir, I feel bound by this order still.

Mr. GREENE. Let me turn you to another document, dated October 2, 1978.

[The document referred to follows:]

OCT 2 1978

Information Needed on Disposal Sites Where Hazardous Waste Threatens Public Health

Thomas C. Jorling /s/
Assistant Administrator for Water and Waste Management (WH-556)

Regional Administrators, EPA
Regions I-X

The Office of Management and Budget is concerned about the increasing pressure on the Federal Government to provide funding for cleanup of environmental incidents involving prior disposal or storage of hazardous chemicals and substances. The most recent example is the situation at the Love Canal dump site in Niagara Falls, New York. OMB has established a task force to assess the potential magnitude of such incidents and to develop and assess various options for Federal policy respective to such incidents. OMB has asked EPA to collect information to assist the efforts of the task force and to participate on the task force. In addition, it is very probable that the Congress will want to address this issue in oversight hearings next year and will expect and request EPA to supply substantive information on environmental incidents, both recent and potential. This memorandum is to ask your assistance in gathering information for these two purposes. This request was discussed with your Solid Waste Branch Chiefs in a recent meeting at headquarters on September 14.

In brief, the OMB task force would like to obtain four types of information:

1. a rough estimate of the total number of landfill, storage and other sites that may contain hazardous wastes in any quantity which now or potentially could cause adverse impact on public health or the environment,

2. a rough estimate of the number of these sites that may contain significant quantities of hazardous wastes which could cause significant imminent hazard to public health (this is a subset of above estimate)

3. an inventory and description of those sites for which EPA has information in its files (this is a further subset of the above estimates) and

4. an estimate of the costs of (a) assessing the public health and environmental hazard, (b) engineering studies to determine remedial measures and (c) remedial measures for a dozen or more sites which typify various types of incidents.

It is fully recognized that the estimates for Items 1 and 2 must and can only be "best professional estimates." It is not expected that EPA make any effort to "discover" sites (through field visits, substantial file searches or other means) for which we do not currently have information. Rather, it is expected that EPA make estimates based on knowledge about present and past industrial activity and present and past disposal practices in each Region. It is not required that you involve the States, but, if you can consult with and obtain information from your States without causing undo burden, such State participation would be welcomed.

The purpose of Item 3 is to obtain a better understanding of various sizes and types of incidents that might be expected in the total universe. In a sense, this inventory will be treated as a "representative sample" of the universe. The attachment provides the format and instructions for supplying this inventory and descriptions. It is expected that this information will derive only from your current regional files. However, if you can readily and conveniently solicit additional information and help from the States, we encourage this. It is recognized that the development of this inventory will add national visibility to the incidents identified therein because the inventory will be shared with the Congress and will probably be requested by and be made available to the public. Because of this, incidents included in the inventory should be situations for which you have more than circumstantial information, the public (at least locally) is already aware, and publicly accessible information is already on file.

We intend to use an experienced contractor to carry out Item 4. We will select a dozen or more incidents from the inventory you submit under Item 3 and have the contractor develop the three cost estimates delineated above. For most, if not all, of these selected incidents, the contractor will need to visit your office and, in some cases, make visits to the State offices and/or the site. In all cases, the contractor will work with, and through, your Solid Waste Branch Chiefs and will not make visits without your approval and arrangements.

I would like you to supply the information described in Item 1, 2 and 3 to Gary Dietrich, Associate Deputy Assistant Administrator for Solid Waste, by October 23.

cc: Mr. Jorling
Mr. Biglane
Mr. Jim Smith
Mr. Elston
Mr. Dietrich
Mr. Roumani
Mr. Lehman
Mr. Kinghorn

Attachments

WH-562:GNDietrich:st 9/29/78 Rm. 2710 5-9177

Regional Solid Waste Branch Chiefs

Instructions and Format for
Preparing an Inventory and Description
of Disposal Sites Where Hazardous Waste
Threatens Public Health

Purpose: The purpose is to inventory and describe known hazardous waste storage or disposal situations which pose a current or potential hazard to public health. This information will be used by EPA to (1) describe types and variety of the imminent hazard situations currently faced by State and local governments and (2) when combined with representative cost information, to assess the fiscal magnitude of these situations for the purposes of formulating Federal policy for dealing with these situations. This information will be shared with OMB and Congressional oversight and legislative committees. Although there are no plans to publicly release this information, it will probably be made public through requests by Congressional committees and others.

Definitions: Criteria for the types of situations to be inventoried and described are:

(1) known situations for which information is available and on file in the Regional Office. It need not cover situations for which all or most information must be obtained from the States, local agencies or others or for which field inspections must be made to "discover" and describe the situation. There definitely is no requirement to go out and "discover" hazardous situations, nor is it expected to inventory situations for which only unconfirmed information is available.

(2) hazardous waste storage and/or disposal situations involving hazardous chemicals or radioactive wastes. Situations involving methane gas or leachate problems from typcial municipal landfills or disposal sites should not be covered unless the situation is dominated by hazardous chemicals or radioactive wastes co-disposed with the municipal wastes. Both abandoned and existing sites should be included irrespective of whether there is an apparent responsible party that could be tasked with the responsibility of correcting the problem. (Quite often the responsible party "evaporates" by declaration of bankrupcy or other legal means when the cost of correction is found to be high.)

(3) situations that pose an existing or potential imminent hazard to public health through groundwater contamination, surface water discharges including potential spills, air emission and/or radiation emissions.

(4) situations that can be sufficiently described, pursuant to the following format, using available information.

Timing: The complete inventory and descriptions must be submitted to Gary N. Dietrich, Associate Deputy Assistant Administrator for Solid Waste, by October 23, 1978.

Format: For each situation, a two-to-five page description should be submitted. The attached format is suggested. However, if it is too confining to enable a good exposition of information, a free-form narrative, covering the same points, may be used.

Format for Inventory of
Disposal Sites Where Hazardous Waste
Threatens Public Health

Name:

Location: (by city, town or county and state)

Ownership: (of site)

Operator: (of site)

Date Established: (or approximate years of operation)

Status: (active or abandoned or in receivership)

Type of Business: (treatement, storage, disposal combination)

Financial: (capacity of owner or operator to remedy the problem)

Waste Handling: (e.g., incineration, landfill, deepwell, landfarm; midnight dumping; transport; storage (warehouse, field) drums, tanks (size, condition, fixation)

Type of Hazardous Waste Involved: (e.g., PCB wastes, organic solvents, pesticide wastes)

Size of Business: (e.g., volume and service area; capacity and size of lagoons and storage area; number of drums)

Condition of Facility: (e.g., housekeeping, leaking drums, imminent hazard, size of contaminated area.

Physical Factors: (e.g., hydrology-geology of area, climate, amount of precipitation, proximity to water bodies, soil types, permeability, depth to bedrock, location on flood plain or wetlands, proximity to residents, number of monitoring wells)

History and Dates of Incidents: (e.g., permit violations, persons injured, residents complaints, epidemiologic data, well contaimination, air pollution environmental damage, fires, explosions, breached lagoons)

Action Taken to Date: Federal, State, local remedial action taken and with what result.

Cost: Federal, State local cost incurred or estimates of cost for assessment of the problem, engineering a remedy, carrying out a remedy.

Mr. GREENE. This is denominated at the top as "Information Needed at Disposal Sites Where Hazardous Waste Threatens Public Health." Below that appears the name of the person sending it out, Mr. Thomas Jorling, Assistant Administrator for Water and Waste Management.

Directing your attention to the second page, the second full paragraph of the second page, down at the bottom, let me read you a sentence.

> Because of this, incidents included in the inventory should be situations for which you have more than circumstantial information. The public at least locally is already aware and publicly accessible information is already on file.

Is it your impression that EPA just wants to know about what the public already knows about?

Mr. KAUFMAN. Yes, it is.

Mr. GREENE. Do you have reason to believe that there is information in EPA's regional or headquarters files which would go beyond the class of sites defined by this document?

Mr. KAUFMAN. I have reason to believe that there are sites in the regional office's files that would be more expansive based on what was told me by regional officials.

Mr. GREENE. Specifically, what were you told, Mr. Kaufman?

Mr. KAUFMAN. I was told by one regional official that they have more sites in their files that are worse than the site I was looking at at the time.

Mr. GREENE. That site was?

Mr. KAUFMAN. The Summit site.

Mr. GREENE. Finally, Mr. Kaufman, let me turn your attention to a memorandum on the stationery of the United States Environmental Protection Agency, dated October 10, 1978 which is denominated as "Strategy and Response Procedures for RCRA Subtitle C Problems Prior to the Promulgation of Regulations."

[The memorandum referred to follows:]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 10 1978

OFFICE OF ENFORCEMENT

MEMORANDUM

SUBJECT: Strategy and Response Procedures for Resource Conservation and Recovery Act (RCRA) Subtitle C Problems Prior to the Promulgation of the Regulations

FROM: A. E. Conroy II, Director
Pesticides and Toxic Substances
Enforcement Division

John P. Lehman, Director
Hazardous Waste
Management Division (WH-565)

TO: Regional Enforcement Division Directors
Regional Air & Hazardous Materials Division Directors
Regional Surveillance & Analysis Division Directors

This memorandum presents an interim strategy for RCRA Subtitle C violations prior to the promulgation of the regulations thereunder, and detailed response procedures for dealing with such violations. The response procedures supplement the Regional Guidance for Actions Under §7003 of RCRA (§7003 Guidance Paper). Please send your comments and the information asked for to: Richard H. Robinson (EN-342), Attorney-Advisor, PTSED, Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460, by November 4, 1978.

I. Introduction

At this time, it is projected that the Subtitle C regulations will be proposed in the Federal Register on or about January 1, 1979, and that they will be promulgated in January 1980. Pursuant to RCRA §3010(b), the regulations would not be enforceable for another six months; i.e., until July 1980. A number of situations involving improper management of solid or hazardous wastes have already arisen under RCRA and, no doubt, others will occur between now and July 1980. It is necessary to have a strategy to deal with such situations.

At present, RCRA §7003 is the only available enforcement mechanism under the Act. RCRA §7003 is intended to deal with emergency situations which present, "an imminent and substantial endangerment to health or the environment." It is a very powerful enforcement tool which allows the Administrator to seek injunctive relief in a federal district

court. For a further discussion of the meaning of §7003, see the §7003 Guidance Paper that was sent to the Regional Enforcement and Air and Hazardous Materials Division Directors in January 1978.

The RCRA program, however, cannot be implemented solely through the use of emergency actions under §7003. A judicious use of this statute, though, can have many benefits for the program. It can increase public awareness in the RCRA program and abate some of the existing solid and hazardous waste management problems. The Regional Offices can use §7003 and other mechanisms such as publicity and technical assistance to the states between now and July 1980, to (1) solve some environmental and health problems arising out of improper solid and hazardous waste management, and (2) begin to implement the RCRA program.

State and local government agencies are best equipped to respond to potential emergencies. Such problems are local by their very nature. Most states have some sort of State or local enforcement authorities available either through solid waste legislation or public health laws. The first actions to abate the emergencies should utilize these authorities. The imminent hazard provisions of §7003 should be used only as a last resort, and as a tool to induce the states to take appropriate action in emergency situations.

It was the intent of Congress in RCRA that states operate their own solid and hazardous waste programs in lieu of EPA's. State agencies and EPA can gain valuable working experience in waste management, and develop the proper strategies and priorities at an early stage by responding to problem situations.

II. Purpose

The purpose of this paper is twofold. First, it is designed to develop a plan that can be negotiated between the Regional Offices and the states to deal with situations involving the improper management of solid or hazardous wastes prior to July 1980. It is necessary that a coordinated approach for dealing with these situations be developed rather than having EPA and the states react to them as they occur.

This paper will also set forth the procedures to be followed by OSW and OE during emergency situations involving the improper management of solid or hazardous wastes. To effectively manage these situations, a clear and well thought out set of procedures and responsibilities must be provided for the participating organizations.

III. Strategy

A. In General

EPA's highest two priority activities in the area of solid and hazardous waste are:

- o Development of the Subtitle C regulations
- o Taking actions to abate emergencies

These two activities can work hand in hand. Corrective action against possible emergencies is vitally important for a successful hazardous waste management program. Additionally, the Agency recognizes that an effective solid or hazardous waste management program is predicated on well-formulated, useful guidelines and regulations that provide effective mechanisms to deal with solid or hazardous waste. Delays in the regulatory development process will inevitably lead to an increase in emergencies. In the meantime, however, existing problem situations must be confronted and corrected using available mechanisms and resources.

B. Specific Strategy

For this interim period prior to July 1980, and as a method of establishing the proper relationship between the Regional Offices and the states for the RCRA program, the Regional Offices should work with the states to achieve the following results:

- o Develop a system of communication and response for emergency situations. The OE/OSW response procedures contained in this paper and the §7003 Guidance Paper may be used as models where applicable.

- o Apply this system to the unique problems of each State, and offer federal assistance as necessary.

- o Develop criteria for the states and Regional offices to assist each other when emergency situations arise; i.e., states can use the threat of federal action to induce a violator to clean up the problem he created.

- o Develop and maintain a listing of capabilities available through the State and Federal government (i.e., analytical response).

1. Regional/State Plan

To devise a workable strategy for each Regional Office and State to apply to problem situations under RCRA, it is necessary for each Regional Office to consider the potential for imminent hazards in each State, and to assess available mechanisms for dealing with these situations. Therefore, it is requested that each Regional Office complete the following analyses and submit them to the Office of Enforcement (OE). The analyses are as follows:

(a) Analyze the current system of communication and response for emergency situations involving the improper management of solid and hazardous waste, and determine what is

necessary to establish in each State, a workable RCRA imminent hazard response system.

(b) Make an assessment of the State's probable reaction to these problem situations; i.e., whether it will take an active role or will wait for EPA to respond to the situation.

(c) A characterization of the type(s) of potential problems in each state. Section III of the §7003 Guidance Paper identifies certain criteria and examples which may be useful in determining whether a factual situation constitutes a potential problem.

2. Use of Regional/State Plans

The analyses prepared by the Regional Offices will be examined by OE and OSW. OE and OSW will develop further strategy and guidance to all regions to address areas of nationwide concern. The offices will work with the Regions on an individual basis to develop strategies and methods of dealing with specific Regional concerns. In all cases, the Regional Office will work with the states to devise a plan to handle such problems.

3. Management of Future Imminent Hazard Actions

(a) Remedies

In some cases, a problem situation will be determined to pose an imminent hazard within the meaning of RCRA §7003 (see §7003 Guidance Paper). In that instance, the OE/OSW response procedures in this paper and the §7003 Guidance Paper should be used for proper management of the situation if the case is to be prosecuted by EPA. EPA's primary objective in every imminent hazard situation is to have all culpable parties (usually the facility owner) bear the costs of (1) abating the nuisance, and (2) cleaning up the site, if necessary. Another avenue which should be pursued is identifying the generators of the wastes, and attempting to persuade them to take their wastes back and send them to proper facilities. If such persons are unable to bear the full costs of such clean-up, the State should be strongly encouraged to expend its resources in the clean-up effort rather than EPA. It must be made clear to the states that neither RCRA nor §311 of the Clean Water Act provide funds for the clean-up of solid waste sites.

(b) Management of Response

The appropriate persons in the Regional Office should meet as soon as possible with those persons in the appropriate

State agency or agencies who have the responsibility to act when imminent hazard situations occur. The State must realize that if it does not act quickly (within a two to three week period, in most cases), the Region will bring a §7003 enforcement action in conjunction with the local U.S. Attorney's Office (see §7003 Guidance Paper). If the State chooses to act, the Regional Office should oversee any State action, and make sure that the imminent hazard is properly abated. It is very important that the Regional Office continue to monitor the situation after a lawsuit has been filed.

If the State fails to act, then the Regional Office should bring an action pursuant to §7003. Such actions should be managed in acordance with this paper and the §7003 Guidance Paper. Any questions in a specific situation should be directed to either John Seitz, Head, Regional Coordination Unit, Toxic Substances Enforcement Branch, or Richard Robinson, Attorney-Advisor, Toxic Substances Enforcement Branch.

IV. OE/OSW Hazard Response Procedures

A. Office Responsibilities

Before any effective procedures can be developed, the general responsibilities of the two offices must be establisihed. The responsibilities are outlined below:

1. Office of Enforcement (To include Regional Enforcement Division)- Specifically the Pesticides and Toxic Substances Enforcement Division (PTSED) shall be responsible for the administrative and enforcement aspects of hazard situations. These responsibilities include:

   a. Coordination Point - PTSED will serve as the coordination point during hazard situations. PTSED will insure that all necessary parties have been advised of the situation, including OSW and the Regional Enforcement Division Director. PTSED will act as the primary focal point for contact at Headquarters.

   b. Enforcement Options - PTSED in cooperation with the region will review the situation and determine what enforcement options are available to the Agency to rectify the situation. This will include a review of all Agency legislation and Enforcement Options available through other Agencies.

   c. Action Plan - PTSED will develop, in cooperation with OSW and the regional office, a plan of action to rectify the situation.

2. Office of Solid Waste (To include Regional Solid Waste Personnel)- Generally, OSW, and more specifically the Hazardous Waste Management Division, shall be responsible for the technical aspects of a hazard situation. These responsibilities include:

   a. Determination of an Imminent Hazard - This review will include an assessment of the technical facts to determine whether an emergency exists. This includes an evaluation of the potential for adverse effects to either man or the environment.

   b. Determination of Abatement and Control Measures - OSW is responsible for determining what steps need to be taken to abate the hazard, including a rough estimate as to the cost. In addition, OSW shall supply information concerning proper methods of disposal for waste materials generated during the clean-up process.

The above list is not intended to define all the responsibilities of the two offices during a hazard situation; rather, it is meant to set forth the general areas of each office's operation.

B. Imminent Hazard Procedures

During any hazard situation there are six general levels of phases through which the agency will proceed to achieve an effective resolution of the problem. The six phases are: 1) Notification, 2) Assessment, 3) Response Planning, 4) Response Implementation, 5) Feedback, and 6) Follow-up.

These phases, and the appropriate steps taken toward the resolution of the situation, are displayed in the attached flow chart (attachment 1). This flow chart also establishes the formal lines of communication during a hazard situation. All communication shall pass through PTSED at the headquarters level, and through the Enforcement Division Director at the regional level. The purpose of these formal communication lines is to prevent duplication of effort, and to avoid repetitive reporting during the Response Implementation Phase. These communication lines are not intended to prohibit other, necessary communication on the part of those implementing the action plan.

1. Notification - This phase involves receiving information which alerts the agency to a potential hazard situation which may require action under RCRA §7003. This information can come from any source (i.e., the public, environmental groups, other government agencies, and other branches of EPA). During this phase information is received, and all relevant programs are notified. The office functions are:

   a. Office of Enforcement - Specifically, the Head, Regional Coordination Unit, Toxic Substances Branch, Pesticides

& Toxic Substances Enforcement Division.

(1) Receives the initial information and makes a determination as to the applicability of EPA administered statutes.

(2) Refers the action, if appropriate, to the appropriate office or other federal agency.

*(3) If §7003 action is appropriate, PTSED will initiate notification of HQ OSW and the proper Regional Enforcement Division Director.

(4) Based on initial reports from the appropriate program office and the region, PTSED will initiate the assessment phase of the procedures.

b. Office of Solid Waste

(1) Assesses initial information received, and determine what support may be needed in the region.

(2) Determines if information received indicated the need to invoke the appropriate statutory emergency authority.

(3) Reports its findings to PTSED.

c. Regional Office - The regional office performs the following functions which are to be coordinated by the Enforcement Division Director:

(1) Notifies Air and Hazardous Materials Division and S&A Division.

(2) Verifies existence of the situation as reported.

(3) Takes immediate response steps that are required to clean up or abate the hazard incident.

(4) Determines what the current state and local authorities are doing.

(5) Determines whether the region believes an action is appropriate under statutory emergency authority.

(6) Reports findings to PTSED.

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*If action is initiated by the region, this step is not required.

2. Assessment - This phase requires each of the programs involved to assess the situation in terms of their particular area of expertise. Individual office functions are discussed in a general manner below. It should be emphasized that this level is not intended to be a long term evaluation.

   a. Office of Enforcement - PTSED reviews the situation and make the following determinations:

      (1) Are there any additional EPA administered emergency powers which apply to the situation?

      (2) Which hazard actions should be considered in this situation?

      (3) What additional actions need to be completed prior to bringing a lawsuit?

      (4) What possible enforcement support from other EPA offices and other government agencies is needed?

      (5) What specialized compliance monitoring or investigation is needed?

   b. The Office of Solid Waste - OSW provides a scientific and technical support to the regions if required. OSW will support or assist the region in making the following determinations:

      (1) Whether the site or location will cause continuing problems and why.

      (2) What are the potential and immediate hazards the site poses to man and the environment.

      (3) What the proper method of disposal is for materials generated in connection with the clean-up or abatement of the situation.

   c. Regional Office - The function of the regional office is the key to the accurate assessment of the situation. The regional office will perform the following functions:

      (1) Assesses the situation to determine the degree of actual harm to man or the environment.

      (2) Determines what steps have to be taken immediately to secure the site, or to activate measures to start cleanup or abatement.

      (3) Determines what actions the state is planning to take or could take to abate the situation, and the probability of the state taking action.

(4) Explores the current status of the owner and his facility, and determines whether there are any current regulatory actions against the firm.

(5) Determines what actions should be taken by EPA to abate the situation.

The above listed actions may be performed by a number of offices within the regional office. The final assessment however, is referred to the Regional Enforcement Division Director.

3. Planning - This level of activity involves analyzing the assessments made in the previous level, and devising an action plan. The action plan is developed by representatives of OSW, PTSED and the region. Because the regional office has the best understanding of the facts, its representatives will produce a general action plan. This action plan will be finalized by the region and transmitted to the PTSED for review and concurrence.

4. Implementation - The activities in this level are directed toward implementing the action plan developed in the previous level. In most cases, the Regional Office is the lead with the Headquarters Offices providing support to the region.

A detailed outline of individual office functions in this level is not feasible because they will vary depending on the action plan developed. Generally, the offices will perform duties in line with their traditional roles and functions.

5. Feedback - This phase is designed to provide the necessary, ongoing information, and to provide a summary report of the actions that took place. During this phase the Regional Enforcement Division assumes the lead. All reports concerning the status of the action are generated by the Enforcement Division and transmitted to PTSED headquarters. This procedure provides one reporting line to headquarters which avoids duplication. In addition, at the conclusion of all actions, the Regional Enforcement Division generates a summary report of the steps taken during the hazard incident and distributes this report to all relevant programs.

6. Follow-up - This phase of a hazard situation involves an analysis of (1) the actions that took place during the implementation phase, and (2) the steps that could be taken to prevent future situations of this type. Each office that was involved in the incident performs this analysis, paying particular attention to areas which directly involve programs for which they are responsible. A consolidated report is then prepared by PTSED and transmitted to the appropriate offices for action. The report may recommend actions such as standard setting, policy changes, and suggested legislative amendments. The follow-up phase serves as a mechanism that can be used both to assess Agency actions and to make changes in policy or procedures which will enable the Agency to act in a more effective manner in future activities.

Appendix - Examples of Problem Situations

The following summaries of actual occurrences have already been considered by EPA Headquarters. Some were considered to be strong candidates for §7003 actions, while others were judged to be inappropriate for such actions. Comments pertaining to appropriateness are provided for each case.

1. Case No. 1 - Industrial waste hauler was observed dumping industrial waste into a lagoon located on the property of a person owning a cesspool waste disposal site. As a result of samples taken, certain hazardous chemicals were found in the lagoon, and in a pond and water supply reservoir in the watershed for the area. Two of these chemicals have been identified as hazardous substances in the Federal Register pursuant to §311(b)(2)(A) of the Clean Water Act. The site in question was also not on the hauler's permit as a place where he is authorized to dump industrial wastes. Headquarters considers this case a very good example of an imminent hazard.

2. Case No. 2 - Facility owner had accumulated over 50,000 drums and a number of full storage tanks, many of which were leaking. The facility is on sandy loam soil and in area with a high water table. It is located on the edge of a town adjacent to residential property with an elementary school within 100 yards from the leaking tank cars. The operator's records were inadequate to discover what was being stored, but it was determined from an inspection of the site that a number of hazardous wastes were being improperly contained. The inspection further revealed that strong odors emanated from the facility, and a fire hazard existed. Headquarters considers this case a very good example of an imminent hazard.

3. Case No. 3 - The owner of a hazardous waste disposal site, after having declared bankruptcy, left the site in a condition in which the groundwater was being contaminated, and it could be expected that surface runoff from the site would enter a nearby brook. There is also a possibility of contamination of the local water supply from contaminated surface runoff entering into the sewer system. These sewers drain into a nearby river, as well,

Mr. GREENE. As I understand this document, it does not suggest to EPA regional offices or other offices that they are to seek out imminent hazards. Is that your understanding of this document?

Mr. KAUFMAN. Yes, sir, that is my understanding of the document.

Mr. GREENE. Very good.

I have no further questions, Mr. Chairman.

Mr. NOWAK. Mr. Chairman?

Mr. GORE. Mr. Nowak.

Mr. NOWAK. Thank you very much.

Just to try to put this in focus, you have stated here that they are not going out to look for any new situations. The situation that you had mentioned, where you were told there were worse situations than the chemical plant you were inquiring about, have they ever been identified to you, the other worse situations?

Mr. KAUFMAN. No, sir, they have not.

Mr. NOWAK. And to this day, you have no knowledge, even though you are the manager of the assessment program?

Mr. KAUFMAN. I have no knowledge, and I have been instructed to stay out of the region.

Mr. NOWAK. Can you tell us where we could go to positively identify all of the sites which have already been logged by the agency in the various regions?

Mr. KAUFMAN. I think a good low-cost first step is to go through and scrutinize all the regional office files and see what information is available in those files right now. I think we should also try to work with the State and local governments to go through their files, also.

Based on the information we then gather, to prioritize an assessment program, to find out if drinking water has been contaminated, if the air is being contaminated, and do some quick epidemiological work to see if people are suffering health effects.

We can do that very quickly at very low cost.

Mr. NOWAK. Wouldn't that information be essential for your own setting of priorities, for the most effective use of the Agency's enforcement resources?

Mr. KAUFMAN. Yes, but I think some basic information would be available, just go through the files. We had a study done that was completed over a year ago, which showed that between 80 and 90 randomly selected hazardous waste disposal sites were contaminating ground water.

So, based on our technical knowledge, and looking at what is in the files, we could just by going through the files set preliminary priorities for doing further investigation.

Mr. NOWAK. What remedies are available under the imminent hazard section of RCRA?

Mr. KAUFMAN. Well, I am not a lawyer, but in my reading of that section we are allowed to go to court and basically get a situation resolved, a cease and desist order. But we can also, short of going to court, we can, when we find this information that people are being poisoned, we can alert the public to that and that has a tremendous effect, also.

Mr. NOWAK. Does it apply, then, to an active as well as an inactive site?

Mr. KAUFMAN. Yes. If I might elaborate on that question, we like to think of four different types of sites.

First, an abandoned site, where the site is currently owned by someone who is in no way involved, such as the Love Canal situation.

The second type of site is an abandoned site that is not being used anymore but is on the property of a party who was involved with the disposal.

The third type of site is an existing site, but a bad site, that probably could never come up to our standards.

The fourth type of site is a good existing site that could meet our standards.

The imminent hazard provisions certainly could be used for the last three. The Love Canal type situation, where it is very difficult to go after a party, might not be appropriate, but certainly the other three types of sites, imminent hazard authority could be used.

Mr. NOWAK. Are there any disincentives that you could tell us about within EPA for identifying future Love Canals?

Mr. KAUFMAN. Yes, sir. Probably the first disincentive, as reported to me and the rest of the division staff on June 15—by our division director, was the administration's policy to cut back the EPA hazardous waste program.

The second disincentive is the difficulty in siting hazardous waste facilities. By getting more people aware of the problems of hazardous waste facilities, it would be more difficult to site them.

The third reason would be an embarrassment to some of EPA's regions. For example, in the Toone case that you just heard about, in doing further investigation, after we were turned off the case, we found that the regional office may have been aware of the magnitude of the problem many years before the people who were impacted were told.

The fourth disincentive would be our trying to coerce States to take over the hazardous waste program so EPA wouldn't administer it. Some of the investigation work might embarrass some of the states in their handling of the hazardous waste problem.

Mr. NOWAK. In your opinion, even if there is no declared imminent hazard, doesn't the public have a right to know?

Mr. KAUFMAN. In my opinion, it certainly does.

Mr. NOWAK. Thank you very much, Mr. Kaufman.

Thank you, Mr. Chairman.

Mr. GORE. Mr. LaFalce.

Mr. LAFALCE. Thank you very much.

Mr. Kaufman, you made a statement that in 1976, prior to the enactment of RCRA, there seemed to be a more vigorous program to find and assess damages from hazardous wastes and facilities. That puzzles me.

How do you account for the fact that there was a more vigorous program to find and assess damages from hazardous waste facilities prior to the enactment of RCRA than there has been subsequent to RCRA as enactment.

Mr. KAUFMAN. One reason is that the regional offices, many of the regional offices prevailed upon headquarters not to do any more damage assessments, because we have the act, and their

feeling was that the purpose of doing these assessments was to get the act passed, and that was all.

Mr. LAFALCE. Was this ever expressed in writing, or is this just your interpretation?

Mr. KAUFMAN. I have a memorandum of a conference called with the regions that took place several months ago, where this——

Mr. LAFALCE. Which regions?

Mr. KAUFMAN. Particularly the one I am familiar with is region 5, which generates the most hazardous waste in the United States.

Mr. LAFALCE. And that region encompasses?

Mr. KAUFMAN. It encompasses Illinois, Indiana, Ohio, the major industrial areas of the United States.

Mr. LAFALCE. Of course, I represent the Love Canal area of Niagara Falls, which comes under the region now headed by Mr. Beck. I wonder if you could explain to me your experiences since roughly 1976, or January of 1977, to the present, with that region, with particular reference to the Love Canal, because I first invited the representatives of the EPA to the Love Canal, or apprised them of that in a letter dated July 1, 1977, to Mr. Costle.

Did you have any particular feelings, Mr. Kaufman? I never dealt with you. I did deal with Mr. Beck, Mr. Outwater, Mr. Librizzi, Mr. Jorling, Mr. Plehn, et cetera.

Do you have any involvement that you think would bear some light on what has transpired in the Love Canal situation?

Mr. KAUFMAN. First of all, let me preface the statement by saying that the EPA region that your district is in is one of the better EPA regions. The only involvement I had was when I found out about the Love Canal situation, in talking to the region, and trying to develop some policy to deal with it.

They expressed concern that EPA, if they used the imminent hazard authority——

Mr. LAFALCE. Who is "they"?

Mr. KAUFMAN. The regional office.

Mr. LAFALCE. OK.

Mr. KAUFMAN. The regional office expressed a concern that EPA might have to pay for some of the cleanup in solving the problem. They were a bit concerned about that situation.

Mr. LAFALCE. Well, I was too, because I wanted them to.

Mr. KAUFMAN. Well, what happens when that happens is that gives EPA a negative incentive to find other Love Canals because that money gets diverted from regulatory enforcement programs.

In other words, what gets set up is a conflict of interest in EPA when EPA has to take money for these types of cases from its regulatory enforcement budgets.

Mr. LAFALCE. Let's discuss some of those things. I would like your perspective on some of the things I was trying to do from July 1977 to the present.

First of all, I was trying to get section 311 implemented by having regulations promulgated. That concerns you because 311 does involve hazardous substances, reaching out into navigable waters.

What caused the great delay, 5 to 6 years, in the promulgation of the regulations of 311?

Mr. KAUFMAN. I can't speak on that issue because I have no knowledge of that particular office of EPA.

Mr. LAFALCE. Let's go to section 201. I constantly tried to get EPA in an innovative way to remedy the Love Canal situation. Were you involved in that type of discussion?

Mr. KAUFMAN. No, sir, I am sorry I was not. I can't answer that because I have no knowledge of that situation.

Mr. LAFALCE. Let's go to section 504. Were you involved in that, because Congress authorized $10 million but we do not have a single penny appropriated. Were you involved in any attempt on the part of EPA to try to convince Congress or to convince officials within EPA to give this a higher priority?

Mr. KAUFMAN. No, sir. The management of EPA did not involve me in this one either.

Mr. LAFALCE. Were you involved in any way in the Love Canal situation in some respect I should be aware of?

Mr. KAUFMAN. Only in trying to see that the Love Canal situation was being handled and that the public was being made aware of the problem and an adequate assessment was being done.

Mr. LAFALCE. That was my understanding, that the New York regional office was really doing all they possibly could. I have particular praise for Mr. Eric Outwater and Mr. Bill Librizzi and a number of others.

Mr. KAUFMAN. That is why I didn't focus very heavily on that because I felt that one was being handled appropriately. I spent my time on the ones not being handled appropriately.

Mr. LAFALCE. Mr. Chairman, with your permission I know we have some of these memos today but somehow they got into the hands of the Buffalo Courier-Express prior to today's hearing, and in the Buffalo Courier-Express on Sunday, October 29, 1978, there is a major headline: "EPA Places Hold on Dump Battle," a copyrighted story by David Lynch and also in this morning's Buffalo Courier-Express there is an article, again copyrighted, by Mr. Lynch, "Secret Cost Hunt Begins on Nation's Toxic Site Cleanup"—referring to the OMB memo. With your permission, Mr. Chairman, I would like to include both of those copyrighted stories in the body of today's record.

Mr. GORE. Without objection.

[The articles referred to follow:]

[From Buffalo Courier-Express 10/29/78

Memos Set Peril on Back Burner

EPA Places 'Hold' on Dump Battle

By DAVID E. LYNCH
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WASHINGTON — The federal Environmental Protection Agency (EPA) has "put a hold" on all efforts to combat immediate hazards from toxic waste dumps, documents obtained by The Courier-Express show.

The documents, a number of intradepartment memos, show EPA has adopted a firm policy which curtails assessment of hazardous waste damages and discovery of potentially hazardous chemical waste dumps.

"It is not expected that EPA make any effort to 'discover' " imminently dangerous toxic waste sites, states one memo to EPA regional administrators. That memo, dated Oct. 2., was signed by Thomas C. Jorling, EPA assistant administrator for water and waste management.

"Put a hold on all imminent hazard efforts," states a memo to John P. Lehman, director of EPA's Hazardous Waste Management Division. Dated June 16, that memo was signed by Steffen W. Plehn, EPA's deputy assistant administrator for solid waste.

Delayed Regulations

The Plehn memo went on to explain that work on drafting regulations to enforce the Resource Conservation and Recovery Act (RCRA) "has higher priority at this time."

Plehn was referring to regulations designed to give the EPA the tools for "cradle to grave" protection from and control over toxic wastes.

RCRA, passed by Congress in 1976, required EPA to come up those regulations within 18 months, or by April, 1978. Now EPA says it will not be able to provide the regulations until January, 1980.

However, The Courier-Express learned from the EPA memos that the regulations, even if they are issued in January, 1980, will not be enforceable until July, 1980.

The House Subcommittee on Oversight and Investigations will conduct a hearing on the lengthy delay on Monday.

That hearing was requested by Rep. Henry J. Nowak, D-Buffalo, after he read an 11-part series in the Courier-Express last month. Nowak said the series "chillingly described the breadth and depth of the hazardous waste crisis."

22,500 Tons a Month

The EPA apparently is well aware of the national scope of the hazardous waste problem. In a June 21 memo Steve Caldwell, a high ranking official with EPA's assessment program, estimated that 22,500 tons of hazardous waste are released into the environment each month.

His memo entitled: "Comparative Cost of Full implementation of RCRA Versus Delayed or Curtailed Implementation."

His conclusion: "Given even the most superficial preliminary examination, it is ill advised to assume that delay or weakening of the hazardous waste regulations is cost-effective.

"To accept the statement that the political winds are wrong or that the taxpayers will not accept the costs for implementation without even taking our case to the public and the politicians would be abdicating our expressed responsibility to protect public health and the environment.

"Given the health and environmental implications of failing to effect protection from hazardous wastes, that would be morally reprehensible."

No Searching

However, Caldwell's plea for a moral response to the hazardous waste crisis contrasts with the approach taken by Jorling in his Oct. 2 memo.

Jorling, in laying down the policy for a national inventory of hazardous waste sites, states:

"It is not expected that EPA make any effort to 'discover' sites (through field visits, substantial file searches or other

means) for which we do not currently have information.

"Rather, it is expected that EPA make estimates based on knowledge about present and past industrial activity and present and past disposal practices in each region.

"It is not required that you involve the states, but, if you can consult with and obtain information from your states without causing undo burden, such state participation would be welcomed."

The don't-look-for-trouble tone of the Jorling memo is pretty much the policy of the EPA at this point, according to sources within the agency.

EPA staff members charged with day-to-day supervision of hazardous waste programs say it is just about impossible to get the regional officials to take action against operators of illegally-run hazardous waste facilities.

In August, Hugh B. Kaufman, the program manager of the EPA's assessment program, wrote Plehn complaining abo the Tennessee regional office's reluctan to act against a Toone, Tenn., firm t was suspected of contaminating grou water.

On Aug. 14, Kaufman received a ste memo from John P. Lehman, a Plehn a who is director of the EPA's hazard waste management division.

Lehman's memo says an enquiry w

EPA
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the regional office found that there were no grounds to declare an imminent hazard in which EPA would take action against the Velsicol Corp., accused of causing the contamination.

Sources within the agency say RCRA is often used as a reason for not taking action to clean up imminently dangerous sites.

Prior to passage of that law in 1976, the EPA had an effective program of helping state and local governments police and clean up after hazardous waste disruptions, EPA sources said.

But now that the agency is supposedly putting all its solid waste staff efforts into preparing the regulations for RCRA, the EPA says it is helpless under the law to take action in the Love Canal-type cases.

In a Dec. 15, 1976, letter, Sheldon Meyers, the deputy assistant administrator for solid waste, informed the head of a West Virginia citizen action group that EPA could not look into a chlorine gas problem at a Charleston landfill.

He wrote that the office had investigated such cases in the past, but added:

"However, because of the passage of RCRA on Oct. 21, 1976, we have had to suspend our damage assessment activities in order to meet the provisions of that act, as no additional resources have been allocated as yet."

Kaufman, the person in charge of the day-to-day management of the hazardous waste program, discussed that problem in an April 20 memo to Lehman:

"It appears that hazardous waste facilities are aware that EPA will not be able to throughly scrutinize facilities and compliance with our standards for a few more years.

"Companies who have assessed their facilities and concluded that they could not get an EPA permit to operate (as hazardous waste handlers), once our strong enforcement begins, have a positive incentive to take as much waste as possible and provide only minimum care until such time as RCRA subtitle C is fully implemented.

"At which point they can close or abandon the facility with virtually no penalty."

He concludes with a recommendation that the agency "shift our policy emphasis and not close our eyes to the fact that hazardous waste facilities located in many states are presenting hazards to the public health and environment.

". . . I have noticed that, in some regions of EPA a policy of closing their eyes to hazardous waste problems in states in order to cultivate their favor to pick up the hazardous waste program has been occurring.

"I think a positive statement by us against this practice should be made immediately."



Steffen W. Plehn

That letter was sent six months be Jorling's memo instructing EPA offic not to try to "discover" new dange sites.

[From Buffalo Courier-Express 10/30/78]

Secret Cost Hunt Begins on Nation's Toxic-Site Cleanup

BY DAVID E. LYNCH

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WASHINGTON — The Carter administration has formed a secret task force to evaluate the possible cost of cleaning up the millions of tons of hazardous waste throughout this country, The Courier-Express learned on Sunday.

According to Environmental Protection Agency (EPA) memos supplied to The Courier-Express, the Office of Management and Budget (OMB) is "concerned about the increasing pressure on the federal government to provide funding" for this cleanup.

It is difficult to determine when this task force was set up, or who is on it, but according to an Oct. 2 memo from Thomas C. Jorling, EPA's assistant administrator for water and waste management, it is an outgrowth of the Love Canal contamination in Niagara Falls.

The memo says the task force was set up to "assess the potential magnitude of (Love Canal-type incidents) and to develop and assess various options for federal policy respective to such incidents."

A Key Issue?

The Jorling memo instructs EPA regional administrators to assist the OMB task force by providing information on the number and types of hazardous waste facilities in the country.

As reported in Sunday's Courier-Express, it is in this memo that Jorling tells his regional administrators that "it is not expected that EPA make any effort to 'discover' sites (through field visits, substantial file searches or other means) for which we do not currently have information."

This memo also provides some insight into the Carter administration's concern that hazardous waste will be a key issue in Congress next year.

"It is very probable that Congress will want to address this issue in oversight hearings next year," Jorling says in his memo, "and (it) will expect and request EPA to supply substantive information on environmental incidents, both recent and potential."

Hearings Today

The House Subcommittee on Oversight and Investigations has scheduled such a hearing for this morning. The subcommittee wants to find out why the EPA has failed to provide regulations for the Resource Conservation and Recovery Act (RCRA) of 1976.

Under that law, EPA was to have the regulations ready within 18 months. That deadline expired last April, and the RCRA program that is to provide "cradle to grave" protection from and control over hazardous wastes will not be operable until July of 1980, according to EPA.

The Senate Committee on Public Works and the Environment has said it plans to hold similar hearings this year. There is a possibility that a hearing will be held in Niagara Falls, according to a committee aide.

An Aware Public

The Jorling memo to the regional administrators contains a tone found in several of the documents obtained by The Courier-Express. And that is a "don't-look-for-trouble" tone.

Jorling writes that the inventory will "add national visibility to the (Love Canal-type) incidents identified therein, because the inventory will be shared with Congress and will probably be requested by and made available to the public.

"Because of this, incidents included in the inventory should be situations for which you have more than circumstantial information, the public (at least locally (Washington) is already aware, and publicly accessible information is already on file."

Aide's Interpretation

A source in the EPA says this is read in the agency to mean that the regional administrators are to provide information only on sites that the public already knows about.

Jorling is afraid that facts about "discoveries" could fall into the hands of the public through a Freedom of Information Act request, the source said.

Mr. GORE. Mr. Kaufman, your responsibility is to assess the extent of these hazards. You are the person within EPA who has that primary responsibility?

Mr. KAUFMAN. Yes, sir. The lead office and focal point for this.

Mr. GORE. Yet you have no budget?

Mr. KAUFMAN. No, sir, no budget to do this activity.

Mr. GORE. And one staff member?

Mr. KAUFMAN. Yes, sir, one staff member, who came on board last March.

Mr. GORE. Due to the seriousness of the threat we are exploring here, it would seem to me the priorities within EPA are a bit askance. Do you have a secretary?

Mr. KAUFMAN. Not now.

Mr. GORE. Do you type your own letters?

Mr. KAUFMAN. Yes, sir.

Mr. GORE. I notice the Golden Fleece Award last week went to EPA for studying alternate means of disposing of cow manure. I wonder if some of that money might have been more fruitfully used to get you a secretary.

How many sites such as Toone, Tenn.; Love Canal, the other sites that have been mentioned, how many of them are there in the country? Do you have any way to estimate?

Mr. KAUFMAN. To be honest with you, there have to be thousands when you look at the amount of hazardous wastes that have been generated every year. But without going and doing assessments and going through regional files and working with the States, I have no way to make even a close estimate of how many thousands.

Mr. GORE. And you have been ordered not to look closely?

Mr. KAUFMAN. Yes, sir.

Mr. GORE. Why do you think you were ordered not to look closely? You mentioned a few reasons before.

Mr. KAUFMAN. Without repeating myself, I think this type of activity is the lowest priority activity in the Hazardous Waste Management Division.

Mr. GORE. It should be, in my opinion, one of the highest. I want to explore with you in a little more detail the memos relating to Toone, Tenn. We heard from Mr. and Mrs. Sterling earlier about how they attempted to contact EPA to get some answers. They asked EPA for some information. Well, here is the answer to your question. Here is what happened. You sent a memo to Mr. Steffan Plehn. Is that the correct pronunciation?

Mr. KAUFMAN. Yes, sir, it is.

Mr. GORE. The memo which came back to you says, and I quote:

> Based on the information in your memo, the problem appears, as you say, perhaps serious. However, a direct link to the Velsicol hazardous waste disposal site apparently has not yet been established.

This is what I was referring to earlier. Their response was: Do nothing because we don't have any connection between the disposal site and the well contamination.

Mr. KAUFMAN. That is what the region said, yes, sir.

Mr. GORE. That is what the region said.

I want to avoid using language that is too harsh. But when you have 16 million pounds of exotic chemicals a quarter of a mile from

wells that have the same chemicals in them, it would seem not too difficult a task to make that connection.

Mr. KAUFMAN. I felt that way, and that is why I tried to pressure the region to raise the reply procedure.

Mr. GORE. What is this region stuff? Is EPA set up in such a way that they cannot respond effectively to a hazard of this kind?

Mr. KAUFMAN. I would rather you ask that question of my management rather than of me.

Mr. GORE. Perhaps your superiors would be in a better position to answer that question. I would like to insert these Toone memos into the record at this point.

[The memorandums referred to follow:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 3 1978

OFFICE OF WATER AND
HAZARDOUS MATERIALS

SUBJECT: Request for Action Concerning Drinking Water Contamination from Hazardous Waste Disposal in Toone, Tennessee

FROM: Hugh B. Kaufman, Acting Chief
Assessment and Technology Branch, HWMD

TO: Steffen W. Plehn, Deputy Assistant Administrator for Solid Waste

THROUGH: John P. Lehman, Director
Hazardous Waste Management Division

In the course of making damage assessments, a situation has come to our attention which we believe needs further attention immediately. Specifically, we spoke with a Mrs. Christine Sterling, wife of Woodrow Sterling, a contractor in Medon, Tennessee, a rural community near Toone in Hardeman County about 90 miles east of Memphis. According to Mrs. Sterling, the drinking water from their family well and at least four other wells in the area is undrinkable. There is a serious odor and taste problem with the water. Since December, the State Health Department has told these people not to drink from the wells. A Civil Defense unit has supplied them with a trailer from which they have been obtaining drinking water every day since December. The people are still bathing and washing dishes with the contaminated water. Mrs. Sterling and others are afraid that even these uses, given the prolonged exposure, may be harmful to their health. She is not sure of the exact identity of the contaminants, but she says as many as thirteen chlorinated hydrocarbons have been found in the condemned water.

Mrs. Sterling and other area residents believe that the contaminants are traceable to a dumping ground about 1/4 mile from the Sterlings' property. The dumping ground is the burial site of drums containing thousands of gallons of chemical pesticide wastes from the Velsicol Chemical Corporation in Memphis. We have not been able to discover whether State and/or Regional EPA authorities have sampled the Velsicol wastes to see if they match the chemicals found in the Sterlings' well.

The Sterlings and other community residents have appealed to a number of State and Federal authorities in attempting to remedy their situation. The State Water Quality Division of the Public Health Department has tested the wells and has shut them down, but has made no public admission that the chemical contaminants are the same as those in the nearby Velsicol wastes. The Sterlings have also contacted the EPA Regional Office in Atlanta and spoken with Roy Clark and others there. They reportedly told her that they cannot consider this situation a high priority. The Sterlings have also contacted their Congressman, Ed Jones, and one of their Senators, Jim Sasser. Sasser's office has helped their community receive approval for a grant which will provide a pipe to city water. This water could also become contaminated if the Velsicol wastes are leaching. This project, in any case, will not be completed for several months.

The citizens have enlisted a lawyer (John Wilder of Somerville, also Lt. Governor of Tennessee) and hope to bring suit against Velsicol. They have organized a community fund raising drive to finance the lawsuit. However, the attorney has advised them that they may need to wait 3-4 months for test results from the State before they can file the suit. In the meantime, there is substantial local and regional publicity, and a number of reporters have openly questioned the efficacy of both EPA and the state government in this matter. (See attached article, Memphis Commercial Appeal, 6/2/78).

Frankly, we are concerned about the present and potential environmental damage to the drinking water of the people of Toone. To aid us in doing an adequate job of damage assessment, we need information concerning, among other things, the geological structure of the Toone water supply aquifers. When we spoke with Region V's James Scarborough (July 17, 1978) and asked about this situation, we were told not to talk to state authorities or Velsicol. Mr. Scarborough told us that he <u>does</u> have information on this incident but he will not make it available to us.

There are apparently hydrocarbon contamination problems here, and they are perhaps serious. The local citizens are exasperated. Therefore, we would like to request that you ask Mr. Wilson if he would have an S&A team gather the appropriate geological information and investigate the contamination and whether it can be traced to Velsicol. If it can be traced to Velsicol, an enforcement action may be necessary in order to require Velsicol to clean up the mess and to do whatever is necessary to ensure that the contamination does not spread to Toone's city drinking water supply.

Steff, I believe you should use your authority to assure that EPA immediately and thouroughly investigate this situation. If the problem is as bad as it appears, I recommend that you ask Mr. Wilson to "trigger" EPA's authorities, including RCRA Section 7003, to solve it and to afford the people of Toone, Tennessee the health and environmental protection they deserve.

I would appreciate knowing what action you take in this matter at your earliest convenience.

'Do People Have To Die?' . . .

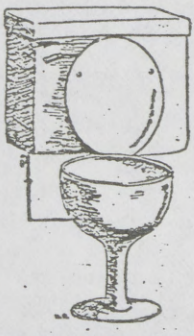
By PATRICK M. CHOATE The Commercial Appeal, Memphis, Friday, June 2, 1978

EVERY MOLECULE of water that has ever existed on this planet is still here. But even though 70 per cent of the Earth's surface is covered by water, only 1 per cent of that water is usable by man. That's right, 95 per cent is locked up in the oceans while 4 per cent is allocated to glaciers and the polar ice caps.

With only 1 per cent left, it is imperative that we use and reuse our water wisely. For centuries man and nature were in concert and natural processes kept our waters clean.

However, in recent decades man has overloaded the ecosystems with so much pollution that it's getting harder and harder to clean up recycled water. If we're not careful, in a few years water will be the big topic of public concern, not energy. After all, energy is a luxury . . . water is an essential to life.

MOST AMERICAN communities get their water from lakes, rivers or aquifers (underground rivers). And since every use of water—whether at home, in the factory, or on the farm—results in some change in its quality, we have to keep in mind that today's wastewater is tomorrow's cup of tea.



Every time you brush your teeth, flush the toilet or do the laundry, you're contributing to the problem. True, you're only using a small amount of water. What about the big users? What about industry? God only knows what they're pumping into the sewer systems.

Since no single individual or corporation owns the Memphis water supply, and as long as we all draw from the same well, it comes down to a question of responsibility. How will today's squandering of clean water impact our future water resources? The relationship between cancer rates and drinking water obtained from polluted sources has been well established. According to a 1975 Scientific American article, "Almost all cancers appear to be caused by exposure to factors in the environment."

During the last three weeks, both Memphis newspapers have carried articles on an incident in Hardeman County involving people who have found out just how vulnerable your water supply can be. Steve Sterling and his family live on a farm near Toone, Tenn. Lately their well has been out of commission and they have been drawing their water from a borrowed National Guard water trailer.

The Sterlings and other Toone residents claim their wells have been contaminated by one of their neighbors . . . the Velsicol Chemical Corp. It seems Velsicol bought 243 acres in the area several years ago and buried thousands of 50-gallon drums filled with toxic waste chemicals. Now investigators are suggesting that chemicals found in the well may have come from the Velsicol dump site.

While this situation poses a real health danger to the people of Toone, who's to say what might happen to the Memphis water supply if those buried toxic chemicals leached their way into the underground river that runs through West Tennessee to our artesian wells?

IT'S ALL TOO EASY to dismiss the Sterlings' water problems, thinking, "That'll never happen to me." That's probably what hundreds of Arkansas and Missouri families thought last week when they read about the Sterlings. That was before more than 200 of them came down with serious intestinal disorders which apparently were caused by sewage leaking into their overall water supply.

The Sterlings live 60 miles east of Memphis. The Arkansas/Missouri families live about 100 miles to the west. Is the problem getting close enough to home?

WITH TOXIC SUBSTANCES being routinely dumped into America's waterways, and considering these chemicals are among the most difficult pollutants to neutralize, they can pass through our municipal water treatment plants, right into our rivers. Not knowing about the problem can lead one into a false security.

The most publicized case of water pollution in years made a pesticide called Kepone infamous. In 1975, a subsidiary of Allied Chemical Corp. discharged Kepone (a lethal poison used to kill fire ants and roaches) into a tributary of the James River. As a result, the governor of Virginia placed a ban on all fishing, crabbing and oystering in the James River until 1979. What about the folks downstream from that spill? How's that for corporate responsibility?

Horror stories like these are a dime a dozen. If you spent an hour talking with employes of the Water Quality Control Division of Tennessee's Department of Public Health, you would understand the scope of ongoing pollution problems and what an uphill fight concerned public officials have in trying to enforce existing laws. Our state water quality people are our first line of defense. Time has shown federal regulation under the Environmental Protection Agency (EPA) ineffective at the state level, mainly due to limited funds and manpower. And though EPA deserves credit for honest effort, in many cases political pressure is brought to bear on the agency by elected officials who respond to individuals, corporations and municipalities who have committed water quality violations.

LIKE EVERYTHING else, ultimately the individual consumer bears the brunt. Land speculation and resulting urban sprawl place new strains on existing water treatment facilities; irresponsible industries dump toxic wastes into our waterways; and when city or state governments decide to provide for these problems, where do you suppose the money comes from? Your taxes. The most galling part of this predicament is those industries who don't clean up their wastewater, or say they can't afford to. Their laundry bill is passed on to you and me.

According to the experts, technology already exists which could "significantly reduce or eliminate most of the toxic and carcinogenic organic chemicals found in drinking water." We are told that activated charcoal filters do this effectively and add no more than 15 cents to each dollar already spent for drinking water.

This may sound like salvation, but why should the cost of cleanup come out of our pockets when chemical companies are doing the dirty work? Dr. Joseph H. Highland, chairman of the Environmental Defense Fund's toxic chemical program, comes closer to the point: "This is only a short-term solution. The only long-term solution is to curtail toxic discharges at their source, as is clearly mandated by the 1972 Federal Water Pollution Control Act amendments."

In America, water pollution problems are approached like all other complex social dilemmas. It seems we have to come to the brink of disaster before decisive action is taken. Why do we have to wait until people die from ingestion of toxic drinking water? When will industry put the community's good health ahead of profits? When will elected representatives stop playing politics with water quality?

38-748 0 - 79 - 23

DATE: July 17, 1978

SUBJECT: Hazardous Waste Management Damage Reports

FROM:
Virginia R. Thompson V.R. Thompson

TO:
Hugh B. Kaufman, Program Manager
Assessment Program, HWMD

Today as per your instructions, I began looking into the feasibility of writing a hazardous waste management damage report on the contamination of drinking water wells in Hardeman County, Tennessee. A column in the Memphis Commercial - Appeal on Friday, June 2, 1978, reported that a certain Toone family and others in Hardeman County had had their well water contaminated. The family alleged that the source of the contamination was improperly buried barrels of toxic chemical wastes, disposed of by Velsicol Corporation in Memphis.

I called Jim Scarborough in the Solid Waste Section of the Region IV Office. This is the conversation as I remember it:

VRT: We are writing damage reports on hazardous waste management. It has come to our attention that there is well water contamination in Hardeman County, Tennessee, which citizens claim is caused by wastes improperly buried by Velsicol in Memphis. Are you familiar with this case?

JS : Yes. (Silence)

VRT: Has the Regional Office done any investigation of the claims?

JS : Yes. (Silence)

VRT: Can you tell me the status of your work there?

JS : No (Silence)

VRT: You cannot give me any more information? Have you done water sampling or anything?

JS : No, we have not taken samples, and I'm not going to tell you anything more about this. Listen, this is a potential enforcement action and you people up there better stay out of it. I mean, I'm telling your office to stay out of this altogether.

VRT: Thank you.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF SOLID WASTE

DATE: AUG 14 1978

SUBJECT: Toone, Tennessee, Case

FROM: John P. Lehman, Director
Hazardous Waste Management Division (WH-565)

TO: Mr. Hugh B. Kaufman, Program Manager
Assessment Program, Assessment & Technology Branch (WH-565)

In your August 3 memo addressed to Mr. Plehn concerning the Toone, Tennessee, case you describe a groundwater contamination case which may be related to improper hazardous waste management by Velsicol Corporation, indicate that you have attempted to obtain further information from Region IV but were turned down, and state that Mr. Plehn should use his authority to assure that EPA immediately investigates the situation. If the situation warrants, you recommend that Mr. Plehn ask OE to trigger RCRA imminent hazard authority to solve the problem.

My comments on your memo are as follows:

1. Based on the information in your memo, the problem appears, as you say, "perhaps serious." However, a direct link to the Velsicol hazardous waste disposal site apparently has not yet been established.

2. The Tennessee State Water Quality Division has investigated the situation to some degree. In many cases it is appropriate for EPA to rely on State-level action rather than conduct parallel investigations. Without further information, it is difficult to say whether EPA should proceed with an independent investigation in this case.

3. If you have difficulty in obtaining such information from our regional offices in the conduct of your duties, then your appropriate response is first to ask me to intervene. I believe we should exhaust Division-level avenues to determine the facts in this case before we move up the line.

I received your memo on August 4. On August 7 I called Mr. Scarbrough in Region IV to determine the facts and status of the case. Mr. Scarbrough reported:

1. The Toone case is not new; it has been in and out of the news for years.

2. No conclusive link between the Velsicol site and groundwater contamination in Toone has yet been established.

3. The state of Tennessee has prevailed on Velsicol to conduct a study of the situation. Velsicol has hired Geraghty & Miller to conduct the study, which is to start this fall.

4. When you called Mr. Scarbrough earlier, EPA Region IV was in the midst of an enforcement action against Velsicol on a charge of upsetting a sewage treatment plant by improper waste discharge. He did not want headquarters personnel to disturb that action. The judge subsequently ruled against EPA in the case.

5. Mr. Scarbrough concludes that it would be very difficult to prove an imminent hazard under RCRA at this time in the Toone case. He intends to wait to see the results of the State/Velsicol/Geraghty & Miller work before taking further action.

The substance of your memo and these findings were discussed with Mr. Plehn and Mr. Dietrich on August 9.

cc: Steffen Plehn
Gary Dietrich

Mr. GORE. I would like to commend you for your appearance, Mr. Kaufman, and I would like to note that you appear at our urging and at our request, and I hope that EPA reassesses their priorities and spends less time advising farmers to put plastic sheets over cow piles and more time looking at where the waste from factories making those plastic sheets is going.

Mr. KAUFMAN. I agree, sir.

Mr. GORE. Thank you very much for your appearance.

Mr. KAUFMAN. Thank you, sir.

Mr. GORE. Our next witness will appear in a panel and I would like to ask all of you to come forward: George Wolff, Dr. Dana Davoli, Mr. Leslie Dach accompanied by William Butler.

Would all of you stand and raise your right hand.

Do you solemnly swear that the testimony you will give in this matter will be the truth, the whole truth, and nothing but the truth, so help you God?

[Chorus of "I do."]

TESTIMONY OF LESLIE DACH, SCIENCE ASSOCIATE, ENVIRONMENTAL DEFENSE FUND, ACCOMPANIED BY WILLIAM BUTLER, GENERAL COUNSEL, ENVIRONMENTAL DEFENSE FUND; DANA DAVOLI, Ph. D., STAFF SCIENTIST, CITIZENS FOR A BETTER ENVIRONMENT, AND GEORGE WOLFF, CHIEF, ENVIRONMENTAL DIVISION, ILLINOIS ATTORNEY GENERAL'S OFFICE

Mr. DACH. Good morning. My name is Leslie Dach. I am a Science Associate with the Environmental Defense Fund (EDF). I am accompanied this morning by our general counsel, William Butler. EDF is a nonprofit organization with over 45,000 members dedicated to finding scientifically sound solutions to our Nation's environmental problems. For the past 10 years, EDF, through a variety of administrative, judicial and legislative activities, has attempted to minimize human exposure to toxic chemicals.

In regard to the Resource Conservation and Recovery Act (RCRA), EDF and its coplaintiff, Environmental Action, have filed suit in the U.S. District Court of the District of Columbia seeking a court mandated date for promulgation by the Environmental Protection Agency (EPA) of regulations required by RCRA. As you well know, EPA has failed to meet virtually all the statutory deadlines set by Congress for implementation of RCRA, thereby frustrating congressional intent in passing this legislation in 1976.

In today's testimony I will focus on the issue of EPA's failure to meet the deadlines imposed by Congress. While EDF contends that the draft regulations circulated by EPA fail adequately to protect public health and the environment, time constraints prevent me from discussing our detailed substantive concerns.

I will attempt to explain some of the reasons why EPA has moved so slowly and more importantly, I will contend that the agency continues it's dilatory approach. EPA is treating RCRA as minor legislation, unworthy of significant attention or commitment of resources. Congress should not allow that treatment to continue. Through this hearing and other actions Congress must maintain the pressure on EPA to do its job.

As you know, Congress, in RCRA, required the Administrator of EPA to promulgate five sets of regulations governing hazardous waste disposal. The five regulations cover the following areas:

One, section 3001—regulations identifying hazardous waste;

Two, section 3002—regulations establishing standards applicable to generators of hazardous waste;

Three, section 3003—regulations establishing standards applicable to transporters of hazardous waste;

Four, section 3004—regulations establishing standards applicable to owners and operators of facilities for the treatment, storage or disposal of hazardous waste; and

Five, section 3005—regulations requiring each person owning or operating a facility for the treatment, storage or disposal of hazardous waste to have a permit.

Congress clearly stipulated that the regulations be promulgated in final form within 18 months after enactment of RCRA, that is by April 21, 1978. EPA has totally failed to live up to Congress mandate. Not a single one of these regulations has been promulgated.

EPA now says that the earliest it can promulgate regulations under RCRA is the end of January 1980. This is nearly 2 years after the deadline set by Congress. EPA now says it won't even be ready to propose regulations until January 1979. Clearly this schedule should be unacceptable to Congress and the American public.

We have heard this morning of the contamination of drinking water by improperly handled hazardous waste. Over the past few months, we have read and heard about Love Canal in New York, the dumping of PCB's along the roads of North Carolina, and the poisoning of drinking water all over America. EPA Admnistrator Costle has publicly stated that 100 other Love Canals are just waiting to happen. Residents of small towns all over our country, in Gordon, Ga., in Wilsonville, Ill., are waking up to see tank trucks rumbling down their once quiet streets into recently opened hazardous waste disposal sites. These are sites that have no Federal permits, that meet no Federal requirements and that pose a potentially grave threat to health. This is to say nothing of the poisons that don't even make it into so-called hazardous waste disposal facilities but are dumped in open fields, in streams and in rivers.

Approximately 260 million pounds a day of chemicals that cause cancer, birth defects, nerve damage and that destroy rivers and wildlife are being disposed of without any Federal regulation, just as they were in 1976 when this legislation was passed.

EDF has listened with a sympathetic ear to EPA's lengthy but ultimately unpersuasive rationales for its inability to comply with the intent of Congress. Clearly, EDF's prime concern is that regulations protect health and the environment. If good regulations and timely promulgation were mutually incompatible, EDF would not sacrifice quality for time. However, this is not the case.

The abrogation of EPA's responsibility has resulted from ineffective management, interagency squabbling, inadequate resource budgeting, and a knowledge that ultimately the agency could get away with its disregard for clear congressional intent. This is not the first time that EPA has missed important deadlines. I am sure

that you are familiar with EPA's handling of the regulation of toxic chemicals under the Clean Water Act. EPA ignored Congress once, was hauled into court by EDF and others, and agreed to a schedule for implementation. Now we and our allies have been forced to go back into court requesting a contempt citation because EPA has even failed to meet the deadlines of the consent decree.

Let's take a look at the excuses and rationales we will hear from EPA in their attempt to explain their current situation.

The most likely excuse will be that the agency did not have sufficient resources to complete its tasks on time. While more money and more staff never hurts, it is simply not true that a lack of money prevented adherence to Congress deadlines. As a matter of fact, EPA has actually taken money out of the hazardous waste program that Congress has appropriated for that purpose. In February 1978, EPA's Office of Planning and Evaluation took $3.4 million fiscal year 1978 dollars away from the Office of Solid Waste (OSW). The majority of that money was earmarked for contracts relating to the development of the hazardous waste regulations. OSW never got that money back. EPA used the reduced OSW budget figure as the base for the fiscal year 1979 appropriation. If the agency felt that resources were limiting their productivity, it seems a bit strange that they would themselves take money away from the RCRA program.

The agency will also probably claim that the issues involved in drafting RCRA regulations are so complex and so new that the congressional deadlines were unrealistic. Again this is simply not true. The agency's delay is not based on having to deal with difficult technical issues for which new scientific work was necessary before decisions could be made. The agency has been vacillating on policy matters. EPA's managers have been simply unable to bite the bullet and make tough decisions. Instead they have procrastinated and thereby delayed promulgation for nearly 2 years.

EDF's conclusion that the lack of technical information is not the cause of the delay is based on an analysis of the draft RCRA regulations issued over the past year by EPA and agency internal memoranda. For example, a November 18, 1977, memo from John Lehman, Director of the Hazardous Waste Management Division, to Steffan Plehn, the then recently installed Deputy Assistant Administrator for Solid Waste—attachment 1 to this testimony [see p. 358]—lists the "hazardous waste related issues [that] are important for you to focus on." Not a single one of these is a technical issue. They all relate to decisions about the scope of the program, its cost and how to resolve arguments between different parts of EPA.

Another memo from Mr. Lehman, this one dated July 12, 1978, also discusses the issues that must be resolved before the hazardous waste regulations can go forward. Again these are policy issues. They include control of inactive sites and commercial products and financial responsibility of site operators under section 3004, coverage of retailers and farmers under section 3002 and inclusion of radioactive and infectious characteristics under section 301.

A comparison of the differences between the March 1978 and September 1978 drafts of EPA's regulations under 3001 and 3004 of RCRA also indicates that technical issues were not of major con-

cern. The portions of the regulations that were changed between March and September were not scientific or technical in nature. Indeed, if anything, the new drafts represent a retreat from reliance on recent scientific developments.

Finally, we are likely to hear from EPA that their attempts to maximize public participation resulted in a delay in promulgation. EDF applauds EPA's efforts at public participation. However, the facts do not bear out EPA's claims that public participation caused the delay in promulgation. For example, EPA's chronology of the development of the Section 3001 regulations—Attachment 2 of this testimony [see p. 361]—indicates that public hearings were held during parts of only 2 of the 24 months that have transpired since RCRA passage.

EPA's chronology for Section 3004—Attachment 3 of this testimony—[see p. 363], indicates that public hearings took only 9 days. Even allowing for EPA's analysis of information submitted at these meetings, it is simply implausible to suggest that public meetings were the cause of the delay in implementation.

What, then, are the real causes of EPA's failure to meet Congress' clearly mandated deadlines for RCRA implementation?

The foremost reason is ineffective management. This involves the failure to resolve policy issues quickly, to put an end to interagency squabbling, and to give RCRA implementation the priority it deserved within the agency.

This management fuddle is revealed by EPA's inability to accurately project its own timetable for RCRA implementation. In March 1977, John Quarles, then acting Administrator of EPA, stated publicly, "I think we will get most of the regulations out on time."

Agency personnel continued to make public statements that the regulations would be promulgated on time as late as spring 1978.

On March 2, 1978, the following exchange took place at hearings of the House Appropriations Subcommittee responsible for EPA's budget

Congressman TRAXLER. Are you on target and do you plan to have the regulations issued in all these areas by the statutory deadline?

EPA Deputy Administrator BARBARA BLUM. Yes.

Yet only 6 days later Steffen Plehn, Deputy Assistant Administrator at EPA for Solid Waste told the Transportation and Commerce Subcommittee of the House: "We are approximately 6 months behind schedule in issuing the regulations."

Obviously, now we can see that even Plehn's statement, made only 1 month before the regs were due, underestimated the delay by a year and a half.

Many of the same issues that John Lehman described to Mr. Plehn in November 1977 were still unresolved in July 1978. For example, the November memo discusses the problem of inactive sites. Mr. Lehman's July memo still lists that issue as unresolved. The general question of how to define hazardous waste is listed in the November 1977 memo and is still listed as unresolved in July 1978. EPA, therefore, allowed policy decisions to remain unresolved until as late as July of this year, 3 months after the regulations should have been published in final form in the Federal Register. EPA's decisions at that time significantly changed regulations

under sections 3001, 3002, and 3004 of RCRA and added months on to the promulgation schedule.

While one can only guess at the amount of agency time that was wasted in arguments between various agency departments—arguments for the most part unrelated to protection of the public health—it appears to have been substantial. For example, in the November 1977 memo Mr. Lehman listed almost two pages worth of problems with other EPA offices. For example, there is this description of an argument over policy toward sludge containing hazardous metals with the Office of Water Program Operations (OWPO).

> OWPO—Sludge. Will the hazardous waste definition mean that some/much municipal waste water treatment sludge is labeled hazardous due primarily to heavy metal contamination? If so, OWPO wants the definition changed.

Similarly, the memo describes the following interaction between OSW and the Office of Enforcement (OE):

> "We have a Memo of Understanding delineating who does what at headquarters in the hazardous waste regulatory program under RCRA. However, a number of recent OE actions have bent, if not broken, that understanding. Also, there is confusion in regional offices because OE has been issuing guidance to the enforcement component which we and the regional solid waste components don't agree with. I am trying to get this under control.

Finally, there is this description of problems with the Office of Air Quality Standards (OAQS):

> Only five hazardous air pollutants have been identified under the Clean Air Act. We feel that number is inadequate for hazardous waste facility emission standards and have proposed adding 200 OSHA standards. OAQS doesn't want us to do that. A crunch may come soon.

Unfortunately, it does EDF no good to cry over spilt milk. The issue now before EPA and Congress is how to insure implementation of RCRA at the earliest possible date. As I mentioned earlier, EPA now alleges that the earliest it can propose the hazardous waste regulations will be January 1979 and that final promulgation could not occur before late January 1980. Clearly, this is totally unsatisfactory. EDF's analysis of EPA's proposed schedule indicates that over half a year could be trimmed off without affecting the quality of the regulations.

Before going into EDF's analysis, I will briefly describe EPA's proposal. EPA proposes proposal of regulations in early January 1979. A 90-day comment period would follow, ending in early April. Three months, ending in July, are allotted to evaluating comments and redrafting of regulations. Seven months are allotted for high-level agency review of the redrafted regulations. Final regulations would be published on January 25, 1980.

This proposal is riddled with unnecessary delay and overlapping layers of redundant agency consultations. Unfortunately it is too late to have an appreciable effect on the schedule leading up to proposal in January 1979. I will therefore concentrate on the 13-month period between proposal and final promulgation. I refer you to EDF's analysis of the EPA schedule—Attachment 4 of this testimony [see p. 365]. The EDF analysis calls for final publication of regulations in the Federal Register on June 1, 1979, nearly 8 months before EPA's estimated date.

In its analysis, EDF proposes that EPA limit the public comment period to 60 days. Given the need to expedite the RCRA regulations, and the existence of various public hearings already, EDF considers 60 days to be sufficient time for public comment. Most segments of the public affected by the regulations have already carefully read the draft regulations that have been circulated by EPA. It is not anticipated that the regulations proposed in January 1979 will differ substantially from the draft regulations currently available from the agency. Therefore, most interested parties will have had ample time, before actual proposal of the regulations in the Federal Register, to develop comments on them. Moreover, EDF feels that even given the limited resources of the environmental community, it can effectively respond to the draft regulations in 60 days. EDF therefore feels even more confident that affected industries, with access to much greater resources, can complete their comments within 60 days, especially since many such comments have already been made at the public hearings.

EDF also suggests that the time allotted for analysis of comments and redrafting of regulations be shortened to 2 calendar months. Again, because of EPA's success at distributing drafts of regulations to interested parties and soliciting comments on these drafts, EDF maintains the EPA can anticipate the majority of comments it will receive. Therefore, comments should not raise a large number of new issues requiring commitment of substantial agency resources. EPA has stressed the quality of its public participation efforts during the process of RCRA implementation. It is now time to reap the benefits of that participation by shortening the public comment period and the time allotted for agency evaluation of comments.

As a matter of policy EDF suggests that if public comments do raise an issue that the agency cannot resolve within 2 months, those issues should not be allowed to hold up promulgation of those aspects of the regulations on which there is agreement. Instead, the regulations should be promulgated and more comments solicited on the problem issue or the problem issue simply left aside for resolution at a later date.

The most fat in the EPA proposed schedule is in the area of high-level agency review of the proposed regulations. Almost 7 months are allotted in the EPA schedule for such review. This is wholly unacceptable. EDF's conversations with EPA personnel actively involved in writing the proposed regulations indicated that, in their eyes, at least 50 percent of the review time could be cut without jeopardizing the quality of the regulations. EDF believes that even 3½ months is too long for agency review. We therefore have proposed that only 2½ months be allotted for this purpose. EPA has allotted 9 weeks for review by other sections of the Office of Water and Waste Management, 9 weeks by the steering committee—which consists of DAA representatives from a selection of EPA offices outside of the Office of Water and Waste Management—and 7 weeks for red border review—which consists of AA's from EPA's various offices.

EDF proposes that only 3 weeks be allotted for OWWM review. We feel that this time is sufficient because OSW and OWWM personnel should be in communication during the time allotted to

evaluation and redrafting of the regulations. OWWM personnel should therefore be aware of the issues and details of the regulations. If EPA's proposed schedule for promulgation of section 4004 regulations can be used as a model, the schedule allots only 1 out of the 9 total weeks set aside for OWWM review for actual redrafting of the regulations. The remaining 8 weeks are allocated to review and discussion. It can be expected from past experience that during much of this time the draft documents will sit idly on desks. EDF, therefore, feels confident that OWWM review can be completed in 3 weeks.

EPA allows 4 months for review of the redrafted regulations by EPA offices outside of the OWWM. This is clearly excessive. EDF maintains that only 5 weeks should be set aside for such review. It is unlikely that people in offices outside of OWWM will have the substantive expertise necessary to comment in detail on proposed regulations. Again using EPA's proposed schedule for promulgation of section 4004 regulations, it appears that only 3 weeks of the 16 allotted for actual review is allocated for revision of regulations. The remaining weeks are scheduled for discussions. Given the need to expedite the RCRA drafting process, these discussions must be held over a shorter period.

Unfortunately, the same sort of issues are being allowed to block speedy implementation in the future.

[The attachments referred to follow:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: NOV 18 1977 OFFICE OF SOLID WASTE

SUBJECT: Hazardous Waste Issues

FROM: John P. Lehman, Director
Hazardous Waste Management Division (WH-565)

TO: Mr. Steffan Plehn
Deputy Assistant Administrator
for Solid Waste (WH-562)

Responding to your request, the following hazardous waste-related issues are important for you to focus on early in your tenure as DAA/OSW:

1. Importation Ban. This is the principal issue in 3006 State Hazardous Waste Program Guidelines. Tom Jorling has directed that five alternatives be presented to Doug Costle for decision. States are about evenly divided pro/con, but NGA is now on record with preference that EPA remain silent on the issue. This is an emotional, damned if you do/don't thing, with States Rights overtones, and future impacts on hazardous waste facility availability and on regional office resources, plus the possibility of dual State/Federal programs in the same State, one with and one without a ban.

2. Hazardous Waste Facility Creation. We project a shortfall in suitable hazardous waste facility capacity after the regulations are promulgated. Future facility creation is keyed to (1) the availability of sites (possibly by eminent domain actions); (2) citizen acceptance of hazardous waste facilities on those sites; (3) the availability of capital; and (4) the degree of financial responsibility and liability we will require vs. what prospective owners will accept. The sub-issues of use of Federal or State land for such sites, or government ownership of or shared liability for such facilities (implying some form of financial assistance for construction, operation, and insurance) are also part of this problem. It is a complex, but crucial issue to the successful implementation of the hazardous waste program.

3. "Old" Hazardous Waste and Facilities. RCRA makes no distinction between hazardous waste generated before and after regulation promulgation. Many facilities which have accepted hazardous waste for many years are now closed, or will close because they cannot meet the new standards. Such sites have the potential for significant public health and

environmental impact for many years to come. Can/should we ignore them? We should make our position clear in the forthcoming regulations.

4. Hazardous Waste Definition. RCRA requires us to define hazardous waste both by criteria and lists. The nature of the criteria and lists will essentially define the scope of the waste universe brought under regulation. One strategy would limit the definition to a small sector commensurate with EPA's current resources. Another would encompass a broader definition with de facto phasing via the priorities placed on permitting and enforcement actions. We favor the latter approach. Tom Jorling has a decision memo on this now.

JORLING

5. Interactions with OWHM Offices. Due to the scope of definitions and mandated actions in RCRA, there are many such interactions. Key ones are:

RHETT

a. OWPO - Sludge: Will the hazardous waste definition mean that some/much municipal wastewater treatment sludge is labeled "hazardous" due primarily to heavy metal contamination? If so, OWPO wants the definition changed.

b. OWS - (1) Underground Injection Control: Both RCRA and SDWA contain authority for control of underground injection of hazardous wastes. OWS already has a program in this area and we will probably adopt it by reference. However, RCRA can control transport of hazardous waste to and storage on the injection site, whereas SDWA cannot. Thus, coordination is needed.

(2) Pits, Ponds, and Lagoons: RCRA clearly contains authority to regulate storage and disposal of hazardous waste in pits, ponds and lagoons. SDWA has a provision for a study of the impact of pits, ponds and lagoons on groundwater, but no regulatory authority. OWS has started an assessment of pits, ponds and lagoons and has claimed that the Agency should defer a decision on how to deal with them (i.e., under SDWA or RCRA) until that study is completed. While that stance may make sense for non-hazardous wastes, I see no reason for delay in regulating hazardous waste in pits, ponds and lagoons under RCRA.

c. OWPS - Pretreatment: The more stringent the pretreatment regs are, the more hazardous waste will be generated at industrial sites (and the cleaner will be

municipal wastewater treatment sludges). Consequently, OSW has a great interest in how these regs turn out. Generally, we support more stringent pretreatment regs on the theory that it is easier to deal with separate, distinct, small lots of hazardous sludge at a number of industrial sites than it is to deal with an amalgam of contaminants in large amounts of sewage sludge at municipal treatment plants.

6. Interactions with other EPA Offices.

OTS - Basic conflict between putting out generally applicable hazardous waste management regs under RCRA vs. explicit disposal regs for a particular chemical under TSCA (e.g., PCB disposal regs). Which reg has precedence? We would prefer RCRA to deal with all disposal and leave TSCA to grapple with product control.

OE - We have a Memo of Understanding delineating who does what at headquarters in the hazardous waste regulatory program under RCRA. However, a number of recent OE actions have bent, if not broken, that understanding. Also, there is confusion in regional offices because OE has been issuing guidance to the enforcement component which we and the regional office solid waste components don't agree with. I am trying to get this under control.

OFA - Has gone on record as saying we need an EIS for "major" hazardous waste facility permits. This was not anticipated, nor budgeted for in FY 79 ZBB. Such a requirement may exacerbate the facility creation problem.

OPP - We have supported OPP in development of pesticide disposal regs under Section 19 of FIFRA for several years. These regs have not yet been issued, but may soon be. There may be overlap problems with RCRA regs when they are finalized.

OAQS - Only five hazardous air pollutants have been identified under the Clean Air Act. We feel that number is inadequate for hazardous waste facility emission standards and have proposed adding ~200 OSHA standards. OAQS doesn't want us to do that. A crunch may come soon.

7. Interactions with other Federal Agencies.

DOT - After much prodding by OSW, DOT has finally realized that EPA is planning to issue hazardous waste transport regs which may impact their constituency. They may want to publish our regs under their auspices to avoid confusion and help enforcement. This decision must be made soon, since we are almost ready to propose our regs.

Obviously there are many more issues, but this list is enough for starters. Welcome aboard!

Actual Chronological Schedule for Section 3001 Criteria

Date	Activity/Comments	
6/76	Standard Leaching Test (SLT) Steering committee formed; U. of Wisc. to develop SLT	
12/76	"Strawman" regs	lists & criteria, breadth/scope of regs.
1/77	American Society for Testing and Materials (ASTM) starts subcommittee to develop ASTM-SLT, begins series of mtgs with EPA on SLT	info. exchanged: "use of test debated
1/77	Development plan	phasing vs. all characteristics; lack of data/approach to toxicity; testing of waste issue. . .
1/77	Mitre begins survey of all SLT's in use	Report delivered 9/77
3-4/77	Type II mtgs. (30-40 people representing industry, interest groups, academicians, labor, waste management)	Waste definition, levels or categories hazardous, broad or narrow coverage, small quantities, other exemptions, and characteristics discussed.
6/77	Ignitability, Corrosiveness, Reactivity (I,C,R) characteristics chosen in close to final form	
6/77	Working Group	
6/77	SLT seminar (Chicago)	
7/77	1st internal draft	
8/77	Working Group	discussions on I,C,R
9/77	Working Group	Rejection of hazardous classes; use of lists discussed
9/77	Draft to outside reviewers	

Date	Activity/Comments	
9/77	Radioactivity characteristic selected	nuclides only selected test method chosen 11/77
9/77	lists vs. characteristics resolved	
10/77	U. of Wisconsin begins comparison of 3 SLT's	
10/77	bioassay for toxicity 1st pass	
11/77	Draft U. of Wisconsin SLT	
11/77	Background Documents for all characteristics drafted	
1/78	2nd draft to outside reviewers	resolved list issue 2nd time waste definition resolved
3/78	Meetings with HEW, CPSC	acidity/alkalinity question resolved; skin test for corrosive rejected; corrosive coverage only for liquids
3/78	Meeting with DOT	Reactivity to cite DOT regulations also
3/78	Final Working Group	internal review begins
4/78	U. of Wisconsin completes SLT comparison	
4/78	Toxicant Extraction Procedure (TEP) (formerly SLT) selected	
4/78	3rd draft to outside reviewers	
6/78	Hazardous waste listing 1st draft	
7/78	Hazardous Waste listing background document drafted	
7/78	TEP validation commences	

Actual Chronological Schedule for Section 3004 Regulations

Date	Activity/Comments
10-22-76	President signs P.L. 94-580
11-1-76	Work began on development of Decision Memo, Development Plan, Advanced Notice of Proposed Rulemaking and "Strawman" Background Document and Regulation
12-6-76	"Strawman" regulation completed
2-9-77	First Working Group Meeting to discuss which media to regulate?
3-17-77	Second Working Group Meeting to discuss issues: background documents needed: existing vs. new facilities; air standards.
3-29-77	Development plan completed
4-18-77	"Type 2" Meeting - New Orleans
4-20-77	"Type 2" Meeting - Chicago
4-25-77	"Type 2" Meeting - San Francisco
4-28-77	Third Working Group Meeting to discuss issue: storage, regulations structure, groundwater regulations, odors
5-2-77	Advance Notice of Proposed Rule-making published in Federal Register
6-3-77	Fourth Working Group Meeting to discuss issues: Storage, training, landfill, incineration
6-28-77	Fifth Working Group Meeting to discuss issues: landfill, guidelines vs. regs, incineration
8-2-77	Sixth Working Group Meeting to discuss issues: probable content of draft regulations
8-12-77	First draft of regulations issued to Work Group
9-8-77	Seventh Working Group Meeting to discuss issues: regulations structure, air regulations, monitoring

* Type 2 meetings consisted of 20-50 people who were invited from industry, public interest groups, and state/local governments.

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10-5-78	Eighth Working Group Meeting to discuss issues: landfill liners, landfarms, closure
10/11-12/78	Public Meeting - Arlington, Va.
10/13-14/78	Public Meeting -St. Louis, Missouri
10/18-19/77	Public Meeting - Scottsdale, Arizona
11-9-77	Ninth Working Group Meeting to discuss issues: unuseable aquifers, financial responsibility
1-77	Receiving Comments
2-24-78	Third draft of regulations (commercial products added)
3-15=78	Tenth Working Group Meeting to discuss issues: air regulations, commercial products, treatment facilities, financial responsibility
3-24-78	Fourth draft of regulations
4-21-78	Fifth draft of regulations (expanded preamble)

Preliminary

EDF Proposed Time Schedule for Subtitle C Regulations

§3001, §3002, §3003, §3004, §3005, §3006, EIA, EIS

	Completion Date	(EPA 8/8 suggested completion date)	Working Days	(EPA 8/8 suggested working Days)	Task	Comments
1.	09/12/78	(09/12/78)			Complete draft of §§3001/2/5	EPA proposed schedule of 8/8 indicates this date for §3001. Discussions with EPA staff indicate completion of §§3002 and 3005 by this date
2.	09/26/78	(09/26/78)			Complete draft of §3004	Same as EPA proposed schedule of 8/8.
3.	09/26/78	(10/10/78)			Complete draft of EIA	Allows 47 workdays from 7/19. This is 10 days less than 8/8 schedule. Final revisions can be made in course of EPA review process.
4.	10/17/78	(11/21/78)			Complete Steering Committee (SC) clearance of §§3001/2/4/5 and EIA	Allows 25 working days for §§3001/2/5; 15 working days for §3004 and EIA. SC review is duplicated by Red Border review, therefore review of proposed regs by EPA offices other than OWWM is effectively increased by an additional 15 working days. Problem issues will have already been identified in the course of drafting the regs. SC review is essentially a decision making and not information gathering and analysis task.
5.	11/07/78	(12/12/78)	15	(15)	Complete Red Border review	Same number of working days as EPA 8/8 schedule
6.	11/14/78	(12/22/78)	5	(08)	Administrator Approval	
7.	11/20/78	(01/02/79)	4	(04)	Publication proposed regs §3001/2/4/5 in FR and issue draft EIA and EIS	Same number of working days as EPA 8/8 schedule

	Completion Date	(EPA 8/8 suggested completion date)	Working Days	(EPA 8/8 suggested working Days)	Task	Comments
8.	01/19/79	(04/02/79)	60 Calendar Days	(90)	Close of comment period on §3001/ 2/3/4/5/6	Sixty days is a sufficient comment period for these regulations given the failure to meet statutory deadlines. EDF feels assured that if the environmental community with its limited resources can complete its comments within 60 days, then industry commentators can do the same. From this point on §§3003 and 3006 follow the same schedule as §3001/ 2/4/5.
9.	03/16/79	(07/05/79)	40	(64)	Complete comment evaluation and revision of regulations	In cases where agency preparation is satisfactory, public comments usually raise policy rather than highly technical considerations. The nature of public comments can be anticipated by the agency from comments received during the drafting phase.
10.	03/23/79	(07/13/79)	5	(06)	Complete OSW review, DAA approval	
11.	04/13/79	(09/14/79)	15	(45)	Complete OWWM review; AA approval	It is anticipated that discussion between OSW and OWWM personnel will be ongoing throughout task #9. OWWM review can be expected to concern itself with policy decisions rather than new information gathering or analysis. EPA's 8/8 schedule allows only one week for revision of regs, with the remaining time spent in discussions and decision making. Given the statutory deadline, EPA must make these decisions on an expedited schedule.

Subtitle C Regs Schedule

	Completion Date	(EPA 8/8 suggested completion date)	Working Days	(EPA 8/8 suggested working days)	Task	Comments
12.	04/27/79	(11/16/79)	10	(45)	Complete Steering Committee review	Offices involved in SC review are also involved in Red Border review, therefore, actual review period by EPA offices outside of OWMM is 25 days. SC review is a decision making rather than information gathering task. Briefing of SC members should begin during task #11. EPA staff indicates that a major problem in expediting internal review is difficulty in arranging meeting times convenient to all staff. Given the statutory deadlines for RCRA implementation it should be first priority among SC members.
13.	05/18/79	(01/04/80)	15	(35)	Complete Red Border review	Similiar to task #12
14.	05/25/79	(01/11/80)	5	(05)	Administrator's Approval	Same number of working days as EPA 8/8 schedule
15.	06/01/79	(01/25/80)	5	(10)	FR publication	

Mr. GORE. Thank you, Mr. Dach.
Dr. Davoli.

TESTIMONY OF DANA DAVOLI, Ph. D.

Dr. DAVOLI. Good afternoon. My name is Dana Davoli. I am a staff scientist with Citizens for a Better Environment (CBE), a Chicago-based, not-for-profit corporation devoted to achieving a healthy environment. CBE is extremely concerned with the U.S. Envionmental Protection Agency's (USEPA) implementation of the Resource Conservation and Recovery Act (RCRA) and especially with subtitle C which specifically deals with the regulation of hazardous wastes. On September 15, CBE filed suit against the Administrator of the EPA for his failure to promulgate certain hazardous waste regulations as required under subtitle C of RCRA.

My comments today will focus on draft regulations publicized by EPA in September for two sections of Subtitle C: Section 3001, which pertains to the identification and listing of hazardous waste, and section 3004, which establishes standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities. Of serious concern to us is that during the past 6 months, the 3001 and 3004 regulations drafted by the EPA have been continuously weakened. The September drafts which are a result of this weakening are inadequate to protect human health and the environment.

I would first like to talk about section 3001. Section 3001 is the cornerstone of the hazardous waste regulations, for it is this section that will actually identify and list hazardous wastes. Once a waste is defined as hazardous under section 3001, it is then subject to the remaining regulations promulgated under subtitle C for hazardous wastes. These include regulations that define how a hazardous waste is to be managed by those persons generating the waste, as well as by those persons who transport, treat, store and dispose of the waste. Obviously, it is extremely important that the section 3001 regulations define and list as inclusively as possible all of the wastes that are hazardous so that these wastes can be managed under subtitle C in a manner that will prevent damage to human health and the environment.

In its September draft regulations of section 3001, EPA has selected six characteristics to define hazardous wastes—toxicity, reactivity, corrosiveness, ignitability, infectivity, and radioactivity—my comments will be limited, however, to only one of those characteristics—toxicity.

The objective of the toxic waste characterizations are to identify those wastes which, if released into the environment, could result in human health or environmental hazards. EPA must be concerned, then, with those wastes that have the potential to cause acute toxicity effects, such as death, as well as with those wastes that have the potential to cause chronic toxicity effects, such as cancer, birth defects, genetic damage, and nerve damage. It has been estimated that there are well over 100,000 chemicals commonly in use in the United States. Certainly, not all of these are toxic. Yet we know of hundreds that are, and, as more toxicity testing is done, other hazardous chemicals will be defined. Most, if not all, of

these chemicals, including the hazardous ones, can be expected to be found in the waste generated by industry.

In its September draft, EPA chose to identify a waste as toxic in one of two ways. The first defines a waste as toxic if that waste—if it is a liquid—or an extract of that waste—if it is a solid or semisolid—contains an excess concentration of any substance for which an EPA primary drinking water standard has been established. These drinking water standards set safe limits for only 14 substances: 8 metals and 6 pesticides.

The second method identifies a waste as toxic if it appears on a list of hazardous wastes or if it is produced by a source generating hazardous wastes. These lists of hazardous wastes and hazardous waste generators were chosen by EPA according to several complex criteria. A close examination of these lists reveals that they are quite incomplete in that they deal primarily with those 14 substances for which drinking water standards have been developed and for a very limited number of toxic organic chemicals.

The important point to be stressed is that, as written, the section 3001 regulation will result in defining only a small fraction of the known toxic substances as being hazardous wastes. Thus a large number of hazardous wastes will be excluded from control under subtitle C, including toxins like those responsible for the problems at Love Canal and in Toone, Tenn. Incidents like these will not be prevented from occurring in the future.

Section 3004 of RCRA requires the EPA to promulgate regulations that establish performance standards for owners and operators of hazardous waste treatment, storage, and disposal facilities. In general, we are satisfied with the standards that EPA has proposed in its September draft for most of these facilities. However, those standards developed for land farms and for facilities which make commercial products from hazardous waste are entirely inadequate to protect human health.

Land farming entails the application of hazardous wastes onto land followed by incorporation of these wastes into soil. The rationale for this procedure is that some hazardous wastes are degraded by microorganisms within the soil; thus these wastes are detoxified through land farming.

While in theory this is an excellent way of treating hazardous wastes, in reality it is untenable for a large proportion of the hazardous wastes generated. Many hazardous wastes, such as metals and persistent organics, are not degraded by bacteria. The application of these persistent wastes to land can result in the long-term contamination of soil, in many cases valuable agricultural soil, with persistent toxins such as cadmium, lead, mercury, and PCB's. Such contaminated soil must be cleaned or physically removed upon closure of the land farm. Thus EPA's regulation will in many cases result in contamination of valuable soil which must then be disposed of as a hazardous waste.

Food chain crops are permitted to be grown on land farms provided that it can be demonstrated that such a procedure will not result in the human consumption of a list of specific substances. However, this list of specific substances is so limited that these draft regulations will not prevent the human consumption of the thousands of other toxins present in hazardous waste, including

PCB's, pesticides, and toxic metals. As an example, increases in the consumption of cadmium are permitted by these draft regulations. Cadmium is a metal classified by the EPA as an oncogen, produces tumors; a mutagen, produces damage to genetic material; and as a teratogen produces birth defects. Exposure to cadmium can also result in kidney damage; in fact the FDA has found that the average cadmium levels in the American diet are close to the tolerable weekly intake developed by the World Health Organization to prenent kidney damage; some Americans, especially vegeterians and smokers, may already be exceeding these levels.

The Commercial Products Section of 3004 permits the marketing of hazardous wastes as soil conditioners. With the exception of weak regulations concerning arsenic, cadmium and lead, a hazardous waste can be distributed to the public with essentially no restrictions.

Such a regulation is hardly protective of the consumer. First, hazardous wastes can contain thousands of other toxins, in addition to arsenic, cadmium and lead that are known to cause cancer, birth defects, and genetic damage. Yet EPA is proposing that such wastes be permitted to be handled by the homeowner, the farmer and the caretaker working with soil-conditioning products derived from hazardous waste. Children are a group that are especially at risk: because of their mouthing behavior, the potential exists for their consumption of any number of hazardous wastes found in such soil conditioners used around homes. Additionally, as with land farming, the use of hazardous waste soil conditioners in home gardens or truck farms can potentially result in an increase in the levels of toxins in the human diet.

It appears that the primary reason for such incredibly weak regulations for land farming and for soil conditioners under section 3004 of RCRA is EPA's reluctance to issue stringent regulations for sludge from publicly owned treatment works (POTW's).

EPA has tentatively agreed to exempt the disposal of POTW sludge from regulation under subtitle C of RCRA. This includes even the estimated 67 percent of POTW sludges that would be classified as hazardous wastes if these sludges were tested against the proposed criteria of section 3001. However, the disposal regulations for hazardous POTW sludges, which will now be promulgated pursuant to sections 405 of the Clean Water Act and section 4004 of RCRA, must be equivalent to those written under the hazardous waste regulations of subtitle C of RCRA.

Now, as in the past, EPA's policy for disposal of POTW sludges has been to encourage its use on agricultural land and to permit the sale and giveaway of such sludges to the public as fertilizers and soil conditions. For this policy to be consistent with subtitle C of RCRA, it was necessary for EPA to include, in its section 3004 draft, the weak regulations proposed for land farms and soil conditioners.

The net result of these weak section 3004 regulations, which were written to be consistent with EPA's POTW sludge policy, will be to encourage the use not only of POTW sludge but also of industrial wastes on land farms and as soil conditioners; this is especially true since such means of disposal will be less costly than landfilling or incineration. Because the United States generates

much larger volumes of hazardous waste than of POTW sludge, this policy decision increases the potential for creating a tremendous health problem.

Thank you.

Mr. GORE. Thank you very much, Doctor.

Mr. George Wolff of the Illinois Attorney General's Office.

TESTIMONY OF GEORGE WOLFF

Mr. WOLFF. Thank you, Mr. Chairman. I appear here today on behalf of Illinois Attorney General William Scott, who sends his apologies to the subcommittee for not being able to be here today. He also has asked me to extend his commendation to you for your interest in this subject, which is a subject that he and the State of Illinois have been concerned with for some time. Before I begin, I have a few brief observations to make today. We do not have a written statement. We have been attempting to coordinate the views of some of the States both on the general problem itself of hazardous waste management and EPA's delay in issuing the regulations, and we would like leave from the subcommittee to submit that within the next 10 days.

Mr. GORE. Without objection, the record will be held open at the appropriate point for inclusion of that material. [See p. 375.]

Mr. WOLFF. We have been concerned with the problem in Illinois because waste is probably concentrated more in our State than in any other State, with the possible exception of Ohio and a few other States. I became even more concerned when I learned region 5 is probably the worst region among all of them in EPA, and we are located in region 5.

We have been involved in a good deal of litigation over landfills in the State of Illinois, which I won't go into, with one exception, today. Our principal hazardous disposal site is located in Wilsonville, in the southern part of the State. We became concerned with that site when we found increasing amounts of materials being dumped there for some reason and when we also learned that it had been located over an abandoned coal mine.

We filed some litigation to stop that, hopefully to prevent a problem such as Love Canal from arising in that particular community. We were successful in getting that landfill closed down. The case is on appeal at the present time. The judge in that case found the landfill so unsafe as to order all the hazardous materials in there removed from it. That creates some problems as to how the removal is going to take place and where it is going to go. It is an enormous landfill. I think if a lot of other landfills in the country were looked at, they would find similar problems in operating and management practices similar to the defective ones we found at Wilsonville. If so, Wilsonville, as far as we are concerned, on a national level, is probably only the tip of a much bigger iceberg.

We have other sites in Illinois. I won't go into those, but we do not really have enough information to know the extent of the possible problems there. Illinois, for various reasons, has no specific regulations applicable to hazardous disposal. Hazardous waste facilities in Illinois are treated on a case-by-case basis and any regulation that takes place takes place through the permit system; that

is, conditions are included in individual permits which will hopefully be adequate to prevent any problems from arising.

There is a great deal of difficulty on the part of the States. Illinois is not the only one that has this difficulty from our conversations with other States thus far. There is a great deal of expertise that is needed simply to define what is a hazardous waste, much less to provide regulations on how to dispose of it safely and how to locate an appropriate site. The States themselves do not have the resources either in personnel or dollars to go ahead and to reinvent the wheel in each individual State. They simply cannot do that. RCRA was put together for that purpose, I believe.

There is an additional problem in simply finding the personnel with the necessary expertise. There are not that many people available with the necessary expertise to hire, assuming we had the money and assuming it was wise, to have 50 different State programs.

Another problem the States have in dealing with the hazardous waste situation is to find out some very basic information. What is being generated? Where is it being generated? Where is it going? How is it moving through the State? Is it coming in from another State? Is it going out of the State? Is it being disposed of in the State someplace? What kind of site is it being disposed in?

Because of this elementary difficulty in finding out the magnitude and the dimensions of the waste disposal problem itself, some sort of a manifest system such as is set out in the provisions of RCRA is necessary, and it is necessary on a Federal level and not just on a State level. No one State can implement a manifest system that requires cradle to grave accounting for hazardous wastes that are generated someplace else. The State of Illinois receives wastes from other States and sends wastes to other States and generates waste within the State. We can adopt a manifest system but it will be meaningless unless other States are required to have a similar system that meshes with it. We cannot have inconsistent definitions of what is a hazardous waste. We cannot have inconsistent standards and reporting requirements. They all have to mesh one with the other, just as a practical matter. There must be a uniform national system, and RCRA envisions such a system. We do not even have the basic information on the size of our problem.

In addition to the practical problems of adopting a State manifest system there is possibly also a legal problem. Many of these good are moving in interstate commerce either through the State or out of the State or into the State. There is no constitutional problem with regulating a landfill itself, but there is possibly a constitutional problem in imposing a manifest system on goods that are moving in interstate commerce. Although the State of Illinois is not willing to concede that constitutional point, certainly it creates the potential for additional litigation somewhere along the line.

Many States are looking to the Federal Government for the solution to their problem. Many States are depending on the Federal Government to tell them what the State standards should be. In those States we have talked to that have adopted some system, many of them have done it in anticipation of the Federal regula-

tions, that is, many States have statutory provisions which say that the Federal regulations are adopted as the State regulations or the State may adopt the Federal regulations, or regulations no more stringent than the Federal regulations.

In Kentucky, a statute of the latter type was adopted and, since there are no Federal regulations, and inasmuch as there may be no State regulations that are stricter than the Federal regulations, the industry is arguing, therefore, that Kentucky can have no State regulations under that statute.

The schedule that EPA has proposed for coming out with these regulations to be used by the States presents also some problems. The majority of the States, insofar as we have been able to determine, do not have the necessary implementing legislation in place at the present time. They are waiting for Federal regulations. In Illinois last year I was involved with some bills regarding hazardous wastes and the industry's answer to the legislature is:

> Let's wait and see what the Federal Government does. You don't want to adopt a statute or a set of regulations and then have us spend all this money trying to comply with them and then you are going to have to repeal it.

In Illinois the legislature bought that argument for the time being, so we do not have any specific hazardous waste statutes or regulations at the present time. Other States are in a similar situation.

The Federal regulations are proposed at the present time to be promulgated by EPA in January of 1980. I think the subcommittee should recognize that that schedule is going to make it difficult for a number of States to come up with State regulations for perhaps another year or two due to the internal rules of many State legislatures. A number of the State legislatures meet only on a biennial basis. If the regulations were adopted 6 or 9 months earlier, I think many of these problems could be eliminated to a great extent.

I would like to address just briefly the economic reasons that are sometimes given for not having regulations in force right now. I would like to indicate our disagreement with them. One of the problems is alleged to be that the regulations are probably going to create some kind of inflation in that they will require additional expenditures on the part of industry, but I do not know if that is a valid argument in light of the Wilsonville case particularly. In that case, the industry is faced with a much bigger expense of having to dig up and dispose of thousands of tons of waste that were improperly disposed of in an improper site. That, to me, in the long run is much more inflationary than any minor additional costs that might be added by regulations. This, of course, does not even take into account the possible health problems that might be generated in the meantime while we are waiting for EPA to come up with some regulations so that the States can have their own programs.

In the Wilsonville case another phenomenon came up which should be of some concern to the subcommittee, I think. During the course of the litigation it became apparent that this site was not adequate. I think it became apparent to the industry. We were denied a temporary restraining order, and industry, during the 9 months or a year it took to litigate this case, began to increase the amount of material it was disposing of in that site dramatically. In Illinois an individual permit is required for each hazardous waste,

and during the course of this litigation industry and the site owner had applied for over 400 additional supplemental permits.

Mr. GORE. Mr. Wolff, there is anecdotal information that has been given to this subcommittee that the same phenomenon is happening all over the country in an effort to increase volumes before the regulations are forthcoming. Have you heard of similar evidence or anecdotal evidence?

Mr. WOLFF. The only hard evidence is this particular case, but I think that it is not an unreasonable thing to expect on the part of industry. Industry would like to see these regulations delayed a little bit and dispose of any materials they may have stockpiled or may generate in the meantime. I think that is a very, very dangerous phenomenon. EPA, above all people, should be concerned about it.

There is also the problem in North Carolina, where somebody just went down and dumped powerful chemicals along the roadside, the midnight dumpers. In Illinois we found some evidence that some materials are being dumped into various sewage treatment facilities through sewers. So the longer there is a lack of a manifest system, the longer there is no adequate regulatory structure, the easier it is going to be for these kinds of problems and this abuse by industry to take place.

We are also partners with the Environmental Defense Fund and Citizens for a Better Environment in the lawsuit in the district court here against EPA for their failure to promulgate the RCRA regulations. I think our concern with that failure derived specifically from the Wilsonville case. In that case, after the judge had ordered the site closed down and the materials removed, EPA issued a notice in the Federal Register that it proposed to use that site as a disposal site pursuant to the provisions of the Toxic Substances Control Act as a site for the disposal of PCBs. At the time of the judge's decision another thing concerned us, and that was a statement by the Deputy Administrator for region 5 of EPA to the press that that site, Wilsonville, was a good site and that it complied with all Federal regulations. That gentleman's name is Mr. Val Adamkus. What Mr. Adamkus did not bother to tell the press was that EPA did not have any regulations at all in that site, or on any site anywhere in the country, for the disposal of these materials.

So I think we have a case there of outright fraud on the part of the Environmental Protection Agency. I do not know if region 5 is the worst region in the country in terms of solid waste management. But I would offer that example as one piece of evidence for anyone who wanted to reach that conclusion.

We hope these hearings will be of some assistance to the Environmental Protection Agency in realizing the nature of the problem and hopefully in inducing them to give the citizens of Illinois and of the other States in this country the protection that Congress wanted to give them when it adopted the statute.

Thank you.

[Testimony resumes on p. 405.]

[The following material was received for the record:]

TESTIMONY OF ILLINOIS ATTORNEY GENERAL
WILLIAM J. SCOTT BEFORE THE SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS OF THE COMMITTEE
ON INTERSTATE AND FOREIGN COMMERCE
30 October, 1978

We would like to address the effects that the Environmental Protection Agency's delay in promulgating regulations under the Resource Conservation and Recovery Act ("RCRA") has had and will have on Illinois and other States. In this regard, while I do not purport to speak on behalf of other States, I think that the points I have are of general applicability. Within the past few weeks our office has been in communication with a number of other States and with the Council on State Governments regarding the impact this delay in the promulgation of regulations under RCRA is having upon States.

State Legislation

State statutes are presently uniformly inadequate in the control they exercise over hazardous chemical wastes. To my knowledge only Minnesota,* New Jersey and California** have comprehensive regulations concerning hazardous chemicals. In order to assume full authorization to administer RCRA, most States will need to enact new legislation, and many States are eager to do so. Most States are waiting before taking any action because we do not know what the federal program with which we will have to comply will look like. This approach, while unfortunate, is probably preferable to passing State legislation in anticipation of EPA's regulations. I know of at least one State that did that, Kentucky: the legislature there precluded the State administrative agencies from adopting hazardous waste regulations more strict than those provided under RCRA (Ky. Rev. Stat. 224.252). Because RCRA preempts more lenient regulations, Kentucky is in essence required to

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*Regulations have been promulgated in Minnesota but have not yet taken effect.

**California Code, Health and Safety, Section 25100 et seq.; N.J. A.C. 7.26 - 1.4.

adopt standards identical to EPA's. Until EPA actually does something, Kentucky is thwarted from taking effective steps to address the hazardous waste problem.*

In Wisconsin the state's Department of Natural Resources has been charged by their State legislature with developing regulations identical to federal regulations. The Wisconsin Legislature provided that these regulations must be promulgated no later than the summer of 1979.** The federal delay has forced the Wisconsin Department of Natural Resources to go back to the legislature to request an extension in promulgating their own regulations.***

The problems of those State legislatures which have decided to wait and see what EPA will do are somewhat different but no less serious. EPA has proposed delaying promulgation of some regulations until January of 1980. It should be recognized that for many States this will mean that it will be 1981, 1982, or even later before the necessary legislation can be enacted due to idiosyncracies of the State legislative processes.

Most States limit the time during which new bills may be introduced at legislative sessions. These range from a couple of months into the session, as in Illinois, to as short as the tenth legislative day in Nebraska and the 15th calendar day in Louisiana. Most legislatures convene in early January -- a few States begin even earlier. Thus EPA's target date of January 31, 1980 could hardly be worse: it will effectively preclude about 20 states from even considering necessary enabling legislation during the 1980 session.

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*See, letter of December 30, 1978 from Kentucky Department for Natural Resources and Environmental Protection to the Illinois Attorney General, see attached as Exhibit "A".

**W.G.S. Section 144.62

***See, letter of November 28, 1978 from the Wisconsin Department of Natural Resources to the House Committee on Interstate and Foreign Commerce, a copy of which is attached as Exhibit "B".

To compound matters a few States will hold sessions only every other year and a few other States -- such as Illinois, Utah and Maine -- restrict the subject matter of bills that may be introduced during the 1980 session to budgetary matters and emergencies. It is not clear at this time whether Illinois will need to enact futher legislation in response to EPA's regulations. If we do, however, it may be 1981 before the legislation can even be considered. In addition, there will be inevitable delays in implementing any new State statutes, even assuming some are enacted.

To summarize: most States will need to take legislative action in response to EPA's regulations, whenever they are tultimately promulgated. The inherent delays in the State legislative process virtually guarantee an additional one, two, or three years delay beyond final promulgation before States can begin to assume authorization to administer RCA.

State Administrative Programs

Many aspects of the dilemma confronting State legislatures as a result of EPA's delay also confront the State administrative agencies: for the next year or two, is it better to do nothing and wait for EPA, to do something, or to go ahead now with a State program which may have to be scrapped?

If we do nothing, of course, we preserve the very status quo which RCRA was designed to change. We will still have no effective public control over the very problems which RCRA is supposed to correct. As a fundamental matter of protecting the public health and welfare this is unacceptable.

A second consideration is that the longer we wait to begin, the more costly the ultimate solution will be. Random dumping of hazardous chemicals has become a commonplace occurance: such as the

episode in Louisville, Kentucky last year in which the entire city sewage plant was knocked out by chemical wastes illegally poured down a sewer. When someone is caught illegally disposing of hazardous chemicals we come down hard on them. Unfortunately, we almost have to catch them in the very act, because Illinois, like most States, has inadequate authority to monitor the handling of hazardous materials. Nothing short of the national manifest system provided under RCRA will adequately address the problem, and that will not come into being until EPA acts. In the meantime, unknown people are dumping unknown chemicals into unknown places. When we discover these sites, either by chance or through some tragedy, it is invariably the government -- i.e. the public -- that must pay for the clean up. And the longer EPA waits, the worse and more costly the problem will become.

The problems of enforcement for a state without a manifest system are obvious. State laws in Ohio, for example, does not authorize environmental officials to open barrels on private property they suspect are filled with hazardous chemicals. The State is therefore forced to either rely on the assurances of the property owners that no hazardous chemicals are being illegally dumped or actually physically catch someone in the act of illegally dumping hazardous chemicals.

Ohio is presently involved in two enforcement actions against companies it believes are illegally dumping hazardous chemicals into Ohio rivers and sewers. It faces the almost impossible task of trying to prove that these companies were the ones which engaged in this unlawful activity.* Nothing short of the manifest system under RCRA will aid States enforcing hazardous substances laws.

Indiana has been plagued by a rash of accidents related to the storage of hazardous chemicals. Yet State environmental officials are prevented from preventing sloppy storage practices due to the lack of authority in that area and are thus forced to wait until an accident

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*See, letter of November 16, 1978 from the Ohio Attorney General to the Illinois Attorney General describing the enforcement difficulties that state faces, a copy of which is attached as Exhibit "C".

happens to do something.

In addition, nothing short of a uniform federal system or regulation will insure effective enforcement because many chemical operators operate in more than one state. One state in the Midwest, which I will not identify, has mounting evidence that one hazardous chemical operator, which it is preparing to sue has been quietly transferring its operations and its hazardous chemicals to its operations into other states. Without a national manifest system an uniform, comprehensive regulations such a compy can avoid enforcement almost in perpetuity by moving from State to State.

On the other hand, economic factors can loom large in the context of interim programs at the State level. To take but one example, Illinois could easily place itself at a serious economic disadvantage relative to its neighbors if we were to move forward too aggressively in this area. As I have already noted, Kentucky right now is essentially a State without controls over hazardous wastes, through no fault of its own. Were Illinois to implement a vigorous program of hazardous waste regulation, costs to the industry would inevitably rise somewhat. Without a similar rise in costs in our neighboring States, we would run a serious risk of driving jobs and businesses out of the State. One of the best arguments for national uniformity of environmental controls is the prevention of exactly this sort of Balkanization of our economy.

There is another economic consequence to be weighed before interim State programs are adopted, and it too is a direct result of EPA's tardy development of national regulations. Implementation of any State program, no matter how modest, entails some startup costs to the state treasury. Most states are willing to assume these costs: indeed, the public is demanding it. But one most seriously question the wisdom of assuming those costs when at least some of what we do will have to be scrapped within five years. At great effort we can

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guess what EPA's program will require, but we can never know all of its details. There is more than one reasonable approach in this area. But if a State wants to assume authorization under RCRA, it must adopt EPA's approach. To do so may well involve abandoning a State program, adopted after the expenditure of substantial effort and resources.

Finally, there is the effect on the industry itself. I am not a spokesman for industry, but I do think we should acknowledge a valid argument when it is raised. Compliance with a government regulation, whether State or federal and whether interim or long term, costs money. Compliance with requirements that change after two or three years costs more money. If a State adopts an interim program until EPA acts, and then drastically changes its requirements one regulations are promulgated, can we really justify the additional costs?

To summarize: EPA, by its delay, has placed the State administrative agencies charged with protection of public health and safety and with preventing environmental damage in an untenable position. We must either do nothing, or we must adopt our own programs with the full knowledge that they will only be viable for a couple of years. Neither alternative is satisfactory, and it should not be necessary to have to make the choice. If EPA would get on with its job and promulgate regulations under RCRA in a timely and responsible manner, we could all focus our energies on the substantive tasks on hand.

Exhibit "A"

EUGENE F. MOONEY
SECRETARY

JULIAN M. CARROLL
GOVERNOR

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE 502 564-3350

RECEIVED
NOV 2 1978
WILLIAM J. SCOTT
ATTORNEY GENERAL

October 30, 1978

Hon. Dean Hansell
Assistant Attorney General
Environmental Control Division
188 West Randolph Street
Suite 2315
Chicago, Illinois 60601

Dear Mr. Hansell:

This letter is in response to your request of October 25, 1978, to generally identify the problems that the Commonwealth of Kentucky is facing or will face due to the lack of promulgated Federal Regulations in the area of hazardous waste.

As we discussed on the telephone, the 1978 General Assembly amended KRS Chapter 224 as regards hazardous waste. Although the Department for Natural Resources and Environmental Protection is now mandated to promulgate regulations for purposes of identification, record keeping, and establishing a permit system in the areas of generation, storage, treatment, recycling or disposal of hazardous waste; the Legislature also restricted such regulation promulgation. KRS 224.252 states that any regulation promulgated relating to hazardous and solid waste shall be no more stringent than the Federal requirements.

There are obvious problems that accompany such a restriction combined with such a mandate in the absence of the anticipated Federal regulations. Specifically, upon promulgation of hazardous waste regulations pursuant to the statute and attempted enforcement of those regulations, we will initially face the argument that we are outside the scope of our authority to enforce such regulations in the absence of Federal standards. Once the Federal regulations are promulgated, we will face a two to three month gap during which our amendment process to match those regulations will proceed. This time period will be most problematic should we attempt to enforce any of our regulations that arguably appear at

that point to be stricter than the Federal standards. During the amendment process time frame, the argument that we are outside the scope of our authority as to those regulations will probably be even more effective.

Perhaps the major problem we have had to face in the absence of Federal regulations in this area is our attempt to draft state regulations from the standpoint of anticipating what the Federal regulations might be. We have studied other state programs and what proposed guidelines, standards, etc. have been published in the Federal Register to date. We have subsequently gone through numberous drafts of a state regulatory program. Presently, we are attempting to meet a November 15 deadline for submission of a draft to our Legislative Research Commission. Obviously, had the Federal regulations been available on schedule, we could have proposed our "mirror image" state regulations immediately, and would not be facing the gap of ascertainable standards that presently exists.

The gap of specific ascertainable standards as to hazardous waste has resulted mainly in a lack of the needed stricter regulation in this area to date, rather than specific problems in litigation. This office is presently involved in five civil actions in which the existence of ascertainable standards in the area of hazardous waste would have been most helpful. The major problem these cases expose is the lack of any regulations as to "storage" of hazardous waste. The attempt to bring an action under our general prohibition against dumping hazardous waste, is very difficult in a "storage" case, and in all cases makes any enforcement attempts subject to a ligitimate "lack of ascertainable standards" argument.

Much of this is water under the bridge at this point (i.e. things that would not have been problematic had the Federal regulations been available previously). However, the sooner the Federal regulations involving regulation of hazardous materials are available, the fewer problems the Commonwealth of Kentucky will face in the coming months in our attempt to regulate this area.

Sincerely,

Hugh N. Archer

Hugh N. Archer
Attorney
Office of General Counsel

HNA/fb

Exhibit "B"

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Anthony S. Earl
Secretary

BOX 7921
MADISON, WISCONSIN 53707

November 28, 1978

IN REPLY REFER TO: 4400

Mr. W. E. Williamson, Clerk
House of Representatives
Committee on Interstate and Foreign Commerce
Rayburn House Office Bldg., Suite 2125
Washington, D.C. 20515

RECEIVED
DEC 11 1978
WILLIAM J. SCOTT
ATTORNEY GENERAL

Gentlemen:

It is my understanding that the Committee is holding oversight hearings on the implementation of the Resource Conservation and Recovery Act. The purpose of this letter is to point out to you that the State of Wisconsin is experiencing difficulty in several areas in operating its state program as a result of delays by EPA in promulgating final regulations.

Two areas are of specific importance and concern. The first deals with the open dump inventory required under Section 4005(b). The law requires this inventory to be completed within one year after promulgation of regulations under Section 4004. These regulations were to be promulgated in October, 1977. The latest EPA proposal indicates that the regulations will not be published until July, 1979. While most everyone agrees that it is impossible to conduct the inventory in one year and that five years is a more appropriate term, the fact that the regulations will be delayed by approximately twenty-one months means that the states are unable to effectively begin the necessary task of identifying environmentally inadequate land disposal facilities.

The second area concerns the area of hazardous waste management. The Wisconsin Legislature recently enacted a statute modeled after subtitle C which requires the state to establish and implement a program of hazardous waste management by July, 1979. The statute requires that hazardous waste be identical to the EPA promulgated definition. Since the EPA definition is now expected in January, 1980, (rather than April, 1978, as required by RCRA), it is impossible for the state agency to comply with state law.

While we recognize the tremendous workload imposed on EPA by RCRA, we urge that every effort be made to promulgate required regulations at the earliest possible date.

Sincerely,

Anthony S. Earl
Secretary

cc: Linda Bochert - Dept. of Justice

Exhibit "C"

State of Ohio
Office of the Attorney General

William J. Brown
Attorney General

Michael R. Szolosi
First Assistant Attorney General
Richard S. Walinski
Chief Counsel
G. Duane Welsh
Executive Assistant Attorney General
P. Michael DeAngelo
Deputy Attorney General

November 16, 1978

RECEIVED
NOV 20 1978
WILLIAM J. SCOTT
ATTORNEY GENERAL

Mr. Dean Hansell
State of Illinois
Assistant Attorney General
188 West Randolph
Suite 2315
Chicago, Illinois 60601

Re: WRECRA Regulations

Dear Dean:

The State of Ohio is presently experiencing several problems due to the delay in promulgation of regulations which would effectively deal with toxic and hazardous wastes. Ohio supports a number of industrial concerns who deal directly with the transportation, storage, and disposal of toxic substances. In view of the lack of a broad-based regulatory scheme, at the federal level, the State has been forced to deal with the problem on a piece-meal approach.

For example, the Attorney General has initiated lawsuits in the state courts against Chem-Dyne Corporation, who transports highly toxic chemical wastes across state lines. In addition, Chem-Dyne is also responsible for several incidents of illegal disposal within the State boundaries. Unfortunately, the State must rely solely on its water pollution laws to control this type of situation.

Recently, Attorney General Brown and the Director of Ohio EPA filed suit against a landowner who deposited large quantities of highly toxic chemicals in a sand and gravel pit; chemicals previously identified in Love Canal in Niagara Falls, New York. The State found no water contamination, despite the current movement of the toxins through the soil and without the broad regulatory scheme anticipated through WRECRA, successful prosecution of this problem is slim.

The State of Ohio is anxious to see a regulatory scheme that will successfully aid the State in the prosecution of improper transportation, storage and disposal of toxic wastes.

Very truly yours,

Colleen K. Nissl /ss

COLLEEN K. NISSL
Assistant Attorney General

Exhibit "D"

STATE OF NEW YORK
DEPARTMENT OF LAW
TWO WORLD TRADE CENTER
NEW YORK, N.Y. 10047
TELEPHONE: (212) 488-3475

RECEIVED
NOV 27 1978
WILLIAM J. SCOTT
ATTORNEY GENERAL

November 21, 1978

Mr. Dean Hansell
Assistant Attorney General
Suite 2315
188 West Randolph
Chicago, Illinois 60601

Re: RCRA Regulations Delay

Dear Dean:

We in New York State strongly support Illinois' action against the USEPA seeking prompt promulgation of various regulations under the Federal Resource Conservation and Recovery Act of 1976. EPA's failure to act according to the schedule specified in the legislation is having a severe impact on effectuation of a sound toxic waste management program in New York.

During the 1978 legislative session our State Legislature passed Senate bill S-9557-A; a copy of which is enclosed, which amends sections of our public authorities and environmental conservation laws regarding industrial hazardous waste management. When implemented, this bill would provide standards for hazardous waste transport, disposal, inspections, treatment, and long term maintenance. Siting criteria for disposal facilities and criminal sanctions for violations of these regulations are included as well. Implementation of these regulations will go a long way toward providing protection to New York State citizens from mismanagement of hazardous waste.

Although this New York State legislation represents a significant step forward in the management of hazardous waste, promulgation of the regulations pursuant to it are specifically tied to promulgation of regulations under RCRA.

For instance, identification and listing of hazardous waste materials under the State Law is scheduled to take place six months after promulgation of regulations under RCRA, section 3001. Also the waste manifest system to be carried out under State regulations must conform to the system to be provided for under RCRA. Other permits and standards under this bill must conform to RCRA regulations as well.

Without these USEPA regulations, our State Department of Environmental Conservation cannot move forward to promulgate and then enforce these important regulations. Without enforcement the patterns we have detected in New York of midnight dumping, spills, and mismanagement will continue. As the prices for proper disposal go up, ($1.70/gallon for PCB waste), these patterns will only get worse.

The problems at Love Canal near Buffalo, New York have finally spotlighted the dangers of waste mismanagement in the United States and New York specifically. Although we want to prevent similar disasters from occurring again, the lack of regulations under RCRA frustrates our efforts. We hope that your lawsuit will bring prompt relief from this difficult situation. Thank you for making the effort in this regard.

Very truly yours,

LOUIS J. LEFKOWITZ
Attorney General
By

PETER N. SKINNER, P.E.
Environmental Engineer

PNS:dg

Encl.

STATE OF NEW YORK

S. 9557—A A. 12770—A

Cal. No. 1230

SENATE–ASSEMBLY

April 25, 1978

IN SENATE—Introduced by Sens. B. C. SMITH, FARBER, GALIBER, GALLAGHER, HALPERIN, OHRENSTEIN, PATERSON, PISANI, SOLOMON—read twice and ordered printed, and when printed to be committed to the Committee on Conservation and Recreation—reported favorably from said committee, ordered to first and second report, ordered to a third reading, amended and ordered reprinted, retaining its place in the order of third reading

IN ASSEMBLY—Introduced by COMMITTEE ON RULES—(at request of M. of A. Steingut, Koppell, McGee, Amatucci, Bianchi, Connor, D'Andrea, DeSalvio, Finneran, Gorski, Graber, Grannis, Harenberg, Hinchey, Hochbrueckner, Hoyt, Kidder, Lane, Lipschutz, Marchiselli, McCabe, Orazio, Proud, Robach, A. W. Ryan, E. F. X. Ryan, E. C. Sullivan, D. B. Walsh, Warren, Wilson, Yevoli, Zagame, Zimmer)—read once and referred to the Committee on Environmental Conservation—reported and referred to the Committee on Ways and Means—committee discharged, bill amended, ordered reprinted as amended and recommitted to said committee

AN ACT to amend the public authorities law and the environmental conservation law, in relation to industrial hazardous waste management and repealing sections 71-1503 and 71-1505 of the environmental conservation law, relating thereto

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Short title. This act shall be known as the "Industrial Hazardous Waste Management Act of nineteen hundred seventy-eight".

§ 2. Legislative finding and purpose. The legislature finds that the economic and population growth of the state and the improvements in the standard of living enjoyed by our citizens have required increased industrial expansion and production to meet our needs and have generated and made necessary the use of dangerous chemical substances which together with related commercial operations have resulted in the production of hazardous wastes which may be highly flammable, explosive, highly reactive, toxic or infectious. Mismanagement of these wastes has resulted in public health problems and cases of the contamination of the air, land and waters of the state. The continuing concentration of our population in expanding metropolitan and other urban areas has presented these communities with serious financial, management,

EXPLANATION — Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

intergovernmental and technical problems in the storage and disposal of hazardous wastes resulting from industrial, commercial, and public activities carried on in such areas.

The legislature further finds that although much progress has been made with respect to treatment and disposal of hazardous waste, existing hazardous waste disposal sites do not provide adequate processing or disposal capacity to handle the increasing volume of hazardous waste presently being generated.

Therefore, it is the purpose of this act to provide an effective regulatory authority to control the transfer, storage and disposal of hazardous substances in order to protect the health, safety and welfare of the people of this state against the harm from hazardous wastes and to provide safe and effective means for the disposal of hazardous waste in perpetuity.

§ 3. Subdivision fifteen of section one thousand two hundred eighty-one of the public authorities law, as amended by chapter seven hundred forty-four of the laws of nineteen hundred seventy, is hereby amended to read as follows:

15. "Project" shall mean any sewage treatment works, sewage collecting systems, solid waste disposal facilities, air pollution control facility, water management facility, *industrial hazardous waste treatment, storage, exchange and disposal facility,* and storm water collecting system or any other works or facilities which the corporation is authorized to plan, finance, construct, operate or maintain under the provisions of this title including all buildings, systems, facilities, appurtenances, machinery and equipment which the corporation deems necessary for the operation of the project, including the site therefor, together with all property, rights, easements and interests, either on or off such site, which may be required for the operation of the project.

§ 4. Section one thousand two hundred eighty-one of such law is hereby amended by adding two new subdivisions twenty-two and twenty-three to read as follows:

22. "Industrial hazardous waste" shall mean an industrial waste or combination of wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

(a) cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness; and/or

(b) pose a substantial present or potential hazard to human health or the environment and, therefore, must be segregated and excluded from the general municipal waste system and sewage collection and treatment process.

23. "Industrial hazardous waste treatment, storage and disposal facility" shall mean a specialized facility or site other than a sewage treatment for the purpose of treating, storing, compacting, recycling, exchanging, or disposing of industrial hazardous waste materials, including treatment, compacting, resource recovery or disposal plants, equipment and furnishings thereof used for the storage, treatment, compacting, composting, shredding, converting, utilization, processing, or final disposal of hazardous waste, including but not limited to mechanical, chemical or thermal processing systems, incinerators, sanitary landfills, other facilities for the storage, reduction or conversion of hazardous waste, including but not limited to transfer stations, baling facilities, railroad and maritime facilities, motor trucks or vehicles and appurtenances, furnishings, equipment and machinery deemed necessary thereto.

§ 5. Such law is hereby amended by adding a new section one thousand two hundred eighty-five-c to read as follows:

§ 1285-c. Construction, operation and maintenance of industrial hazardous waste treatment, storage and disposal facilities. In addition to its existing powers, the corporation is hereby empowered to construct, operate and maintain industrial hazardous waste treatment, storage and disposal facilities, including plants, works, instrumentalities, or parts thereof, and appurtenances thereto for the collection,

conveyance, treatment, exchange and disposal of hazardous wastes provided such a facility receives a certificate of environmental safety and public necessity as provided in title eleven of article twenty-seven of the environmental conservation law and is located on lands in a municipality where such industrial uses are permitted. The corporation may subcontract for the construction or operation of such facility.

§ 6. Such law is hereby amended by adding a new section one thousand two hundred eighty-five-d to read as follows:

§ 1285-d. Studies regarding design, construction and operation of industrial waste treatment, storage and disposal facilities. 1. The purposes of the corporation shall include research and development of technologies for treatment, storage and disposal of industrial hazardous wastes consistent with economic, social and environmental objectives. In carrying out such purposes the corporation shall prepare studies regarding the best technology or systems possible for the design, construction and operation of industrial hazardous waste treatment, storage and disposal facilities including methods to recover materials or energy and to detoxify or neutralize wastes. Studies shall also be made of methods to guarantee long-term maintenance, ownership, monitoring, and environmental soundness of long-term hazardous waste storage and disposal sites. With respect to matters of operation and long-term maintenance, consideration shall be given to the various options for locating such storage and disposal sites and for public or private ownership and for public or private operation consistent with the maximum protection of public health, safety and welfare and the natural environment.

2. Not later than one year from the effective date of this section, the corporation shall submit a report to the governor and the legislature of its studies conducted pursuant to subdivision one of this section.

3. To advise the corporation on technical matters, a technical advisory committee shall be constituted to be composed of the commissioners of transportation, commerce, health and environmental conservation, the secretary of state, and five persons representative of affected industries to be appointed by the governor with the advice and consent of the senate.

In excercising its responsibilities, the corporation shall also cooperate and act in conjunction with industrial, commercial, medical, scientific, public interest and educational organizations within the state, and with agencies of the federal government, of the state and its political subdivisions, of other states, and joint agencies thereof.

§ 7. Article twenty-seven of the environmental conservation law is hereby amended by adding two new titles nine and eleven to read as follows:

TITLE 9

INDUSTRIAL HAZARDOUS WASTE MANAGEMENT

Section 27-0900. Applicability.
27-0901. Definitions.
27-0903. Identification and listing of hazardous waste.
27-0905. Manifest system.
27-0907. Standards applicable to generators of hazardous waste.
27-0909. Standards applicable to transporters of hazardous waste.
27-0911. Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities.
27-0913. Permits and registrations for storage, transportation, treatment, or disposal of hazardous wastes.
27-0915. Inspections and general reporting.
27-0917. Long-term maintenance.
27-0919. Proprietary information.

§ 27-0900. Applicability.

It is the purpose of this title to regulate the management of hazardous waste (from its generation, storage, transportation, treatment and disposal) in this state and to do

so in a manner consistent with public law 94-580, the Federal Resource Conservation and Recovery Act of 1976 hereinafter referred to as "RCRA".

§ 27-0901. Definitions.

When used in this title:

1. "Administrator" means the administrator of the federal environmental protection agency.

2. "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste or hazardous waste into or on any land or water so that such waste or hazardous waste or any related hazardous constituent thereof may enter the environment or be emitted into the air or discharged into any waters of the state including groundwaters thereof.

3. "Hazardous waste" means a waste or combination of wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

a. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or

b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed, or otherwise managed.

4. "Hazardous waste generation" means the act or process of producing hazardous waste.

5. "Hazardous waste management" means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

6. "Manifest" means the form used for identifying the quantity, composition, and the origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment, or storage.

7. "Person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, or any interstate body.

8. "Storage" means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste.

9. "Transport" means the movement of hazardous waste from the point of generation to any intermediate points and finally to the point of ultimate storage or disposal.

10. "Treatment" means any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste or as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume.

11. "Waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under article 17 of this chapter, or source, special nuclear or by-product material as defined in the Atomic Energy Act of 1954, as amended (68 Stat. 923) except as may be provided by existing agreements between the state of New York and the government of the United States.

§ 27-0903. Identification and listing of hazardous waste.

1. Not later than six months after the promulgation of the regulations for the identification and listing of hazardous wastes by the administrator as provided in RCRA, section 3001, the commissioner shall promulgate regulations in a manner consistent with the state administrative procedure act, setting forth the criteria for

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identification or listing, and a list of, hazardous wastes which shall be as promulgated by the administrator. These criteria and the accompanying list shall identify the particular hazardous wastes which shall be subject to this title.

2. Where appropriate such regulations shall provide for exemptions from the provisions of this title for the management of small quantities of wastes listed as hazardous when used or produced by research and limited use operations.

3. The regulations setting forth the criteria for identification and listing, and the list of, hazardous wastes subject to this title may be amended by the commissioner from time to time as appropriate, based upon hazardous waste conditions of particular relevance to the state. In so doing, the commissioner shall petition the administrator as provided in section 3001 of RCRA. If the administrator approves such petition the commissioner shall promulgate the appropriately amended regulations in a manner consistent with the state administrative procedure act. If the administrator denies such petition, the commissioner may promulgate the appropriately amended regulations only after approval of the state environmental board based upon a showing of the circumstances constituting the hazardous waste conditions of particular relevance to this state, and then in a manner consistent with the state administrative procedure act.

§ 27–0905. Manifest system.

Not later than six months after the promulgation of regulations for hazardous wastes pursuant to paragraph one of section 27–0903 of this title, and after consultation and coordination with the commissioner of transportation, the commissioner shall promulgate in a manner consistent with the state administrative procedure act, regulations establishing a manifest system by which to monitor the transportation, storage, and disposal of hazardous waste and to assure that such acts are performed in a manner consistent with this title. Such manifest systems shall conform to that adopted by the administrator pursuant to RCRA. Where appropriate and consistent with the provisions of RCRA, the commissioner may provide for exemption from the provisions of this section for the transport of hazardous waste by the generator from one facility to another owned and operated by the generator. As a minimum such system shall require that:

1. Hazardous waste generators use a specified form identifying the composition, quantity and disposition of each shipment of hazardous waste;

2. Copies of manifest be carried during transportation of hazardous waste; and

3. Hazardous waste generators, hazardous waste transporters and owners and operators of hazardous waste treatment, storage and disposal facilities maintain copies of manifest for at least three years.

§ 27–0907. Standards applicable to generators of hazardous waste.

Not later than eighteen months after the effective date of this title, in a manner consistent with the state administrative procedure act, the commissioner shall promulgate regulations establishing standards which shall be applicable to generators of hazardous waste identified or listed under this title, necessary to protect human health and the environment. Such standards shall establish requirements respecting:

1. Recordkeeping practices that accurately identify the quantities of such hazardous waste generated, the constituents thereof which are significant in quantity or in potential harm to human health or the environment, and the disposition of such wastes;

2. Labeling practices for any containers used for the storage, transport, or disposal of hazardous waste which will identify accurately such wastes, and be in conformance with federal transportation requirements;

3. Use of appropriate containers for hazardous waste;

4. Furnishing of information on the chemical composition of such hazardous waste to persons transporting, treating, storing, or disposing of such wastes;

5. Use of the manifest system established under section 27–0905 of this title to assure that all such waste generated is designated for treatment, storage, or disposal

in treatment, storage or disposal facilities (other than facilities on the plant site where the waste is generated) for which a permit has been issued as provided in section 27-0913 of this title; and

6. Submission of reports to the commissioner, at such times as the commissioner deems necessary, respecting

a. the quantities and composition of hazardous wastes identified or listed under this title, generated during a specified time period; and

b. the disposition of all hazardous wastes reported under subparagraph a of this subdivision.

§ 27-0909. Standards applicable to transporters of hazardous waste.

Not later than eighteen months after the effective date of this title, and after consultation and coordination with the commissioner of transportation, and after opportunity for public hearings, the commissioner shall promulgate regulations establishing such standards which shall be applicable to transporters of hazardous waste identified or listed under this title, as may be necessary to protect human health and the environment. Such standards shall include but need not be limited to requirements respecting:

1. Recordkeeping practices that accurately identify the hazardous wastes transported, and their sources and delivery points;

2. Transportation and storage of such waste only if properly labeled;

3. Compliance with the manifest system established under section 27-0905 of this title;

4. Transportation of all such hazardous waste only to the hazardous waste treatment, storage, or disposal facility or facilities which are designated on the manifest form, a copy of which shall be presented to the generator prior to transportation, and which either hold operation permits issued under this article, are a permittee under the Federal Resource Conservation and Recovery Act of nineteen hundred seventy-six or any amendments thereof, or are otherwise duly authorized to accept hazardous waste; and

5. Requirement of a bond to meet all responsibilities in case of release of hazardous wastes causing damage as a condition to the issuance of a certificate of registration to a transporter required by this title.

§ 27-0911. Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities.

Standards applicable to owners and operators of hazardous waste treatment, storage and disposal facilities shall be those established in title seven of this article, and the regulations promulgated thereunder, shall be consistent with comparable standards promulgated by the administrator pursuant to RCRA, and shall also include compliance with the manifest system established in section 27-0905 of this title.

§ 27-0913. Permits and registrations for storage, transportation, treatment, or disposal of hazardous wastes.

1. No person shall engage in storage, treatment, or disposal, including, storage at the site of generation, of hazardous wastes without first having obtained a permit pursuant to title seven of this article.

2. No person shall engage in the transportation of hazardous wastes without first having obtained a certificate of registration pursuant to title three of this article.

§ 27-0915. Inspections and general reporting.

1. For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, any person who generates, stores, treats, transports, disposes of, or otherwise handles hazardous wastes shall, upon oral or written request of any officer or employee of the department, when properly identified and duly designated by the commissioner, furnish or permit such officer or employee at all reasonable times to have access to, and to copy all records relating to such wastes. For the purposes of developing or assisting in the development of any

regulation or enforcing the provisions of this title, such officers or employees are authorized after proper notification and identification:

a. To enter at reasonable times any establishment or other place maintained by any person where hazardous wastes are generated, stored, treated, or disposed of;

b. To inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes.

Each such inspection shall be commenced and completed with reasonable promptness. If the officer or employee obtains any samples, prior to his leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the sample obtained and if requested a portion of each such sample equal in volume or weight to the portion retained. If any analysis is made of such samples, a copy of the results of such analysis shall be furnished promptly to the owner, operator, or agent in charge.

§ 27-0917. Long-term maintenance.

Within six months of the effective date of this title, the department shall evaluate methods for guaranteeing long-term maintenance, ownership, monitoring, and environmental soundness of hazardous waste storage and disposal sites consistent with protection of the public health, safety and welfare and the environment. Such methods shall include but not be limited to state ownership of such sites, establishment of long-term care funds, conveyance of completed sites to the state, and the requirement of long-term performance bonds. Not later than six months after such evaluation, the commissioner shall, after public hearing and approval by the state environmental board, promulgate regulations to provide for adequate long-term care of all hazardous waste storage and disposal facilities. The commissioner shall make recommendations to the legislature regarding levying of fees and assessments in such amounts and under such circumstances as are appropriate to accomplish the goals of this section and establishing appropriate financial accounting methods by which to receive and disburse such fees and assessments exclusively for the purposes of this section.

§ 27-0919. Proprietary information.

The department shall hold confidential any information concerning the chemical composition, quantity, method of treatment or disposal of hazardous waste or any information related thereto when shown by any person that such information, if made public, would divulge competitive business information, methods or processes entitled to protection as trade secrets of such person.

TITLE 11

INDUSTRIAL SITING HAZARDOUS WASTE FACILITIES

Section 27-1101. Definitions.
27-1103. Criteria for siting industrial hazardous waste treatment, storage and disposal facilities.
27-1105. Siting industrial hazardous waste facilities.
27-1107. Powers of municipalities.

§ 27-1101. Definitions.

As used in this title, unless the context otherwise requires:

1. "Person" means any individual, public or private corporation, political subdivision, government agency, industry, partnership, association, firm, trust, estate or any other legal entity whatsoever.

2. "Corporation" means the New York state environmental facilities corporation.

3. "Board" means a facility siting board constituted pursuant to the provisions of section 27-1105 of this title.

4. "Industrial hazardous waste" shall mean an industrial waste or combination of wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

a. Cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness; and/or

b. Pose a substantial present or potential hazard to human health or the environment and, therefore, must be segregated and excluded from the general municipal waste system and sewage collection and treatment process.

5. "Industrial hazardous waste treatment, storage and disposal facility" shall mean a specialized facility or site other than a sewage treatment for the purpose of treating, storing, compacting, recycling, exchanging, or disposing of industrial hazardous waste materials, including treatment, compacting, resource recovery or disposal plants, equipment and furnishings thereof used for the storage, treatment, compacting, composting, shredding, coverting, utilization, processing, or final disposal of hazardous waste, including but not limited to mechanical, chemical or thermal processing systems, incinerators, sanitary landfills, other facilities for the storage, reduction or conversion of hazardous waste, including but not limited to transfer stations, baling facilities, railroad and maritime facilities, motor trucks or vehicles and appurtenances, furnishings, equipment and machinery deemed necessary thereto.

§ 27-1103. Criteria for siting industrial hazardous waste treatment, storage and disposal facilities.

1. The commissioner shall, after investigation and opportunity for public comment, within one year from the effective date of this section, publish criteria for siting industrial hazardous waste treatment, storage and disposal facilities. Such siting criteria shall be designed to insure the maximum safety of the public from hazards associated with treatment, storage, and disposal of hazardous wastes. The commissioner shall also within one year from such effective date adopt criteria prescribing the form and content of applications for a certificate of environmental safety and public necessity to construct an industrial hazardous waste treatment, storage and disposal facility.

2. The criteria issued pursuant to subdivision one of this section for the siting of industrial hazardous waste treatment, storage and disposal facilities shall take into account, among other factors:

a. The density of population in areas neighboring such facility,

b. The density of population in areas adjacent to delivery routes to such facility,

c. The risk of accident during the transportation of hazardous wastes,

d. The risk of contamination of ground and surface waters by leaching and runoff from such facility,

e. The risk of fires or explosions from improper storage and disposal methods,

f. The impact on the municipality where the facility is to be sited in terms of health, safety, cost and consistency with local planning, and

g. The nature of the probable environmental impact, including specification of the predictable adverse effects on the natural environment and ecology, public health and safety, scenic, historic, cultural and recreational value, water and air quality, wildlife and an evaluation of measures to mitigate adverse effects.

3. The criteria issued by the commissioner pursuant to subdivision one of this section prescribing the form of an application for a certificate of environmental safety and public necessity to construct an industrial hazardous waste treatment, storage and disposal facility shall require the applicant to supply detailed information regarding:

a. The location of the proposed facility,

b. A description of the design and capacity of the facility,

c. The expected sources of hazardous wastes for the facility, the proposed methods of transporting such wastes to and from the facility, and the routes which deliveries will traverse,

d. The need for the facility,

e. The environmental impacts of the proposed facility,

f. A description of reasonable alternative locations for the proposed facility, and

g. Such other information as the commissioner shall prescribe as to whether the proposed facility is necessary and compatible with the surrounding environment and with the health, safety and welfare of neighboring populations.

§ 27-1105. Siting industrial hazardous waste facilities.

1. After the publication of siting criteria pursuant to subdivision one of section 27-1103 of this title but not later than one year from the effective date of this section, no person may commence construction or operation of a new industrial hazardous waste facility, hereinafter referred to as "facility", without having received a certificate of environmental safety and public necessity from the facility siting board as hereinafter provided. Applications for industrial hazardous waste facilities submitted to the department, and not denied, prior to the effective date of this act shall be exempt from the provisions of this section.

2. To obtain the certificate of environmental safety and public necessity required pursuant to subdivision one of this section, the following procedures shall be followed:

(a) An application must be submitted to the department in the form required pursuant to subdivisions one and three of section 27-1103 of this title.

(b) On or before fifteen calendar days after the receipt of such application, the department shall mail written notice to the applicant whether or not the application is complete. If the application is not complete, the provisions of paragraphs (c) and (d) of subdivision one of section 70-0109 of this chapter shall be applicable. If, or when, the application is complete, the department shall, concurrent with notification to the applicant, send the application and written notice to the office of the governor requesting that a facility siting board be constituted consistent with this subdivision.

(c) Immediately upon determining that an application is complete, the department shall cause a notice of application to be published in the next available environmental notice bulletin which shall be not later than ten calendar days after the date of such notice and shall provide notice to the chief executive officer of each municipality in which the proposed project is located, and may direct the applicant to provide such reasonable notice and opportunity for comment to the public as the department deems appropriate. Such notice shall also be given to all property owners of record within three hundred feet of the subject facility. In addition, notice shall be published in at least two newspapers having a general circulation in the area in which the proposed activity is located, and in contiguous areas potentially affected by the proposed action.

(d) On or before fifteen calendar days after the receipt of such notification the governor shall constitute a facility siting board to be composed of the commissioners of transportation, environmental conservation, health and commerce, the secretary of state and three ad hoc members appointed by the governor, two of whom must be residents of the judicial district in which the facility is primarily proposed to be located. The term of the ad hoc members shall continue until a final determination has been made in the particular proceeding for which they were appointed. Five of the eight persons on the board shall constitute a quorum for the transaction of any business of the board, and the decision of five members of the board shall constitute action of the board. In addition to the requirements of the public officers law, no person shall be eligible to be an appointee of the governor to the board who holds another state or local office. The governor shall appoint the chairman of the board and the commissioner of environmental conservation shall make staff available to support the board in carrying out its responsibilities.

(e) On or before sixty calendar days after the facility siting board is constituted, the chairman of the board shall commence the conduct of an adjudicatory public hearing upon the application. Such hearing shall be preceded by public notice, in the same form and manner as provided in paragraph (c) of this subdivision, given not less than thirty days prior to such hearing.

(f) The board shall render a decision based upon the record either granting the application, denying it, or granting it upon such terms, conditions, limitations, or modifications thereof as the board may deem appropriate. The board shall deny an application to construct or operate a facility if residential areas and contiguous populations will be endangered, if construction or operation of such facility would be contrary to local zoning or land use regulations in force on the date of the application, or if it otherwise does not conform to the siting criteria established for such facility pursuant to section 27-1103 of this title or the board finds that the facility is not necessary, or is otherwise not in the public interest to be approved.

(g) The chairman of the facility siting board shall mail its decision to the applicant, to the department, and to all parties to the hearing on or before sixty calendar days after receipt by the board of a complete record, as that term is defined in paragraphs (a) through (e) of subdivision one of section 302 of the state administrative procedure act.

(h) The provisions of article 70 of this chapter shall apply to applications pursuant to this title, to the extent such provisions are not inconsistent herewith.

§ 27-1107. Powers of municipalities.

Notwithstanding any other provision of law, no municipality may, except as expressly authorized by this article or the board, require any approval, consent, permit, certificate or other condition regarding the operation of a facility with respect to which a certificate hereunder has been granted; provided, however, that such municipality has received notice of the filing of the application therefor.

§ 8. Section 71-1501 of such law, as amended by chapter six hundred forty of the laws of nineteen hundred seventy-seven, is hereby amended to read as follows:

§ 71-1501. Applicability of title.

In addition to the provisions of section 71-0101 and 71-0301 and title 5 of this article, the provisions of this title shall be applicable to the enforcement of titles 3 [and 5], *7 and 9* of article 27.

§ 9. Sections 71-1503 and 71-1505 of such law are hereby **repealed** and two new sections 71-1503 and 71-1505 are hereby added to read as follows:

§ 71-1503. Enforcement of titles 3 and 7 of article 27 of this chapter.

1. Administrative sanctions. Any person who violates any of the provisions of, or who fails to perform any duty imposed by titles 3 and 7 of article 27 or any rule or regulation promulgated pursuant thereto, or any term or condition of any certificate or permit issued pursuant thereto, or any final determination or order of the commissioner made pursuant to this section shall be liable for a civil penalty not to exceed two thousand five hundred dollars for each such violation and an additional penalty of not more than one thousand dollars for each day during which such violation continues, to be assessed by the commissioner after a hearing or opportunity to be heard pursuant to the provisions of section 71-1709 of this chapter, and, in addition thereto, such person may by similar process be enjoined from continuing such violation and any permit or certificate issued to such person may be revoked or suspended or a pending renewal application denied.

2. Criminal sanctions. Any person who, having any of the culpable mental states defined in section 15.05 of the penal law, shall violate any of the provisions of or who fails to perform any duty imposed by titles 3 and 7 of article 27, or any rules and regulations promulgated thereto, or any final determination or order of the commissioner made pursuant to this section shall be guilty of a violation and, upon conviction thereof, shall be punished by a fine of not less than one thousand dollars nor more than two thousand five hundred dollars per day of violation.

§ 71-1505. Enforcement of title 9 of article 27 of this chapter.

1. Administrative sanctions. Any person who violates any of the provisions of, or who fails to perform any duty imposed by title 9 of article 27 or any rule or regulation promulgated pursuant thereto, or any term or condition of any certificate

or permit issued pursuant thereto, or any final determination or order of the commissioner made pursuant to this section shall be liable in the case of a first violation, for a civil penalty not to exceed five thousand dollars and an additional penalty of not more than two thousand five hundred dollars for each day during which such violation continues, to be assessed by the commissioner after a hearing or opportunity to be heard pursuant to the provisions of section 71-1709 of this chapter, and, in addition thereto, such person may by similar process be enjoined from continuing such violation and any permit or certificate issued to such person may be revoked or suspended or a pending renewal application denied. In the case of a second, and any further violation, the liability shall be for a civil penalty not to exceed twenty-five thousand dollars for each such violation and an additional penalty not to exceed ten thousand dollars for each day during which such violation continues.

2. Criminal sanctions. Any person who, having any of the culpable mental states defined in section 15.05 of the penal law, shall violate any of the provisions of or who fails to perform any duty imposed by title 9 of article 27 or any rules and regulations promulgated thereto, or any term or condition of any certificate or permit issued pursuant thereto, or any final determination or order of the commissioner made pursuant to this section shall be guilty of a misdemeanor and, upon conviction thereof, shall for a first conviction be punished by a fine not to exceed five thousand dollars per day of violation or by imprisonment for a term of not more than one year, or by both such fine and imprisonment. If the conviction is for an offense committed after a first conviction of such person under this subdivision, punishment shall be by a fine not to exceed twenty-five thousand dollars per day of violation, or by imprisonment for not more than two years, or by both such fine and imprisonment.

§ 10. Subdivisions one and six of section 27-0301 of such law are hereby amended to read as follows:

1. No person shall engage in [the business of] cleaning septic tanks [or], *marina sanitary waste-holding facilities,* cess pools, *or commercial portable toilets serving construction or industrial sites, recreational facilities or agricultural operations,* [or marina sanitary waste-holding facilities,] scavenging or disposing of industrial process waste products, or otherwise removing or disposing of solid or liquid wastes from [domestic] sewer systems and treatment facilities or from waste-producing operations of [factories] *industrial* or commercial establishments without first obtaining a certificate of registration from the Commissioner of Environmental Conservation as hereinafter provided. [A person shall be considered to be engaged in business for the purposes aforesaid if he holds himself out as capable of performing and performs such services for others for hire, or if he disposes of such waste products as a part of usual industrial operations] *A person generating such wastes shall be subject to the registration requirements of this title if he contracts with a common carrier to remove, transport, or dispose of such wastes if such common carrier is not registered pursuant to this title. For the purposes of this title, the term "person" shall have the same meaning as that given in title 7 of this chapter.*

6. Such registration shall be made or renewed annually. The [fee] *fees* for such certificate of registration shall be [twenty-five dollars] *those established by regulation promulgated pursuant to article 70 of this chapter,* payable annually with the application. A re-registration or renewal of the application for registration may be denied by the Commissioner for failure of the applicant to properly report as provided in subdivision 4 hereof.

§ 11. Subdivision eighteen of section 1-0303 of such law is hereby amended to read as follows:

18. "Person" shall mean any individual, public or private corporation, political subdivision, government agency, department or bureau of the state, municipality, industry, co-partnership, association, firm, trust, estate or any

other legal entity whatsoever. Provided, however, that for purposes of sections 3-0109 through 3-0115 inclusive, and sections 3-0305 and 3-0307 of article 3; articles 9, 11, 13 and 15; titles 7, 9, 11 and 13 of article 21; article 23; [title 3 of article 27;] articles 43, 45 and 47; and titles 1 through 15 inclusive and title 33 of article 71 applicable to these provisions, "person" means any individual, firm, co-partnership, association or corporation other than the state and a "public corporation".

§ 12. This act shall take effect on the first day of September next succeeding the date on which it shall have become a law.

TESTIMONY OF
RUSSELL R. EGGERT BEFORE THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
30 October 1978

Good morning, Mr. Chairman. My name is Russell R. Eggert, and I am an Assistant Attorney General from the State of Illinois. I appear here today on behalf of Illinois Attorney General William J. Scott.

I propose to address myself to the effects that EPA's delay in promulgating regulations under the Resource Conservation and Recovery Act has had and will have on the States. In this regard, while I do not purport to speak on behalf of other States, I think that the points I have are of general applicability. Within the past few days our office has been in contact with a number of other States and with the Council on State Governments. I am certain that the difficulties confronting Illinois are not unique.

State Legislation

State statutes are presently uniformly inadequate in the control they exercise over hazardous chemical wastes. To my knowledge only Minnesota and California have comprehensive regulations concerning hazardous chemicals. In order to assume full authorization to administer RCRA, most States will need to enact new legislation, and many States are eager to do so. Most States are taking a wait and see approach, however, because we simply do not know what the federal program with which we will have to comply will look like. This approach, while unfortunate, is probably preferable to passing State legislation in anticipation of EPA's regulations. I know of at least one State that did that, Kentucky: the legislature there precluded the State administrative agencies from adopting hazardous waste regulations more strict than those provided under RCRA (Ky. Rev. Stat. 224.252). Because RCRA preempts more lenient regulations, Kentucky is in essence required to adopt standards identical to EPA's. Until EPA actually does something, then, Kentucky is effectively prevented from taking even interim steps to address the hazardous waste problem.

The problems of those State legislatures which have decided to wait and see what EPA will do are somewhat different but no less serious. EPA has proposed delaying promulgation of some regulations until January of 1980. It should be recognized that for many States this will mean that it will be 1981, 1982, or even later before the necessary legislation can be enacted in response to the federal program. Idiosyncracies in the State legislative processes ensure that a lot of States will not even be able to consider legislation in this area until well after the federal regulations are promulgated. Let me briefly explain.

Most States have limitations on the introduction of new bills at legislative sessions. These range from a couple of months into the session, as in Illinois, to as short as the tenth legislative day in Nebraska and the 15th calendar day in Louisiana. Most legislatures convene in early January -- a few States begin even earlier. Thus EPA's target date of January 25, 1980 could hardly be worse: it will effectively preclude about 20 States from even considering necessary enabling legislation during the 1980 session.

To compound matters a few States still hold session only every other year and a few other States -- Illinois among them -- restrict the subject matter of bills that may be introduced during the 1980 session to budgetary matters and emergencies. It is not clear at this time whether Illinois will need to enact further legislation in response to EPA's regulations. If we do, however, it will quite possibly be 1981 before the legislation can even be considered. As serious as the hazardous chemical problems are, it would not be easy for a sympathetic member of the Illinois General Assembly to persuade his colleagues that it was an "emergency" when EPA had delayed for so long in promulgating regulations. And, of course, there will be inevitable delays in implementing any new State statutes, even assuming some are enacted.

To summarize my first point, then: most States will need to take legislative action in response to EPA's regulations, whenever they are ultimately promulgated. The inherent delays in the State

legislative process virtually guarantee an additional one, two, or three years delay beyond final promulgation before States can begin to assume authorization to administer RCRA.

State Administrative Programs

Many aspects of the dilemma confronting State legislatures as a result of EPA's delay also confront the State administrative agencies: for the next year or two, is it better to do nothing and wait for EPA to do something, or to go ahead now with a State program which may or may not have to be scrapped?

If we do nothing, of course, we preserve the very status quo which RCRA was designed to change. We will still have no effective public control over the very problems which RCRA is supposed to correct. As a fundamental matter of protecting the public health and welfare this is unacceptable.

A second consideration may sound a bit crass, but it is nevertheless real: the longer we wait to begin, the more costly the ultimate solution will be. We know, for example, that random dumping of hazardous chemicals is a commonplace occurance: everyone in this room can probably think of a few dramatic examples, such as the episode in Louisville, Kentucky last year in which the entire city sewage plant was knocked out by chemical wastes illegally poured down a sewer. When we catch someone illegally disposing of hazardous chemicals we come down hard on them. Unfortunately, we almost have to catch them in the very act, because Illinois, like most States, has inadequate authority to monitor the handling of hazardous materials. Nothing short of the national manifest system provided under RCRA will adequately address the problem, and that will not come into being until EPA acts. In the meantime, unknown people are dumping unknown chemicals in unknown places. When we discover these sites, either by chance or through some tragedy, it is invariably the government -- i.e. the public -- that must pay for the clean up. And the longer EPA waits the more widespread and more costly the problem will become.

On the other hand, economic factors can loom very large in the context of interim programs at the State level. To take but one example, Illinois could easily place itself at a serious economic disadvantage relative to its neighbors if we were to move forward too aggressively in this area. As I have already noted, Kentucky finds itself unable to act at all until EPA has acted: Kentucky right now is essentially a State without controls over hazardous wastes, through no fault of its own. Were Illinois to implement a vigorous program of hazardous waste regulation, costs to the industry would inevitably rise somewhat. Without a similar rise in costs in our neighboring States, we would run a serious risk of driving jobs and business out of the State. One of the best arguments for national uniformity of environmental controls is the prevention of exactly this sort of Balkanization of our economy.

There is another economic consequence to be weighed before interim State programs are adopted, and it too is a direct result of EPA's tardy development of national regulations. Implementation of any State program, no matter how modest, entails some start-up costs. I think most States are willing to assume these costs: indeed, I think the public is demanding it. But one must seriously question the wisdom of assuming those costs when we can be virtually certain that at least some of what we do will have to be undone within five years. We can guess what EPA's program will require, but we would need to be clairvoyant in order to know all of its details. There is more than one reasonable approach in this area, but if a State wants to assume authorization under RCRA, it must adopt EPA's approach. To do so may well involving abandoning a State program, adopted after the expenditure of substantial effort and resources.

Finally, there is the effect on the industry itself. I am not here as a spokesman for industry, but I do think we should acknowledge a valid argument when it is raised. Compliance with a government

regulation, whether State or federal and whether interim or long term, costs money. Compliance with requirements that change after two or three years costs more money. If a State adopts an interim program until EPA acts, and then drastically changes its requirements once regulations are probulgated, can we really justify the additional cost?

To summarize: EPA, by its delay, has placed the State administrative agencies charged with protection of public health and safety and with preventing environmental damage in an untenable position. We must either do nothing, and wait impatiently for EPA to announce its regulations, or we must adopt our own programs with the full knowledge that they will only be viable for a couple of years. Neither alternative is satisfactory, and it should not be necessary to have to make the choice. If EPA would get on with its job and promulgate regulations under RCRA in a timely and responsible manner, we could all focus our energies on the substantive tasks on hand.

I would like to thank you, Mr. Chairman, and the Committee, for allowing me to speak this morning, and I would be pleased to answer any questions which any of you may have.

Mr. GORE. Thank you for your statement. Thank all of you.

Dr. Davoli, I wanted to focus on one aspect of your testimony. You say that the regulations which are now in draft form, delayed as they are, would still not cover chemicals that have caused such hardship in Toone, Tenn. Is that correct?

Dr. DAVOLI. Yes; that is correct. These draft regulations will cover only those chemicals for which an EPA primary drinking water standards has been established, eight metals and six pesticides, plus a limited number of toxic organics. There are many pesticides like those dumped in Tennessee and in Love Canal that are not covered by these regulations, as well as many other toxic organics.

Mr. GORE. Mr. Greene.

Mr. GREENE. Thank you, Mr. Chairman.

Mr. Dach, in your prepared statement you referred to EPA as being in the midst of a management fuddle; is that correct?

Mr. DACH. Yes, that is correct.

Mr. GREENE. One of the things which has frankly confused me personally has been the group of events which took place in May and June and July of this year in which, as I understand it, the assistant administrator for this program was briefed on the specifics of the regulations which were then in progress and then options were developed. And then as I understand it, there was essentially a redirection of these regulations and we now have essentially a new regulatory development process going forward. Is that your understanding of what took place?

Mr. DACH. Yes, I think that is true. There is no question that in July of this year many of the drafts that had been worked on by the working groups were given extensive review by policymakers in the Assistant Administrator's office, and at that time policy decisions were made that resulted in the addition of months onto the schedule. There were some major changes in the way hazardous wastes were defined under section 3001. There were also some discussions of the financial responsibilities sections under section 3004. Those discussions and conclusions necessarily resulted in more work and more drafting being done before the regulations could be promulgated. I think the question for which we do not have a clear answer, but we have heard from various staff members of the agency, was: Should not those decisions have been made at an earlier date?

While we cannot really get details on what occurred or did not occur, the fact that the November memo that I quoted from and then the options memo that was submitted at those policy meetings in July contain many of the same issues, seems to indicate a lot of time went by before they were wrestled with.

Mr. GREENE. Without commenting on the quality of decisions that were made, assuming one wished to make a change, it could have been made?

Mr. DACH. It seems to me most of those changes could have been made back in certainly November 1977. I think the reason I can say that is many of them were not awaiting scientific information that people were doing research on and some laboratory work, and they were waiting for the final report or a contracting was out and they were waiting for a final report. These were policy issues that

in our minds the agency could have grappled with and decided on at a much, much earlier date.

Mr. GORE. If I might interject, November 1977 is when Christine Sterling first complained about the funny taste in their drinking water.

Mr. GREENE. I have no further questions, Mr. Chairman.

Mr. GORE. Mr. Nowak?

Mr. NOWAK. Thank you, Mr. Chairman.

Dr. Davoli, can you tell me in your opinion now is the agency operating at what could be called the outer limit of the state of the art in the hazardous waste field?

Dr. DAVOLI. Are they operating at the outer limit? Define that a little bit clearer.

Mr. NOWAK. Well, with all the technology that is available in today's marketplace.

Dr. DAVOLI. I think that in its draft regulations for section 3004, EPA is utilizing the technology that is the best available.

With the exception of the land farming and soil conditioning regulations, which I feel are very weak, the 3004 regulations tend to be pretty good.

But it is the 3001 regulations that are of the most concern. What we have found is that there are hundreds of substances which are known to cause cancer, known to cause birth defects, genetic damage or nerve damage.

Yet, the 3001 draft regulations do not address these. Therefore, wastes containing such toxins will not be declared hazardous.

Mr. NOWAK. You have mentioned in your testimony that USEPA has tentatively decided to exempt the POTW sludge flow regulations under subtitle C. Do you know the rationale for that decision?

Dr. DAVOLI. Well, the rationale behind that decision is twofold. RCRA, first of all, permits the EPA to integrate the implementation of RCRA with other acts. Second, EPA has stated that it would be easier for them to regulate the disposal of POTW sludges, including land disposal and incineration, under one act—specifically, section 405 of the Federal Water Pollution Control Act.

I think one major problem with regulating the disposal of POTW sludge under section 405 of the Water Pollution Control Act is that the people within the water division of EPA who are giving out the money to build POTW's—and who are in a way generating these hazardous sludges because of a lack of strong pretreatment standards—will be regulating their own wastes.

Mr. NOWAK. Do you think that suggests a conflict of interest situation?

Dr. DAVOLI. Yes; I think it does. In addition, we feel—that is, our lawyer feels—that the sections under 405 are not strong enough to regulate hazardous POTW sludges. They do not give us the same provisions as subtitle C.

For example, the enforcement provisions are not there, nor are the provisions for imminent hazard or for public participation. They are just too weak.

Mr. NOWAK. Would you agree with the assessment Mr. Dach made concerning the timetable for the proposed regulations? Does that seem realistic, in your opinion, to condense the review periods as he recommended in his testimony?

Dr. DAVOLI. I think I would prefer not to comment on that right now; that is a decision for our lawyer to make.

I have one additional comment to add to what Mr. Dach said. I have a memo which I will be giving to the committee, that is dated July 12, 1978. Basically that memo concerns a meeting that was held in June within EPA.

At that meeting Mr. Jorling had a meeting with his staff and directed them to consider making certain changes in the subtitle C regulations.

Now, these changes were pretty extensive, as Leslie mentioned, and included a substantial modification as to how a hazardous waste would be defined. Characteristics and test procedures were not to be used to identify hazardous wastes; instead, only hazardous wastes specifically listed in the 3001 regulations would be regulated. Such a modification makes the 3001 regulations much less comprehensive.

Mr. Jorling also suggested that the EPA not regulate the oil and gas industry, and that they avoid regulating certain other large industries.

Even before RCRA was passed, the Office of Solid Waste had begun drafting regulations for hazardous wastes. In 1977 those regulations were in a draft form. There was not much change in those regulations from 1977 until June of 1978.

Mr. NOWAK. No substantive changes?

Dr. DAVOLI. Yes, not many substantive changes. Yet, in June Mr. Jorling directed his staff to make substantial changes, although he had a whole year previous to that June meeting to make such suggestions.

The net effect is that Mr. Jorling has held up the promulgation of these regulations.

Mr. NOWAK. Do you know of any document or input that EPA may have had from industry or any other source relating to that time frame that may have caused delay?

Dr. DAVOLI. That I cannot comment on.

Mr. NOWAK. You are not aware of any intervening forces that may have slowed down the whole process?

Dr. DAVOLI. Well, I certainly know from talking to people within EPA that industry has been very interested in these regulations and they have had constant telephone conversations with them.

Also at a meeting held by EPA last month at which they tried to explain their failure to promulgate the subtitle C regulations, several industry people strongly supported the delay.

Mr. DACH. I think another force to be looked at here is perhaps not industry, but the future steps of the inflation fighters in the executive branch of the Government; that is, if you look at some of the rationales that were given in the July 12 memo for some of the changes in the 3001 definitions, basically changes that were purposely meant to narrow the scope of the RCRA program, they were made for cost reasons.

They were not made because people decided that certain chemicals no longer present a risk to public health when they did last week, but that the costs of the program might be too great to get by.

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So, I think that there has been a feeling of pressure on the part of the agency from people who would like to keep the costs down. But I think as people mentioned this morning, in the long run the costs of cleaning up sites that were improperly used in the first place is probably going to be much higher than the costs of the regulations.

Mr. GORE. If the gentleman will yield at that point, to underscore that point, the inflationary impact of the present policy of neglect far exceeds the impact of expenditures to find proper disposal methods.

Mr. DACH. I would agree.

Mr. NOWAK. Just to comment further, Mr. Wolff, I think your testimony was very well received. We know that many States are delaying and waiting and wondering what will be promulgated; and certainly the time elements are critical, where you have industrial sources now moving in as fast as they can so that they don't incur perhaps a problem later on trying to dispose of it under the regulations.

Yet, we know what possibly can happen, the dumps leaching and so forth, and having to be rediscovered at a much greater cleanup cost either to industry or to the Government.

So, we hopefully will be able to move ahead.

Thank you, Mr. Chairman.

Mr. DACH. Could I add another resource issue here that I think the committee should be aware of. It doesn't pertain as much to the development of the regulations as it will prove to be in the implementation and the enforcement; that is, that as part of again the President's recent anti-inflation program, apparently there has been a decision made to freeze available positions within the Environmental Protection Agency, positions that are funded by Congress, that have been approved in the budgeting process but not yet filled, but for which hiring has not yet been done.

It is estimated that about 10 percent of EPA's positions fall into that category. But certainly the people that EPA had planned to put in the regions to monitor the implementation of RCRA and the enforcement of RCRA at specific sites are now apparently being eliminated by the President's program.

Even with the addition of these people EPA had estimated that approximately only 2 percent a year of hazardous waste facilities that would be operating would be looked at by their personnel.

Now, with this cut of people, that number, if it can be lowered, has been lowered. I would urge the committee to take a look at that problem as well.

Mr. GORE. That is an overall level that you are talking about, isn't it?

Mr. DACH. The 2 percent? The 1,200 positions is an overall level within the agency.

Mr. GORE. Yes, and presumably priorities could be re-established to some extent.

Mr. DACH. I think that may be true. But the 1,200 positions is a lot of positions to reallocate. In the TSCA program, that is 200 positions into a staff that basically has no personnel now at all. So, I don't think the agency is really in a position to reallocate from what they have.

Mr. GORE. I see. Those are the two new comprehensive programs, RCRA and TSCA, and they would be particularly hard hit by this proposal.

Mr. DACH. That is true.

Mr. GORE. Mr. LaFalce?

Mr. LAFALCE. Thank you, Mr. Chairman.

First, I would like to thank the Environmental Defense Fund, Mr. Dach in particular, for being of so much assistance to me in the past, providing me with material, information, advice, especially in the preparation of the two bills that I drafted, one for the changes in RCRA and the second in providing compensation for victims of toxic pollutants. I thank them very much.

Second, I would also like to compliment them for being the prime movers in attempting to get the Environmental Protection Agency to act more expeditiously in the promulgation of regulations, by bringing a lawsuit against EPA.

Mr. Dach, you have also taken a very reasonable, rational approach, saying OK, mistakes were made in the past but, you know, it is now October 30, 1978.

Given that fact, what is your bottom line? What is the minimum period of time now that you think the regulations can be promulgated by, adhering to the law and promulgating wise regulations that will stand up?

I mean, is there that much of a difference between what you foresee in the future and what EPA is saying they are going to be able to do?

Mr. DACH. As I mentioned, our analysis indicates that EPA should be able to come out with these regulations 8 months before they say they are.

Mr. LAFALCE. So they are saying what, January 1980?

Mr. DACH. They are saying January 25, 1980, and we feel that at the very least July 1, 1979, is an accessible date.

Mr. LAFALCE. You say the very least, July 1, 1979. Do you think it could be done before that?

Mr. DACH. The issue here I guess is that it is difficult to get all the facts and all the working, machinations within the Agency that lead them to their schedule. One of the things we hope——

Mr. LAFALCE. You are saying July 1. That is——

Mr. DACH. That is 7 months—January 25. So, it is approximately 8 months. But we are hoping that through the lawsuit EPA will be forced to give an explanation for their proposed schedule, one which we have not seen so far.

Mr. LAFALCE. You have asked for a bill of particulars, have you not? Have you reached that stage?

Mr. BUTLER. One of the problems in answering some of these questions is that once the lawsuit was filed, an iron curtain went down between us and the agency and we have to deal only through their lawyers.

Being involved in litigation, they are rather recalcitrant in giving us forthcoming answers as to what the proposed defenses are for their delay.

Now, then, there are discovery motions which have been filed. We have asked for such information. Thus far it has not been

complied with. What we will receive in answer to the discovery questions, we don't really know.

Mr. LAFALCE. Well, what is the date by which you, by law, by judicial decree, will receive the response from EPA?

Mr. BUTLER. Well, the first court hearing on the subject is tomorrow in the U.S. district court here. The State of Illinois has the first pending discovery request for all information on this subject.

Within 30 days, I think it was, you requested that this information be made available to the parties in the case, certainly to the State of Illinois. Illinois' request is the most comprehensive to date.

The response of the agency is as yet an unknown on that subject. So that the information we have at this point is information which was gathered prior to the filing of this suit.

Formalities go into effect which preclude ex parte contacts with employees of EPA, except through their attorneys. Their attorneys are necessarily very conservative about their answers now.

Mr. LAFALCE. I understand. Let me continue.

Mr. WOLFF. I believe in the next week or so some of that information is due.

Mr. LAFALCE. And then that will be a matter of public record, will it not, rather than just privy to the parties in suit?

Mr. BUTLER. It depends, I suppose, on the circumstances that EPA proposes to give us the information under. In other words, if some of the material is allegedly proprietary or confidential, which sometimes happens in discovery, it is true that counsel can receive material which is not available to the public at large.

Mr. LAFALCE. It seems to me the bulk would be nonproprietary.

Mr. BUTLER. We would certainly argue most of it would be nonproprietary.

Mr. LAFALCE. You would certainly have considerable support in Congress for that.

Mr. Dach, you say in February of 1978 the Office of Planning and Evaluation took $3.4 million of fiscal 1978 dollars away from the Office of Solid Waste. What did they do with that?

Mr. DACH. I think the money was probably well spent within another section of the Agency. I think the issue at hand that I was trying to demonstrate was that the Agency apparently did not feel either that they had to bend—give RCRA the first priority, and, therefore, keep all its money, if that was going to have an effect on the dates the regulations were going to come out, or they concluded that resources in this case were not a real factor, and, therefore, the regulations should have been able to go out with the resources that they already had on hand on time.

Mr. LAFALCE. You also say another excuse they give, other than money, is the complexity of the regulations, the technicalities involved. You say it is not all that technical.

You make reference to a November 18, 1977, memo from Mr. Lehman which lists "the hazardous waste related issues that are important for you to focus on," and you say that not a single one of these is a technical issue, they all relate to policy questions.

What are the policy questions? You didn't go into that.

Mr. DACH. There are some that we heard about this morning. One of the major ones was the question of inactive sites. How tough was EPA going to be on this problem? Were they going to

attempt to use the law to its utmost capability to be able to get a handle on abandoned sites?

That was a question that was bounced around in the agency.

Another question was on the definition of hazardous wastes.

Mr. LaFalce. Well, now, within the agency haven't they pretty much made the judgment not to pursue abandoned sites for a number of reasons?

No. 1, lack of clear statutory intent to pursue abandoned sites? No. 2, lack of a reclamation program and money for same?

Mr. Dach. I think that decision unfortunately has been made, but it was not a decision that was firmly made many months ago. It continued to hound the agency——

Mr. LaFalce. Would that reading of RCRA as it now exists be consistent with your reading of it legally?

Mr. Dach. I think it is our legal feeling—I guess Mr. Kaufman mentioned it this morning—that the act as written allows them to take actions against the owners or operators of disposal sites.

Mr. LaFalce. There you are talking about cease and desist orders. You are not really talking about reclamation, are you?

Mr. Dach. Well, the language of that section, the imminent hazard section—I don't remember the exact quote—any other action which may be appropriate. There seems to be some leeway there to go beyond the cease and desist order to ask for a cleanup of the site.

The problem is that they appear to be limited to act against the present owners. So, in the case of Love Canal, the agency felt that it would be unfair to take that action.

Mr. LaFalce. One very last question. It seems to me that your assessment of the real cause of EPA's failure to meet Congress' mandate is mismanagement within EPA.

What do you think Congress should do about that? Do you think it is the individuals at the higher echelons within EPA? Do you think we need to clean house there?

Do you think that maybe Congress, by the multiplicity of legislation, multiplicity of agencies, has contributed to the problem, or created the problem, that maybe even the individuals, whoever they might be, would be unable to cope with the problems?

What is the primary problem for this mismanagement which you state is the real cause for the lack of implementation or lack of promulgation of regulations?

Mr. Dach. These questions are always hard to answer. Our information is based on hearsay and conversations. But it seems to me that the major problem is a failure to recognize the clear congressional intent early enough to pull that into the management process; and that RCRA was allowed to languish without effective oversight to meet that deadline; and that the people who were responsible for making policy decisions didn't do it at an early enough date to allow the rest of the process to be completed on time.

Mr. LaFalce. Thank you.

Mr. Gore. I would like to thank each of you for appearing here today. There is much in your statements that we have not explored. In the interests of time, we are going to proceed to the last

panel of witnesses today. You are now excused with the thanks of the subcommittee.

I would like to call now a panel of representatives from the Environmental Protection Agency.

Mr. Thomas C. Jorling, Assistant Administrator, Office of Water and Waste Management. Mr. Steffan W. Plehn, Deputy Assistant Administrator for Solid Waste. Mr. John P. Lehman, Director, Hazardous Waste Management Division, Office of Solid Waste.

Gentlemen, if you would stand and be sworn.

Please raise your right hand. Do you swear the testimony you are about to give will be the truth, the whole truth, and nothing but the truth, so help you God?

Mr. JORLING. I do.

Mr. PLEHN. I do.

Mr. LEHMAN. I do.

Mr. WARREN. I do.

Mr. GORE. Beginning on this end of the table, your right, would you identify yourselves for the reporter for purposes of the record.

TESTIMONY OF THOMAS C. JORLING, ASSISTANT ADMINISTRATOR, OFFICE OF WATER AND WASTE MANAGEMENT, ENVIRONMENTAL PROTECTION AGENCY; STEFFEN W. PLEHN, DEPUTY ASSISTANT ADMINISTRATOR FOR SOLID WASTE; JOHN P. LEHMAN, DIRECTOR, HAZARDOUS WASTE MANAGEMENT DIVISION, OFFICE OF SOLID WASTE; AND CHARLES WARREN, DIRECTOR, OFFICE OF LEGISLATION

Mr. LEHMAN. John Lehman. I am the Director of the Hazardous Waste Management Division, EPA.

Mr. JORLING. Tom Jorling, Mr. Chairman, the Assistant Administrator.

Mr. PLEHN. I am Steffen Plehn, head of the Office of Solid Waste.

Mr. WARREN. Charles Warren, Director of the Office of Legislation.

Mr. GORE. Mr. Jorling, I believe you have a prepared statement. Without objection it will be entered into the record. [see p. 414]. Please proceed to read or summarize it as you see fit.

Mr. JORLING. Mr. Chairman, in the nature of this proceeding, I think it would be appropriate for me to submit it for the record, make a few introductory comments, and then proceed to the many questions which you and other members have with regard to the hazardous waste program in EPA and other matters.

Mr. JORLING. Speaking first to the hearing, I think you are to be commended and the committee is to be commended for this proceeding.

There have been many charges and criticisms that have been directed at EPA, specifically at the program I am charged to administer. I accept the responsibility and I hope we can, during this period, respond as best we can and if necessary submit further information for the record, but at the same time not appear to be too defensive in the questioning that we are about to receive.

One of the problems I have as a manager in an agency like this is to continually remind people that EPA is not an institution independent of the people in it. None of us can listen to the hardship and suffering that are represented by many of these

cases, including that which Mr. and Mrs. Sterling have identified, and not be upset. So we do welcome this scrutiny. And I think it is very useful for employees of the agency to testify and speak their mind on where they think we are successful or inadequate.

I also think a great deal of credit goes to the correspondence of Mr. Desmond and Mr. Lynch and several others who have covered this issue primarily in the field, and hopefully their persistence and efforts will begin to generate some of the national coverage that we think this issue deserves.

I think it is clear that the environmental issues have not retracted or withdrawn; they are still here. The media, however, has not been covering them with the intensity they were covered a few years ago.

I think, Mr. Chairman, we are an open agency, and the fact that every document that is typed inside of our institution is received by many parties long before any of the policymakers ever know of its existence is a credit to that openness.

There is nothing in our activity that is very long immune from scrutiny. We think we are a responsive agency.

With that, I think the best use of your time and our time would be to proceed directly to the questions that have been raised. And I would, rather than anticipate those questions, simply await your questions.

[Testimony resumes on p. 425.]

[Mr. Jorling's prepared statement follows:]

STATEMENT OF
HONORABLE THOMAS C. JORLING
ASSISTANT ADMINISTRATOR FOR
WATER AND WASTE MANAGEMENT
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
HOUSE OF REPRESENTATIVES
OCTOBER 30, 1978

Mr. Chairman and Members of the Subcommittee:

I am Thomas C. Jorling, Assistant Administrator for the Office of Water and Waste Management. With me today are Steffen W. Plehn, Deputy Assistant Administrator for Solid Waste of the Environmental Protection Agency, and Mr. John P. Lehman, Director of the Hazardous Waste Management Division of the Office of Solid Waste. We are here today to discuss the management of hazardous waste.

EPA has been actively involved in the area of hazardous waste management for a number of years. The Agency first proposed legislation for hazardous waste regulation in 1973, and followed this with legislative proposals for hazardous waste control in 1974 and 1975. In the fall of 1976, with the passage of the Resource Conservation and Recovery Act, our efforts to implement a comprehensive program began.

The events of the last six months--in particular the tragedy of Love Canal--have brought the hazardous waste problem forcefully before the public. It is now clear to everyone that hazardous waste represents one of the most serious and

difficult environmental problems, one which will require the best efforts of all levels of government, of industry, and of the public to solve.

Subtitle C of RCRA provides for a program to manage hazardous waste from their generation to their disposal. Subtitle C contemplates the establishment of national standards to assure uniformity for hazardous waste management practices across State lines, and then the development of strong State hazardous waste management programs consistent with those national regulations. The Act establishes April 1978 as the deadline for issuing Subtitle C regulations on the hazardous waste control program. This is followed by a two-year period during which State governments may gain full authorization to administer State programs in lieu of the Federal program. RCRA also provides authority for the Federal government to regulate the management of hazardous waste in a State if that State chooses not to do so.

There are seven specific hazardous waste regulations. Some of these have been proposed, while others are in preparation. We have proposed regulations for Section 3003, Standards Applicable to Transporters of Hazardous Waste; Section 3006, Authorized State Hazardous Waste Programs; and Section 3010, Preliminary Notification. The regulations for Section 3001, Identification and Listing of Hazardous Waste; Section 3002,

Standards Applicable to Generators of Hazardous Waste; Section 3004, Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; and Section 3005, Permits for Treatment, Storage, or Disposal of Hazardous Waste, are still under development.

Because we have been unable to meet the deadlines specified in the Act, we are currently under litigation in the Federal Courts. I am aware that Congress intended for the Agency to address the problem of solid and hazardous waste as expeditiously as possible. As one previously associated with the U.S. Congress, as a staff member of the Senate Public Works Committee, I take a dim view of dilatory actions or unnecessarily broad interpretations of Congressional intent on the part of the Executive Branch. I also can assure you that I share your deep concern about the need to get the regulatory equipment in place for dealing with the growing problem of hazardous waste. After over a year of experience with the administration of the statute I am convinced that the Agency is moving with all dispatch that is prudently possible given the substantive requirements of the Act and the need for rigorous compliance with administrative and legal procedures in the rulemaking process.

The Agency is constrained by the rulemaking procedures required by the Administrative Procedure Act. Also, the

precedent of Federal case law requires that the data and reasoning used in a proposed regulation be sufficient to give the public, and in particular the potentially regulated community, the opportunity for a meaningful comment period. The Agency also is concerned that if it does not take sufficient care to develop regulations which will withstand judicial review, the regulatory program governing solid and hazardous waste may be postponed much longer than necessary. If a large number of rulemaking actions under RCRA are the subject of extended litigation and later are remanded, implementation of the system for hazardous waste management, with which the Congress was most concerned, will be thwarted.

In fulfilling its mandates under RCRA, the Agency has had to confront a variety of technical problems that have never before been addressed. A few of the States do have good programs for controlling hazardous waste, but most of them use a list of substances rather than testable characteristics for identifying hazardous wastes. Therefore, the Agency is operating at the outer limit of the state-of-the-art in this area. The available tests for measuring characteristics of materials were designed to be used on pure substances rather than wastes, and, as a result, the Agency has and is conducting extensive research to try to develop tests which can be used economically on wastes. Also, no other program administered

by EPA has ever had to try to establish financial responsibility requirements to be imposed on private industry as required in Section 3004; this is a totally new concept for EPA. Setting design and performance standards for hazardous waste disposal sites designed to ensure protection of human health and the environment also has required the Agency constantly to be working on the latest state-of-the-art technology.

In addition to the technical problems which have arisen, and partly because of them, the Agency has sought extensive public participation in its regulation development under RCRA. The Act itself (§7004(b)) provides that the Administrator and the States shall provide for, encourage and assist public participation in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program under the Act. Thus, because of both the mandate in the Act and the scarcity of existing data on how to identify hazardous wastes and how to best handle solid and hazardous waste, EPA has tried to conduct its rulemaking in as open and participatory a way as possible. The Agency has sought to obtain information from industry, private citizens, and the States. To do this, we have held 86 public meetings and hearings in the past 20 months, as well as numerous meetings with State government representatives.

We have undertaken particularly extensive coordination with the States as both the Act and the Agency contemplate

that the States will carry out the Subtitle C hazardous waste program. Research on what State legislative authority exists to address the issues covered in RCRA, on what solid waste practices exist in the States, and on what minimum Federal requirements must be promulgated to ensure that State programs will be "equivalent" and "consistent" with Federal guidelines have all been time-consuming.

Development of RCRA regulations has required extensive coordination with other Federal agencies as well. Section 3003, for example, provides that we must consult with the Secretary of Transportation before promulgating standards applicable to transporters of hazardous waste. The Department of the Interior is another agency with which coordination (in the regulation of various mining wastes) and consultation (on the critical habitats of endangered species) has been necessary.

RCRA also overlaps with other EPA programs and we are allowed to apply RCRA to subjects covered in other named acts only insofar as coverage is not inconsistent with the other acts. Section 1006(b) of RCRA requires integration of the administration and enforcement of RCRA to the maximum extent possible with all acts granting regulatory authority to the Administrator. Such integration takes a great deal of time and manpower, but it is extremely important. Not only is the statute extremely complex, but it impacts on

virtually all other regulatory programs. Designing the hazardous waste program has required extensive interfacing with our EPA programs that focus on surface water protection, drinking water protection, ocean dumping control, pesticide disposal, hazardous air pollutant control, and anticipated toxic substances regulations. We believe that this process of interfacing, while costly in time, will lead to the development of more technically sound, legally defensible regulations. This process will also be protective of the environment in the most economically feasible manner, through such measures as permit integration.

Finally, in implementing RCRA, EPA must also comply with other applicable statutes and executive orders, including the Endangered Species Act, E.O. 11990 (Protection of Wetlands), E.O. 11998 (Preservation of Floodplains), E.O. 12044 (Preparation of regulatory analyses). Once again, while assuring compliance with these requirements is likely to yield more environmentally sound and legally defensible regulations, it is also extremely time-consuming and resource intensive.

The regulatory structure mandated by RCRA is future oriented. RCRA is principally designed and intended to regulate existing and future hazardous waste disposal activities. The principal regulatory sanction available under RCRA is to prevent owners and operators from receiving and disposing of

hazardous wastes if they do not meet requirements or hold permits. Recently, however, three issues regarding past and present hazardous waste management have emerged. These issues are illustrated by cases from across the nation.

The first issue is present instances of improper management of hazardous wastes. In Seymour, Indiana, a site containing thousands of leaking barrels is under court order to clean up. In Akron, Ohio, another site has been ordered by the State EPA to remove, dispose, or store all liquid waste in accordance with a State approved plan. In New Jersey, Rhode Island, North Carolina, and Connecticut a number of serious incidents of illicit or improper dumping have been discovered. Many other instances will undoubtedly be uncovered over the coming months.

EPA and the States are attempting to deal with this problem to the extent that available authorities and resources allow. Many States have legal authority to deal with certain problems, and EPA has sought to work with and support their efforts. Section 7003 of RCRA authorizes EPA to seek injunctive relief to stop improper waste handling, and our Regional Offices have taken initial action to use this authority in several instances of improper disposal which were subsequently remedied by State action. This is consistent with our belief that States should have primary enforcement responsibility

whenever practicable. Unfortunately, midnight dumpers are extremely difficult to apprehend and prosecute; full control of this problem is not practicable without a manifest system, which some States operate now.

The second issue is the problem of abandoned sites, of which Love Canal is the most tragic so far uncovered. At Love Canal chemical wastes disposed of in the mid-1950's were carried upwards by a rising water table and contaminated the basements and yards of many homes. The potential for illness and birth defects led the New York Department of Health to declare a health emergency and evacuate small children and expectant mothers from the area.

RCRA is not well suited to remedying the effects of past disposal practices which were unsound. We believe that Section 7003 authorizes us to take enforcement action against the owner of an inactive site if the site is presenting an imminent and substantial danger to human health or the environment. Hence, we can effectively exercise this authority where the present owner is in some way responsible for the imminent hazard and is financially and otherwise able to remedy it. However, where these two circumstances are not present 7003 is not an effective tool.

We have limited data on abandoned sites and the magnitude of their potential environmental impact or corrective cost. We are currently improving our data base, and have asked our

Regional Offices to supply us with descriptive information on all problem sites which they know about. While this study is not yet complete, we are submitting some sample descriptions for the record.

Because of the difficulties of effectively dealing with abandoned sites through existing regulatory or judicial mechanisms, the Administration has established a task force to develop a policy on the issue of corrective action for abandoned sites. The task force is under the leadership of OMB, and EPA is a principal participant. We would expect that the Congress will also want to focus on this problem area.

EPA is encouraging States to use some of their grant funds under RCRA to conduct surveys to identify problem disposal sites. Several States, including New York, Massachusetts, New Jersey, and Michigan, have begun such an effort. New York and Massachusetts have appropriated funds to begin remedial action at Love Canal and Lowell, Massachusetts.

Financing remedial actions is clealy the central problem in dealing with abandoned sites. The average cost of remedial actions could easily be several million dollars per site. If, over the next several years, some type of corrective action would be required for a large number of abandoned sites, the cost would be substantial.

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The third issue concerns the siting of hazardous waste facilities. At Wilsonville, Illinois, and at other points across the nation, sites presently permitted by State agencies are facing suits by local citizens seeking their closure. In addition, new hazardous waste treatment and disposal facilities face strong public opposition in most cases. This is a matter of extreme concern, for we require additional sites not only for the safe management of wastes currently produced but also to permit the effective correction of those abandoned sites which require exhumation.

The siting issue is probably the most difficult problem requiring solution for our nation to develop a safe system for managing hazardous wastes. These wastes are being created every day. Our people are understandably afraid of hazardous wastes, but we cannot let that fear blind us to the need for sites at which to manage them properly.

In conclusion, let me emphasize that EPA is working to put the hazardous waste regulatory program in place as expeditiously as the considerations I have described will allow. I would welcome any questions the members of the Subcommittee may have.

Mr. GORE. Well, I would certainly thank you for the tone of your remarks. It is certainly a welcome attitude among officials.

Is it your policy to keep the assessment program from identifying imminent hazards?

Mr. JORLING. No; it is not our policy to keep the agency from identifying hazards associated with improper disposal of waste. What often happens, I believe, in an agency is that signals issued from a single voice are often interpreted by the many voices that we speak to differently.

We have placed very high priority on two things in the hazardous waste program. The first of those is to generate the regulations as quickly as we can. The second is to respond to emergencies as they arise. In an effort to improve our ability to do both, we have directed the Office of Solid Waste, Division of Hazardous Waste Management, to focus primarily on the generation of these regulations. It is an extremely ambitious effort. The record to date includes 20 linear feet of documents. So that is the effort there.

We have, in effect, then, transferred from that office the assessment and response to imminent hazards to the Office of Enforcement, which we think is a more effective use of our limited resources within the agency. So that the focus of the response mechanisms has shifted from the Office of Solid Waste to the Office of Enforcement, both in headquarters and in the regions. We think that will prove to allow more rapid response to these situations as they are disclosed, and utilize the enforcement resources so that more effective abatement actions than can be required or reached than through the Office of Solid Waste.

Mr. GORE. Well, you are telling us in a nutshell that it is not your policy to keep them from identifying imminent hazards. Yet the memorandum introduced into the record earlier, dated June 16, and perhaps this is best addressed to you, Mr. Plehn—if the staff would provide Mr. Plehn a copy of that.

Mr. PLEHN. I have that, Mr. Chairman.

Mr. GORE. Fine. It says:

> Until we have a chance to discuss this further, please have Bill and Hugh put a hold on all imminent hazard efforts. Work on Subtitle C Regulations and on our ADP system has higher priority at this time. Put a hold on all imminent hazard efforts.

Mr. JORLING. Mr. Chairman, that is within the context of the Office of Solid Waste. What we are attempting to do is repair a serious situation, and one which I plead responsibility for, but one which plagues an office like ours, and that is that we speak with many voices through many arms. We had conflicting activities going on within the Office of Solid Waste and within the Office of Enforcement, a conflict which, when taken out through 10 regions, became even more complicated.

What we were trying to do is establish and confine the areas of activity within those two sets of resources in the agency so we could get things done without hassling among ourselves.

So that that memo that you read from is a description of the activities within the Office of Solid Waste, not within EPA.

Mr. PLEHN. Mr. Chairman, I would like to read a memorandum which I signed on May 15, directed to John Lehman, the Division Director of the Hazardous Waste Management Division. And it

summarizes some discussions which we had had early in the month of May with our counterparts in the Office of Enforcement.

The memorandum says:

> At our meeting with Dick Wilson (and Dick Wilson is the Deputy Assistant Administrator for Air and Hazardous Material Enforcement) and Gus Conroy (he is a Division Director in that organization) of the Office of Enforcement last Wednesday, we agreed that our procedures for handling imminent hazards situations should be altered to follow standard EPA practice for handling imminent hazard situations. The Office of Enforcement is presently drafting guidance to the regional offices to reflect our agreement that the Office of Enforcement will have lead responsibility for imminent hazard situations both at headquarters and in the regions. The Office of Solid Waste will serve primarily as a source of technical expertise in supporting the Office of Enforcement. Once Enforcement's draft guidance is received, we will have an opportunity to work out the details regarding our respective roles in these situations. In the meantime, any imminent hazard information which may be brought to your attention should be passed to Dick Wilson.

Mr. GORE. Well, that sounds good. But the document that was the result of that memorandum has already been introduced into the record, dated October 10, and it does not say to seek out these sites. The existing policy remains don't look for them.

Mr. JORLING. Mr. Chairman, that is a characterization that has been made. To the extent that the directions we have given are subject to that interpretation, we will act to clarify them, so that that is not the message that is received.

Mr. GORE. I am glad to hear that.

Mr. JORLING. We have established in that document two priority items, one of which is the regulations. The other one is taking actions to abate an emergency. And that continues to be our effort.

I know our management has been attacked, and I am sure somewhat accurately, as malfeasant. But the fact remains we have to look at the resources we have and attempt to identify who can best do what.

We have received an additional $15 million in fiscal 1979 for grants to the States. And what we are attempting to do is utilize that resource to attempt to develop information regarding these sites, both active and inactive, through the use of that additional resource, the $15 million in grants to States.

We do not have any resources in any substantial number to shift into the activity that would be necessary to do this on a national basis from the Federal level.

Mr. GORE. Why don't you just ask them what is in the files?

Mr. JORLING. We have, sir.

Mr. GORE. Well, we asked for that information and in this document dated October 2——

Mr. JORLING. The document you are referring to I believe——

Mr. GORE. "Information Needed on Disposal Sites Where Hazardous Waste Threatens Public Health."

And I quote. You caution the people in the regions that:

> The information will be shared with Congress and probably will be requested and made available to the public. Because of this, incidents included in the inventory should be situations for which you have more than circumstantial information, the public at least locally is already aware and publicly accessible information is already on file.

Now, doesn't that limit rather severely the number of sites that you are going to find?

Mr. JORLING. Yes; it does. And that was clearly the intention. If you will notice in that memorandum we asked for a response date—the memorandum was dated October 2—by October 23. So what we wanted was the hardest data that was available within our offices and in the State offices. We did not want speculative data, we did not want allegations. We wanted information on which public policy decisions could be based.

Mr. GORE. Let's look at that response within the context of the Toone, Tenn., case. You would characterize that, at least at this point in time, as purely speculative.

Mr. JORLING. No, sir.

Mr. GORE. Well, the response that Mr. Kaufman got was that there is no link that has been established between the waste disposal site and the wells, it is just speculative.

Mr. JORLING. I think that our behavior in this instance is deserving of criticism. Part of the response that Mr. Kaufman got from the regional offices was attributable to the fact that the region had initiated an imminent and substantial action against Velsicol under section 504 of the Clean Water Act, and that that action was pending in the court at that time, and that they did not want to take any action which jeopardized that case.

As it turns out, I might add, Mr. Chairman, that action was dismissed by the court at least with respect to imminent and substantial endangerment.

Mr. GORE. That action was in Memphis and did not relate to Hardeman County.

Mr. JORLING. That is correct.

Mr. GORE. Velsicol is the same company that was involved in the PCB decision, an incredible decision just handed down. It is the same company involved with Tris. I mean if you are going to suspend scrutiny of this company because you have one action pending over here and you don't want to take the possibility of upsetting another action in another arena, it doesn't seem to be a reasonable way to proceed.

Mr. JORLING. As I say our behavior, especially with respect to the citizens who were affected, whose drinking water was affected, is deserving of criticism. I am only stating that the Office of Enforcement, in the judgment of their lawyers prosecuting this case—and, I might add, two others against that corporation—concluded that it had actions under way and investigations under way of the Velsicol situation, the entire gamut of information regarding all of their practices; that they thought it was inappropriate to proceed through another pathway independent of those cases.

As I said, however, Mr. Chairman, in that case specifically, the court handed down a decision that we did not meet the burden necessary to justify the use of imminent and substantial injunctive power, and he did so against the evidence that we presented that there were acute illnesses among the workers in the publicly owned treatment system of the treatment plant in Memphis.

But in any event, I am only explaining what the response that was given to Mr. Kaufman was motivated by. Whether or not it was the proper response, we can look back and make determinations of criticism or of error.

But with respect to the specific situation, it was as I have said.

Mr. GORE. Well, I might recall for you the testimony from the Sterlings. When they contacted Region 4, they were told that the case was a low priority. So, somehow the message got down.

Understand, our purpose here is not simply to criticize you. What we want to do is to try to get a solution for this extremely serious problem. And it concerns me that we have got thousands of these dump sites that are cancer cesspools. I really believe that is an accurate description of them. They are all over this country. And the people within the EPA have been given the impression from higher up that they are not to look into it, because the problem is so big that if you really focus on it, it is going to eat up too much, too many of your resources, and you cannot face up to the magnitude of the problem.

Mr. JORLING. I think you and I share exactly the same motivation in these hearings, and in what it is we are trying to achieve with implementation of the statute. I hope we will respond in a way that assists that.

I do not want to act defensive or try to give improper explanations for our behavior.

Mr. GORE. Let me read to you the response—we are talking about the requests that went out to the regions for information on disposal sites. Just to give you a flavor of how it was understood within the regions. This is a response from Region 10. They respond, and I quote:

> An estimate of the number of sites which may contain significant quantities of hazardous waste which could create a significant threat to public health is a subset of Question 1. Our best rough estimate would be about 250. Again, we cannot substantiate this figure from data in our files.

That is suggestive of the number of sites that we are talking about, within one region. How many regions do you have?

Mr. JORLING. Ten.

Mr. GORE. You have 10 regions. One of the regions responded to you by saying that there are 250 sites with significant quantities of hazardous waste which could create significant threat to public health. Now, shouldn't that be vigorously pursued?

Mr. JORLING. I think we are attempting to vigorously pursue it. Let me just describe to you the kind of circumstances we have to deal with.

In the President's budget, the last budget submitted in the Nixon administration, there was identified a need for eight people in our 10 regions to handle hazardous wastes. With the beginning of the Carter administration, a reprograming or readjustment of that budget occurred. That reprograming is very difficult in the stage at which that budget was transmitted, namely, immediately before the President transmits it, after the year of staff work had been done. That number was increased to 21. So that we now have in the regions 21 people. That is fiscal 1978.

When we move into fiscal 1979, we are increasing the number of people in the regions in hazardous waste further from 21 to 56, an increase of 35 people.

These are the kinds of resources that are going to be necessary to do the kind of work that you suggest should be done aggressively.

Again, we are also attempting to manage the program to attempt to get more out of the States than we are presently getting out of

the States through this $15 million grant program. That program, I might add, is going from a base of zero in 1977 to $15 million in 1979.

So that we are attempting to bring resources to bear on this question.

But I must say I share your frustration at the length of time it takes to make reallocations of resources.

Mr. GORE. Well, let's look at the difference between what Congress has authorized and what you have requested.

In fiscal year 1978 Congress authorized $181 million for the solid waste program. EPA requested $36.5 million for fiscal year 1979. Congress authorized $160 million of which EPA only requested $61 million. So you have asked for less than one-third of what the Congress anticipated, after lengthy and rigorous hearings, would be necessary for this program to operate.

Now, are those figures correct?

Mr. JORLING. I have no reason to question your figures.

Mr. GORE. The budget request for RCRA for fiscal year 1978 was about $17 million. Is that correct?

Mr. JORLING. In the fiscal 1978 request, that was $36 million, for all functions. That includes R. & D., abatement control, Office of Enforcement. But let me see if I can respond, because the question you raise is not limited to RCRA and our intention to implement it.

The figure you have given is that we requested approximately a third of the budget authority that RCRA gives. I suggest that is within 1 or 2 percentage points of the record we make on all of our statutes; all of them are being implemented at a much lower resource base than was authorized by Congress.

I may also say in response, more directly, that the RCRA program, the hazardous waste program, along with the safe drinking water program, and the Office of Toxic Substances, the Toxic Substances Control Act, are the three areas of growth within the Agency, and they are growing at the expense of other very urgent programs.

For instance, we have in effect level funded the noise program. We have reduced dramatically the radiation program. We have reduced dramatically the Clean Water Act program in order to get resources into this program.

Mr. GORE. Well, you know, if that is the case then I would suggest to you that you ought to be asking the Congress for additional resources for efforts like this. It is a matter of public health and safety.

The other programs you mentioned are mature, ongoing programs. This is a program that is in a startup phase. It has requirements that are somewhat different from the others. Yet the requests from EPA have been less, far, far less than what were authorized.

Let me ask about enforcement activities.

But let me make one other point first.

According to EPA's written answers in the budget hearings in March 1977, before the Senate Appropriations Committee, they said: "EPA requested of OMB full funding of all provisions of RCRA." That doesn't appear to be accurate.

Mr. JORLING. That certainly has not been accurate during the period I have served as assistant administrator of the program.

Mr. GORE. How can we exercise effective oversight if we cannot get these kinds of responses?

But let me move to enforcement.

In the budget hearings this year, Mr. Costle stated:

> Quick, fair and effective enforcement is essential to regulatory success. Without it, voluntary compliance will deteriorate and before long break down. Once this process begins, it is very hard to reverse, and it can quickly create an unmanageable workload. As the thin regulatory line bogs down, the incentive to comply with the law diminishes.

Would you agree with that general statement?

Mr. JORLING. Yes, sir.

Mr. GORE. With regard to enforcement activities, don't you anticipate there will be a significant increase of instances where EPA will be called upon to make judgments on the safety of hazardous waste sites?

Mr. JORLING. Let me respond first by a preface.

Our activities that generally follow the enactment of a statute proceed as follows.

There is a peak of headquarters activity in which we attempt to take the statute and write implementing regulations. Following that activity, which runs 2 to 4 years, we then shift resources to the regions for the implementation activity. When there are enforceable requirements placed out there, then resources shift to the Office of Enforcement.

There are generally two kinds of enforcing activities that the agency undertakes. One is permitting activity and the other one is compliance activity.

The third that you have mentioned, imminent and substantial hazard activity, has not, in all honesty, occupied the kind of priority that it has been suggested here it should.

But with respect to enforcement positions, there have been none in the regions in fiscal 1977. Five positions were allocated to Office of Enforcement headquarters staff in fiscal 1978 and their number will increase to eight in 1979.

We expect a major increase in the Office of Enforcement regional staff—18 in fiscal 1979—as these regulations which have been subject to so much controversy are promulgated and enforcement actions are appropriate.

Mr. GORE. Mr. Jorling, when did you first realize that the regulations that have been dicussed here were going to be delayed?

Mr. JORLING. You don't arrive at a feeling or an opinion like that in an instant. Rather you develop a sense in briefings, in activities, reading drafts, what have you, that the effort that lies ahead is still greater than can be performed in the timetable that either the statute or our own management program had set forth.

I would expect that my awareness of these difficulties began immediately after the program shifted to my responsibility in late July of 1977.

Mr. GORE. So you were aware of it at least as early as then.

Mr. JORLING. Yes.

Mr. GORE. Did you inform the Congress at that time that you were behind this schedule?

Mr. JORLING. I cannot remember if the first hearing that I participated in with responsibilities over this program was with the authorizing half of your committee, when we did make the announcement that our regulations were going to be late. My memory says that was sometime in the fall of 1977, but I cannot remember exactly.

Mr. PLEHN. Mr. Chairman, I think that as in the spring of this year, in oversight hearings with Mr. Rooney. And we did at that time, I believe, indicate that the regulations would be late.

Mr. GORE. Approximately 6 months behind schedule.

Mr. PLEHN. Yes, I believe that is correct.

Mr. GORE. Why was Congress not informed until 1 month before the deadline that EPA was behind schedule?

Mr. JORLING. I can only answer that that is an improper performance on our part.

Mr. PLEHN. Mr. Chairman, we had fairly regular briefings with the staff of this committee and the Senate counterpart in which we kept them apprised. And I think fairly early on we indicated to them some of the difficulties we were having in the schedule complying with the deadline as stated in the law.

Mr. GORE. Well, Mr. Jorling, what should we do to warn citizens who may be living near these sites, if there are other Americans in situations similar to the one faced by the Sterlings, who know that there is a dump near their home, who may have heard of the problems we have discussed here today—what would your advice be to them?

Mr. JORLING. I think my advice is to conduct exactly the kind of hearing that you are holding today. There is nothing that attracts attention to these types of situations more than this type of hearing. I can write letters, I can give speeches, I can exhort. But none of those has much influence until these folks [indicating the television cameras] begin to turn themselves on to a situation. And as I said at the outset, the media has not been covering the environmental issues to the extent we would like them to. Those issues have not declined, they have grown in their magnitude and their importance. What we need is scrutiny, and we welcome it.

The other thing that all of us must carry on is very responsible behavior. And that is to be able to perform when we identify different problems.

Now, these problems that we are facing in hazardous waste are of many dimensions.

If we talk about current activities, the kinds of things, the practices that are on-going now, the things that were anticipated by the regulatory framework of RCRA, I think we have in place a set of authority that our agency needs to implement it along with the States.

But I think as far as new authority in this area is concerned, we don't need it. We need to implement what we have.

With respect to some of the other dimensions of the problem, for the moment let's focus on the abandoned sites. That area is a much more difficult one to contend with. It is much more difficult because of the normal pattern that we have observed that there are simply no resources available in any magnitude to resolve the problem once it is identified.

I should add that not even the most sophisticated large public utility serving drinking water to its citizens had prior to 1½ years ago ever sampled its water for organic contaminants. We are trying to change that.

Mr. GORE. Let me rephrase the question, if I can.

I don't think it is just public drinking water facilities that are under discussion here. I mean the way to inventory this, and the way to get a handle on it, seems to me is by focusing on the dump sites themselves, because in some cases, like the situation in Toone, Tenn., the problem manifested itself in the drinking water. In other cases the gas came up through the ground and entered into people's homes. At Love Canal it entered through the basements of the homes. In other cases you have, for example in Iowa, the million cubic yards of arsenic stored in a flood plain. Any idiot knows that sooner or later that river is going to flood.

And the problem is in the dump sites.

Now, I guess what I am asking you is doesn't it make sense for EPA to give an extremely high priority to producing an accurate inventory of these hazardous waste dump sites, and then getting some warning to the people who may be threatened by those sites?

Mr. JORLING. I think what you stated is in fact necessary, and it is of high priority.

We have three programs under way at the present time, at least three—staff can correct me if there are additional ones—in which we are attempting to systematically review the landscape and determine what is the composition, what is the magnitude, and what is the condition of these types of sites. We have one under the authority of the Safe Drinking Water Act which is referred to as the pit, pond and lagoon study. We have put $5 million into that survey. We have, as I mentioned, the efforts under the hazardous waste grants under RCRA, as an effort to further generate accurate information on these activities, or past activities. And the third is the activity under the other part of RCRA, namely subtitle D, which refers to the open dump inventory. That activity, for instance, I think is constructive. The open dump inventory is looked upon by many as simply going out, making a horseback survey of what the landscape looks like, bringing it back and writing a list. But that is not sufficient.

Congress anticipated that that task be done in 2 years. We are finding that it is much more elaborate, much more difficult to make judgments as to what the character of those land-fill practices either were or are for determination of what are the regulatory consequences.

We are now projecting a 5-year requirement for the completion of that activity. We need to do more. We are attempting to do more. Even developing the methodology for reviewing these type sites is difficult. Whether or not you can develop a standard methodology is simply not known. We do need better cooperation of industry. We think there is some sign that at least the basic chemical manufacturers are beginning to address this situation on their own, but without that there is nothing we can do short of a survey of every square inch of the country to find out where these ancient practices were conducted and what their consequences are.

We are in effect, and we should create a set of expectations in the public that they deserve to have such problems responded to.

But I can tell you that we do not have the authority in that area. Nor do we have the resources.

As part of our effort in the spring we will be generating legislative proposals in part addressed at this question, primarily the resource base.

But if I calculated all of the demands that have been placed on me and my program for remedies to these kinds of situations, it is a very large number, if you take into consideration the hazardous waste land fill situation, what we refer to as in-place pollutant loadings, like the Kepone in the James River, the PCB's in the Hudson River, and any other areas of aquatic environment which are similarly contaminated. The figures are staggering. And we have to be able to respond when the people demand those remedies. We are not there yet.

Mr. GORE. Well, you know, the Sterlings first contacted EPA in November of 1977. They continued to drink the water for many, many months after EPA was contacted. There may be thousand of people in this country who are in circumstances very similar to those the Sterlings were in. Shouldn't they be warned? Shouldn't they be told if they are subject to this hazard?

Mr. JORLING. Mr. Chairman, I think so. I share with you the extreme frustration that we are not responding as governmental institutions as effectively as we should.

I look at Mr. and Mrs. Sterling's case study and I have the same—when I wear my citizen hat—the same response they have; why were they not assisted earlier. In the end I could give a defensive response. I think our region has done things for which it can be criticized. But by the same token, it was the region that has pushed this to the point it has, over public health officials at both the State and local level.

And I say to myself, how come we don't get better performance out of all levels of government.

Those same public health officials, I might add, Mr. Chairman, are opposing our drinking water regulations on organic substances generally.

So that I find myself somewhat frustrated by the attitude and approach of lower levels of government which I would hope would be more directly responsive to the people that are closer to them.

Mr. GORE. I am not sure that is an accurate characterization of EPA's role in this specific case. But I don't want to focus on that. And I don't want to focus on criticism of what as done in the Sterlings' case.

What I am asking is what about all of the other Americans who are right now drinking water that poses a threat. Shouldn't they be warned?

Mr. JORLING. Under a different authority, which I am also responsible for, we are attempting to put regulations of that order into place. I might add that one of the difficulties with legal authority here is that individually owned wells are not within the mandate of the Safe Drinking Water Act. For those wells that are, we have established regulations which require frequent monitoring for contaminants in those drinking water supplies.

Mr. GORE. Do you think, for starters, the person within EPA who has primary responsibility for this ought to have a budget?

Mr. JORLING. As I mentioned before, we have shifted the primary responsibility to the Office of Enforcement. I think that is where it appropriately lies. We hope we will turn all of our attention in the Hazardous Wastes Division to getting the regulations out.

Mr. GORE. I think there are things EPA can do short of mapping every square inch of the country. I think that the information within the files in the regional offices is a good place to begin. We asked for that information in preparation for this hearing and were told it did not exist or it had not been compiled. I hope that in the wake of these hearings EPA will pursue a much more vigorous policy with respect to imminent hazards.

Mr. JORLING. The only answer I can give to that is to ask you to watch our performance in the coming months.

Mr. GORE. Excellent. I hope we see that performance.

Mr. NOWAK.

Mr. NOWAK. Thank you, Mr. Chairman.

Others will be watching EPA's performance in the next several months, especially after today.

Mr. JORLING. If I may interject for the moment, this is somewhat ironically, a very refreshing hearing because it is one of the few times in my tenure in this job where I have been before members of Congress and they have been asking me to speed up and not to slow down.

Mr. NOWAK. That has been an occasional demand that we receive also, but in this particular instance I am sure with the advent of the Love Canal you, as a real leader in this field, can well understand the apprehension of many Americans concerning their own situations and realizing that there are dumps that have been used for years and years, many abandoned. They are worried about not only what is contained in the dump but certainly about what could possibly happen if that dump is attempted to be removed. We have not only the toxic situation but another situation in New York where stored radioactive materials are stored in the West Valley. I think it is an area in which too little has been done and perhaps too late, but at least we are at the stage now where everybody is starting to realize the importance and the significance of the entire issue.

Mr. Jorling, you have made a statement, and statements were made earlier, about a timetable for trying to get these regulations out. I can appreciate the manpower problem and perhaps the priority problem that you have had over there in looking at this aspect of the environmental program. I think many would feel very good about it if you would focus on the area in terms of not only the dollars which may be required for total involvement but also people that may be involved. I just have a feeling that there are not enough experts in the field that are sitting around doing enough in the area; that you will have to develop that expertise if you are going to tackle this problem in all its dimensions, and I am sure you are going to find Congress more attuned to doing just that when the severity of this problem is publicized throughout the nation.

One problem that bothers me in particular is the inactive site situation. I wonder if you have been able to give any thought to further legislation that may be wise to have on the books so you can look at possibly supplementing RCRA to deal with this problem. It would seem we do not really have a solution to it with those abandoned by corporations many years ago.

Mr. JORLING. I think, Congressman, that the Congress will have to address this and they will have to address it primarily in the direction of developing a resource base that provides the tools necessary to in fact provide the remedy. There are, however, some associated important legal authorities that will likely have to be extended as well. But with respect to the linchpin issue, it is resources. As you are familiar in the Love Canal situation, we have participated with the State of New York in attempting to make available a limited resource base to address that question, but that amount is going to be somewhere in the neighborhood of $6 million Federal contribution and 50 percent match from the State of New York for $4 million of that, so a total of approximately $10 million for a problem which conservative estimates show, if we were to repair it properly, would cost $30 million to $55 million.

The State of New York is having a great deal of difficulty coming up with $4 million, which is not an insignificant item in the budget of the State of New York. So that resource is necessary. The State of New York has asked under the consent decree with General Electric on the PCB discharges—a million-dollar study generated a $240 million need to excavate and remove the PCB sediments in the Hudson River. They are now coming forward with a scaled-down version to get approximately 80 percent of the inplace PCB's. The cost—$30 million. The cost on the James River is in excess of many billions of dollars, so that every time we look at these situations we see very large resource demands. The case in Iowa was mentioned earlier. The case in Iowa, a corporation, has something on the order of $5 million worth of assets, and has what our study copy shows to be a $35 million liability, so that we have to develop a mechanism and that mechanism should, in my judgment, attempt to transfer these costs back onto the managers of these materials rather than on the General Treasury. But it is that area that I think is going to need very early attention from the Congress and it is one we will be making recommendations on in the spring, and it converges on several other types of liability programs, superfund in oil being an important example.

Mr. NOWAK. I think you have to be concerned about the timetable on these regulations. I am sure you were here when the testimony was given regarding condensing of the schedule at least 6 or 7 months. Mr. Wolff from the State of Illinois Attorney General's office said if that could be done, we would be able to bring States into the whole procedure a lot quicker because the regulations would be out there for their use. We can go through the various areas of shortening that time, and I wonder if you have been able to take another look at the schedule as it was proposed by your office to do just that?

Mr. JORLING. One of the more frustrating aspects of my job has been the almost daily learning of the dimensions of the task required in getting a work output accomplished, and certainly that is

the case in this area. Our rulemaking processes within the agency usually on important regulations usually run 4 years. I think that is an unacceptable situation.

With respect to the hazardous waste regulations specifically, we have now entered into a litigation posture with the State of Illinois and environmental groups—and nine intervenors—and what that basically says is that we looked at the schedule and made a judgment that bringing it within any earlier time frame was not good public policy. That was a very difficult thing for me to do. I attempted to expedite the process, especially those parts within my control, to the extent that I could.

I don't think the situation regarding the regulations, however, is as bleak as the dates themselves suggest. We will be going out with a proposed rulemaking in January. That proposed rulemaking will have effect, not simply in that it will generate the hundreds and thousands of comments on, but because it will have effect on the type of program that we expect will be the program promulgated. While we are always free and should be expected to be free to change things as a result of rulemaking, many of the technical considerations, many of the assumptions, all of those things will be known to the regulated public and to the States.

They will begin to make the judgments to get the hazardous waste program moving. So that period of comment will be fine tuning and to make the regulation itself effective, but our resources and the State resources will be able to be extended for very productive purposes during that period as a result of making the public aware of what our preliminary judgment is of a good site.

One of the things that holds us back in taking actions against existing practices is that we do not have the ability right now to show what we think is a good practice. As of January when we publish the proposed rules, we will be able to demonstrate to a judge what we think is a good practice.

Mr. NOWAK. Those proposed rules will most likely, except for some perhaps limited changes, be what the final regulations are. There are not going to be material or substantial changes all the way down the line in those regulations. Just the 7 months that are required for the high-level EPA review, couldn't that be cut down to 2 or 3 months? I am sure everybody in the agencies, if they weren't aware prior to the last few months of these regulations, are certainly aware of them today.

You have focused the problem throughout the agency in this area, and I just can't believe we couldn't move that period, if none of the others, up several months.

Mr. JORLING. We will continue to drive the process as fast as possible, but let me suggest why these procedures now exist. You look back to the Clean Water Act and its major amendments in 1972 and look at the agency's rulemaking activities under that. You realize it wasn't until 4 months before the 1977 deadline the Supreme Court ruled on the major organic structure of our regulations. Part of that was because we left ourselves vulnerable to charges in the courts—and I might add in the water program alone we have 70 cases pending in the courts of appeal challenging our regulations—it's best for the public if the regulations go on the street as defensible as we can make them.

Therefore, we have developed these procedures to bring to bear the expertise within the agency and outside the agency so that the technical analysis, the economic analysis, all of the assumptions are as strong as we can make them so when they do go forward they have effect immediately and they don't get thrown into the quandary that, as Mr. LaFalce mentioned, the 311 program was thrown into by an injunction after the regulations were promulgated. We want this program to begin working as soon as we can.

Mr. NOWAK. I think everybody joins in that desire, especially those of us who have had particular problems with these active and inactive sites. I am just wondering if we are not building up as time goes on if the States and the people that are now moving chemicals aren't just going to take every advantage they can in their movements and their disposals to get themselves into the best possible posture when final regulations come out, and the longer we delay the bigger and bigger problems we are creating for ourselves down the road.

Mr. JORLING. I think this problem of hazardous wastes, in all of its dimensions both in past practices which have now been abandoned, and in current and the future practices, namely, siting, in going to demand a great deal of the political leadership of this country. This committee is demonstrating that it is willing to participate in that.

I must add, however, I haven't seen it in other political quarters.

Mr. GORE. Mr. LaFalce.

Mr. LAFALCE. Thank you, Mr. Chairman.

Mr. Jorling, I started out as a trial lawyer, and you are in litigation right now with EDF. Basically you are saying January 25, 1980, and I think Mr. Leslie Dach has suggested July 1, 1979. And may I suggest in the best spirit of compromise that you agree to settle on July 1, 1979.

I want to underscore a point that you made, that it is necessary to bring the attention of the media upon the problems of our environment once again, that it is imperative to bring the attention of the Members of Congress upon the problems of our environment once again because, whereas the word environment was unknown in the early 1960's, it became the catchword of the late 1960's, and then with the recession and high unemployment, the concern about the environment was to be antisocietal, to be against jobs, and we must recognize that we must go about improving our economy and improving our environment at one and the same time.

The point you made about the media is very true. Prior to August 2, 1978, there was no attention paid by any media other than the Western New York media to the problems of the Love Canal. We couldn't get any attention by any committee in the Congress to the problems of the Love Canal. On August 2, 1978, it hit the front page of the New York Times, it made NBC, ABC, CBS, and 2 days later, August 4, 1978, when I was in the office of Douglas Costle with Chuck Warren, we were just trying to figure out the best strategy because with the force of the media behind us we knew we would be successful in either the 1978 supplemental appropriations bill before the Senate or the following Monday, August 8, in the fiscal 1979 HUD independent agencies bill.

Mr. Warren, I have to take you and Mr. Costle off the hook a little bit because I remember how hard you and Douglas Costle and I and Senator Moynihan and Senator Javits fought to fund section 504, and it was OMB, not EPA, that said we cannot open this Pandora's box. It was only through our last minute maneuvering we said we have to come up with something, so we came up with an appropriation for section 8001, which was a demonstration project.

So I know where your heart is in EPA and in order for you to do what you want to do you need the backing both of the administration and of the Congress. While we are sitting up here criticizing you, maybe the table should be reversed. I understand that. But we will do all we can to help you as we did on August 4 and August 8.

Mr. JORLING. I appreciate those comments. Let me make two points. One is that public officials respond most effectively when they are scrutinzed, and that is why I appreciate this hearing so much. Second, the tendency when a situation like this occurs is to attack people's motivations. I have to come to the defense of our staff in EPA because it has been a very lucrative time to take shots at civil servants. But my experience within our agency is that the quality of our staff is higher than any other Federal agency. They are a committed staff, they are working harder than anyone, any single group of people, with fewer rewards. They are working extremely hard and I do not want to have these kinds of hearings suggest the agency is not committed or these people are not working hard to get to these objectives. We are. We have made mistakes.

Mr. LAFALCE. I will reserve judgment on most of your statement but I will not reserve judgment at least with respect to your region 2 office.

Mr. WARREN. May I respond one second? I hope I will still have a job after some of the remarks you made. Seriously, I think I ought to point out a problem that affects us very much and I think it affects all environmental regulations quite a bit. That is the current climate regarding Government regulations and inflation. I think this bears on the situation and some of the delays that are inherent in a lot of our regulations. Today concern with inflation has made many throughout the Government give much closer scrutiny to all regulations, and particularly environmental regulations, since the business community says this is the kind of expenditure that is nonproductive. So we have been bombarded from outside the agency and from within the Government with demands for greater scrutiny of our regulations, more economic impact statements and much more analysis of everything we do. This in turn has led to significant delays in getting these regulations out. This in turn has also led us to go into more elaborate procedures for more analysis and more economic studies, and this leads to delay.

I think these regulations along with other regulations are going to be delayed as a result of this, but you have a new trend here of regulatory reform and inflationary impact colliding with environmental protection, and frankly we have been, I think, somewhat on the defensive, and this has added to some of the delays.

Mr. GORE. If the gentleman will yield, are you saying or implying that you received any kind of pressure based on inflationary con-

cerns, or whatever concerns, from OMB or others within the administration to hold up the regulations under discussion here?

Mr. WARREN. No, I am not saying that. I am not referring to that specifically.

Mr. GORE. I wanted to clear up that point.

Mr. WARREN. What I am talking about is the general climate of concern with all regulations, and I think this is a regulation that falls in that category.

Mr. GORE. Have you changed the thrust of the regulations for that reason?

Mr. WARREN. No, not to my knowledge. Mr. Jorling may want to comment.

Mr. GORE. Has the regulation's thrust been changed, Mr. Jorling?

Mr. JORLING. To respond specifically is very difficult. There is in the entire circumstances around this regulation an effort to make sure what we do is directed at those problem areas that need addressing. There is one economic impact that we are at the present time assessing in detail. It deals with financial responsibility requirements on the permanent sites under the regulation. It appears from our economic analysis that the impact of that requirement would be the greatest. This is the requirement that the individual permitted site would have to show various types of financial responsibility through various devices. We are making an assessment as to whether or not the statutory tools which are provided to assure that financial responsibility are the appropriate ones or whether or not there are other devices such as a fee system for a common fund that might better accommodate that liability and not have the economic impact that the statutory device would have on the operator. So in that sense we are looking at the regulations to determine if there are ways that we can achieve the objectives of the statute in more cost-effective ways, specifically in the financial responsibility area.

Mr. GORE. In that context I would just underscore the point made a couple times earlier that the inflationary impact of going back over and trying to clean up these sites far exceeds the impact of imperfect disposal procedures.

You have recommended a couple of changes in the June 12 meeting this year. You told your staff that you wanted certain changes in the regulation. No. 1, don't use characteristics or test procedures to identify hazardous wastes.

[The following memorandum was subsequently placed in the record by the subcommittee.]

38-748 0 - 79 - 29

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: JUL 12 1978

SUBJECT: Hazardous Waste Options

FROM: John P. Lehman, Director
Hazardous Waste Management Division (WH-565) Walter W. Kovalick, Jr. for

TO: Addressees

Attached are the following background materials for the hazardous waste options meeting with Mr. Jorling and Mr. Plehn on July 17 at the Transpoint Building:

1. Agenda
2. Meeting Notes 6/12/78
3. Perspective on Options Development
4. Candidate Options
   - Sec. 3001
   - Sec. 3002
   - Sec. 3004
5. Evaluation of Candidate Options

Addressees: Mr. Jorling
Mr. Plehn
Mr. S. Davis
Mr. Dietrich
Mrs. M. Wright - OGC
Dr. Skinner
Mr. Kovalick
Mr. Lindsey
Mr. Sanjour

Enclosure #2

T. Jorling Meeting Notes June 12, 1978

Plehn
Dietrich
Gregg
Smith
Lehman

To bring "C" regs through:

1) Procedural mechanism
high level review ITF

2) Need to develop options for
3001 & 3004
Scope issues

Pleased that

Staff work was complete--all pieces there
Easier to cut back than add to

To get thru need:

Program that directs itself at very bad practices
Bounds determined by resources @ EPA/States
Deal with known set of problems
Specific guidance to players from outset whether they are in/out
If waste not on list--have to run tests; this probably won't sell: too indefinite, i.e., start program with known set with matching resources
Get good start on off-site facilities and major on-site facilities.
Split out drilling muds--don't take on oil and gas industry at outset, perhaps use different approach.
Split out other biggies too/phase in or give to other agencies.
Convince people we are aiming at worst actors and have resources to do it well.
Leave marginal wastes till later.
Go after high risk materials first--those no one disputes.
Need better financial responsibility option
build up options for trust fund.

Need more EPA resources to develop data base and answer litigation.
Similar program in scope to EGL.
Want a few "big ticket" options--not lots of small ones.
Must be careful to explore all ramifications of various options including impact of facility capacity off-site vs. on-site.
Ways to phase and impacts.

Mr. JORLING. May I respond? Ultimately we will have to defend the final decisions that I and ultimately the administrator make.

With respect to that one, my motivation there is that the formula that was in the draft placed the responsibility entirely on the possessor of the waste to determine that his waste was or was not hazardous in order to come into the program. It created an incentive for the person to stay outside the system. He would litigate, he would question our judgment as to whether or not his tests showed he met it or not. Therefore, we shifted to the direction of listing waste streams so that as soon as these regulations are issued, those who fall subject to them must begin to carry out the practices that the statute requires.

I wanted to leave as little uncertainty between the possessors of the waste and the Government as possible. That is why I think moving in the direction of specific identification of waste streams to be included is the preferred route.

Mr. GORE. Do not regulate the oil and gas industry? Why was that change requested by you?

Mr. JORLING. I have to give you some of the benefit of my thinking, and again all of this is going to be in the public record at an appropriate time.

You can interpret RCRA to include everything, literally everything as hazardous waste, and if we did that or even if we took some subset of everything that is very large, like all of the oil and gas brines and muds, and we did that, we would overwhelm our system and the State system with the paperwork on the manifest system and the permitting systems that are required. If you look at the oil and gas industry, you find that the oil and gas industry is a very intensely regulated industry. It is also an industry in which losses of drilling brines and muds are economically disadvantageous to the driller. He has no benefit if he has a leaky well injecting those materials into strata other than the strata from which he is trying to extract his oil or gas.

So we looked at the number of drilling sites in this country, in excess of a million, and our resources, and that did not seem to be the place where we should devote ourselves and State resources. There were other activities going on that seemed to to take care of risks to the public as a result of the release of that material into ground water. What we wanted to get at are activities which common sense associated with the management of hazardous wastes, namely those organic chemicals and heavy metals that move in barrels.

Mr. GORE. Did you have any contact with others in the administration concerning this recommended change?

Mr. JORLING. No, sir.

Mr. GORE. Avoid regulating other large industries. Why did you recommend that change?

Mr. JORLING. Again, if I could add a caveat which is known within the agency although it doesn't appear in that particular document, it is avoid that at the outset. We don't want to paralyze this program of regulation with bulk while we get at those waste streams that present the most risk to the public. That is my motivation. It is not large industry; it is large special waste streams like fly ash.

Mr. LAFALCE. Mr. Jorling, you were making mention of changes EPA was going to consider. I had my staff meet with your staff, Mr. Plehn and several other individuals involved, and before the end of the session introduced two pieces of legislation. The first bill I think would help fill the gaps in RCRA by amending it: (a) To establish a program for the identification and reclamation of abandoned hazardous waste sites; (b) set fees to be paid by private organizations which store or dispose of hazardous wastes; (c) provide for a process for the selection of sites for future disposal of hazardous wastes.

In particular, my bill would initiate a system of fees to be levied on permit holding operators of hazardous waste treatment storage or disposal facilities. Fees would be deposited into a fund to be used for two purposes: First, maintenance of new or existing sites; and second, the maintenance and reclamation of abandoned sites. Half of all the fees collected would be paid into a special account and used for new site maintenance. The other half of the fees would be deposited into a second fund to help defray the costs of monitoring and reclaiming abandoned sites. It is anticipated that the fees would provide 50 percent of the cost. The remainder needed would be provided through a Federal-State split on a 90–10 basis. I am not asking for your immediate reaction to that, my first bill, but I would hope you would scrutinize it, come up with suggestions and criticisms and take it into consideration as you present EPA's program in early 1980.

The reason I presented that bill toward the end of this session is so that it could serve as a focal point for discussion within EPA and all other individuals similarly interested in the environment.

Mr. JORLING. I think you deserve to be commended for your initiative in that area. You have, I think, fired the first shot in an area that we need to address very quickly.

Mr. LAFALCE. The second bill that I propose—and I think this is also very important; it is one thing to concern ourselves with taking care of hazardous wastes and reclaiming abandoned sites, et cetera. Another thing is, What do we do about the victims of toxic pollutants?

Now, I have been through this so I have designed the bill to provide relief to all persons injured as a result of toxic pollutants in our environment.

I would basically distinguish among three classes of victims: Those who have sustained their injuries as a result of the fault of the manufacturer; those victims who sustained their injuries in the course of their employment; and those victims who sustained their injuries as a result of a toxic pollutant but without fault.

Now, while the bill I introduced treats each of these classes somewhat differently, it does provide a central theme. The Environmental Protection Agency is directed to study physical injuries and to determine which such injuries were in fact caused by toxic pollutants, because that is a great problem in and of itself.

So I would again ask that between now and January of 1979, when Congress reconvenes, you closely scrutinize and submit your written criticism and suggestions to me for changes in that bill also, because I feel that that approach, the compensation of the innocent victims of toxic pollutants, is absolutely essential.

Mr. JORLING. You can be assured that we will do that. As you know, the superfund bill, which did not get enacted in the final stages of the 95th Congress, did include a compensation mechanism for those individuals who were damaged by spills of oil.

Mr. LAFALCE. That was just one small, little category. This is all toxic pollutants.

Mr. JORLING. That is correct. The administration at that time or last spring endorsed the extension of that compensation scheme to hazardous substances, a subset of all toxics, and what we are now seeing is that all of these activities are converging into developing a fund and a liability scheme that removes the burden from the citizen and does not at the same time remove the standard of care incentive on the part of the operators.

Mr. LAFALCE. You cannot do that. You must create immediate relief for the victim. And only the Government can do that. But then the Government must be subrogated to the rights of the victim so that you can go against the polluter and continue the deterrent on manufacturers and disposers, and so forth, to adhere to a standard of care that is great, that there can be no tolerance of negligent activity.

Let me ask you a few more questions.

I am a little concerned with the statement Mr. Dach made about the removal of $3.8 million from Mr. Kaufman's office elsewhere.

Now, you have stated, and I think rather glibly, "Well, we are not doing what we should be doing in that office, we are doing it in the Office of Enforcement or Protection." That didn't satisfy me. Would you expatiate upon that.

Mr. JORLING. I must preface it by saying that the staff said that this was going to be the most difficult question to answer.

Mr. LAFALCE. I'm glad I asked it.

Mr. JORLING. Let me see if I can give a couple of explanations that are adequate.

The first is that managers in our agency do not spend a whole lot of time in the currency of dollars. Our currency of limit is people. And therefore when we look at a program, the first thing we look at are the personnel shifts, where are the people going, can we move people to these areas. And then you find yourself saddled, as we are saddled now, with a personnel freeze, and that is very hard for us to stay calm and cool in.

Then we look at dollars. Dollars are more fundible within an agency. They are also more shiftable than people.

What happened in this situation, where money was lost from this program, was as follows.

The end of 1977 saw major changes in our basic statutes, and I might add in point of clarification, none of our programs are mature. The Clean Air Act, and the Clean Water Act were completely rewritten last year to rejuvenate them, so that they are not mature.

We had these major amendments, and we had some obligations placed on us that were extremely critical.

Also, finally, and I would like to take some credit for this, although it is always others that deserve it, we moved the regulations required for the 311 program and the pretreatment program out of the agency, activities which had been initiated but had

never reached the light of day. In order to do that, we began to realize——

Mr. LAFALCE. Who has the 311 program now?

Mr. JORLING. I do.

Mr. LAFALCE. You moved it out of the agency, you say?

Mr. JORLING. We moved the regulations out of the agency so that it became a viable program, until the court enjoined it——

Mr. LAFALCE. You promulgated them——

Mr. JORLING. That's right. There were three activities within my responsibility. One was pretreatment regulations. The second was the hazardous materials regulations under section 311. And another one was a nondiscretionary activity which we had to engage in beginning immediately on the possible relief to coastal dischargers of municipal waste water, of a relaxation of their standard of performance. It has several billion dollars worth of implication.

We had no resources for any of those three programs. So what we did in February was to squeeze the agency as hard as we could squeeze, and now we are talking about squeezing dollars. All of my colleagues got together in a room for 2 days and we sat down and said "where can we squeeze out some new dollars to put into these things, like pretreatment, 311, and 301H, which are going on now; which things, in effect, can we defer." And we found in the hazardous waste budget when we looked at it with a fine-tooth comb some areas that we could defer in order to build this kitty up, and the kitty came to about $18 million.

Mr. LAFALCE. What you are saying is you just took the money out of the Office of Hazardous Waste Management and the job that they were supposed to be doing really isn't being done by any other of your offices right now, because you took that money and you put it into something other than hazardous waste management.

Mr. JORLING. I think in the end I can be criticized justifiably for——

Mr. LAFALCE. Is that correct or incorrect?

Mr. JORLING. There is a small portion of it which may have had an influence over the progress on the hazardous waste regulations. The bulk of it did not.

Mr. LAFALCE. There is a small portion of what?

Mr. JORLING. Of the $3.4 million. There were some contracts——

Mr. LAFALCE. Wait a minute. The $3.4 million was in the Office of Hazardous Waste Management. What do you mean by a small portion of it?

Mr. JORLING. There were some elements.

Mr. LAFALCE. All of it was supposed to be in Hazardous Waste Management, right?

Mr. JORLING. Well——

Mr. LAFALCE. Not a small portion.

Mr. JORLING. Let me see if I can give an anecdote which might help explain it.

When you get down to certain levels of money, the ability of managers to identify what they are going for, whether they are going for the manure pits in Vermont or whether they are going to provide travel for people, that is what we did to get that kitty within the agency.

Most of that money, $1.2 million, was for salaries. It was determined on recalculation that the grade level base within the office of solid waste program did not require that $1.2 million to pay the people, it did not involve a reduction in people. So that that money was made available by scrutinizing the actual budget. It was not something that had a negative effect on the progress of the regulations.

Mr. LAFALCE. Let me just get to the nitty-gritty. Which particular office now within EPA is now responsible for hazardous waste management, for promulgating the regulations that are long overdue?

Mr. JORLING. It is the Division of Hazardous Waste Management within the Office of Solid Waste.

Mr. LAFALCE. And who is head of that?

Mr. JORLING. My colleague to my right, Jack Lehman.

Mr. LAFALCE. It is not the Office of Enforcement.

Mr. JORLING. That is correct.

Mr. LAFALCE. Well, before I thought you answered the question by saying, Oh, it is not Mr. Kaufman's office——

Mr. JORLING. You asked me which was the office responsible for the regulation. The Office of Enforcement is the office to which we have shifted the responsibility for hazard response.

Mr. GORE. I asked earlier why Mr. Kaufman didn't have any budget, if he had the primary responsibility. It was in response to that question that you said, "No, it has been shifted to the Enforcement Division."

Mr. JORLING. That is correct.

Mr. GORE. That is the interchange you are recalling. But now you are saying that it is Mr. Kaufman's responsibility.

Mr. JORLING. We can give you an explanatory note that describes how the $3.4 million was arrived at, what the specific elements are. I will just read the budget items. Personnel compensation and benefits, travel, grants——

Mr. LAFALCE. Well, you can submit that to us in writing.

[The information requested was not available to the subcommittee at the time of printing.]

Mr. LAFALCE. The point is who is responsible for now getting these regulations out? Is it the Office of Enforcement or Mr. Lehman and Mr. Kaufman?

Mr. JORLING. It is Mr. Lehman, not Mr. Kaufman, and Mr. Jorling.

Mr. LAFALCE. Mr. Kaufman is under Mr. Lehman, is he not?

Mr. JORLING. He has a function within the office that Jack is the head of, but not the office that is responsible for the regulations.

Mr. LAFALCE. I guess the question is who do we keep hitting over the head in the months ahead.

Mr. JORLING. Me.

Mr. LAFALCE. OK. You've got it.

Mr. GORE. If I can interject one thing here, that is directly on the point, just briefly. In both of the years that we are talking about, EPA allotted less money to the solid waste program than Congress appropriated. In fiscal year 1978 Congress appropriated $39.8 million, while EPA allotted only $34.5 million. In fiscal year 1979 Congress appropriated $79.1 million, but EPA only allotted $74

million. So shifting it back and forth between programs is not all of the answer.

Mr. JORLING. Well, there are three elements included in that: the Office of Enforcement, the Office, in effect, of Abatement and Control, which is my area, and the Office of Research and Development. And the cumulative of it is that figure, that difference. What that represents is the agency's attempt at developing a resource base to use for exigencies during a fiscal year. And it is developed not by choosing not to issue these regulations but to determine whether or not the calculation that the grade level required that amount of matching money to pay them, whether or not the amount of travel that was projected was necessary, whether or not the amount of contracts was necessary.

I admit in this particular area that we cut some contracts we should not have. But the agency routinely goes through that exercise of fine tuning its budget in order to get some money to respond to Love Canals, to respond to the need to develop, on an instantaneous basis, resources to study an urgent issue. That is where we get that kind of money. Without it we wouldn't have it.

Mr. LAFALCE. Let me ask you this. Are you pushing as hard as you can to get some money into section 504?

Mr. JORLING. We have asked OMB on two occasions to approve an allocation or a budget recommendation for 504. They have turned it down and not submitted it. They have passed us an instruction not to ask for that money in the future.

Mr. LAFALCE. In other words, OMB has told you not only can you not have money under section 504, but you cannot even ask for it any more; is that correct?

Mr. JORLING. That is correct.

Mr. LAFALCE. I think this committee ought to do something about that.

Mr. JORLING. In partial defense of OMB, OMB is chairing a study to attempt——

Mr. LAFALCE. No, that's okay. You have answered my question. Let's go on to my next question.

Mr. JORLING. This is on point. They are trying to develop a new scheme, very similar to your legislation, to finance these kinds of situations other than through the general treasury.

Mr. LAFALCE. OK. If it is similar to my scheme, maybe we will talk about it.

Mr. GORE. I might ask if you would supply the subcommittee with the correspondence between you and OMB relating to this matter. Can you provide that to us?

Mr. JORLING. To the extent that it is in correspondence, I will furnish it. To the extent it was an oral conversation, I will try and develop and record it.

[The material requested was not available to the subcommittee at the time of printing.]

Mr. LAFALCE. Let me pursue one point with you, and this is a contention I have with you, Mr. Jorling, and not with OMB.

I had a problem with the Love Canal. From July of 1977 I was trying to get money from the Federal Government, from any pot that I could possibly get it from. And I got together with the commissioner of the Department of Environmental Conservation

for the State of New York, and we chatted with your office on a number of different occasions. We thought that we could, with innovative and creative thinking, tap the billions of dollars available in your section 201 program, because in my judgment what we were going to be doing in the Love Canal was build a micro sewer system. And it seemed to me that the very least you could have done under your section 201 program is say we will set aside 5 percent of the 201 money, 10 percent of the 201 money. And you were talking about, what, $40 million, something like that. You could at least set aside a certain percentage of the 201 money for creative, innovative types of sewer treatment systems, such as would have enabled me to cope much earlier with my Love Canal problem, even prior to the time that it became a national issue, on August 2, 1978.

OK. That is history.

But what are we thinking about doing with section 201 so far as a small percentage set aside for innovative and creative type of projects?

Mr. JORLING. Section 201 is another area of my responsibility.

Let me first of all state that it is talked of in terms of $40 billion. But $40 billion is not there. Congress just appropriated less money, $4 billion in fiscal 1979, than the expected amount. And there is evidence that the program will be part of the overall stringency in the Federal budget, so that it could take a further reduction in fiscal 1980.

Section 201 has a long history under the Clean Water Act. And my job is to implement it in accordance with that statute.

The demands that are placed on that money are great.

We have made a determination that in view of the needs that have been assessed for municipal construction and the backlog of waste treatment that must be built, that there is a program in place which will utilize more than the Federal Government is going to make available, and that that is what Congress intended it to be used for.

Now, it is always attractive for a Federal official or any official to say, "Gee, you've got that pot, it is big, skim it off."

But on the other side, I have to be responsible for carrying out my authority within the framework of the law. And at the present time we have made a determination that the type project represented by the Love Canal, that the type of project represented—and I can give you chapter and verse and the range of imagination is the range of projects which have been presented to us——does not qualify.

Mr. LAFALCE. I understand what your present determination is. But I also understand what your present authority is. And you do have the authority to set aside a small percentage of that total pot to respond to immediate crises.

Basically what 201 is attempting to do is provide facilities, infrastructure, to prevent problems in the future. We must do that. But when confronted with an immediate crisis, it seems to me that Government must be able to respond immediately. And if it takes just a little creative use, in a small percentage of set-aside, with authority that you now have, I commend to you that you reconsider the issue.

But let me go on to my final point.

Speaking of all these facilities that are being built, an awful lot of these new sewer treatment, waste water treatment facilities have been built in western New York. You know what we are finding? That the operational and maintenance expense that has to be borne by the localities is just horrendous. That it is increasing real property taxes by 100 to 300 percent. Oftentimes these facilities were built because of the mandate of the Federal Government. In some instances, such as in my congressional district, certain facilities will be built because of either existing or imminent international treaties.

It seems to me that the Federal Government bears a responsibility when facilities have been built because of Federal mandate to alleviate the burden of operational and maintenance expense.

I am wondering what EPA has on their minds along those lines.

Mr. JORLING. In oversight with a colleague committee of yours, or a sister committee, of the Committee on Public Works, we addressed those questions you have identified. I will be happy to go into some detail on that.

I think it is a separate issue and one that you may want to have us up on and go through, so that we don't take time now.

But basically, let me just say anecdotally, I wish the Federal Government could dictate what level of performance and what type projects were built under that program. We do not have that kind of clear authority. This is a very difficult program to run. It involves local, State and Federal decisions, and the primary decision as to what level of treatment is required is usually not a Federal one.

So that I can assure you that we have taken steps, as did the Congress in 1977, when they gave this strong new direction with respect to the high and many implications of high technology waste water treatment, to turn the program to less high technology options and improve the quality of the waters at the same time.

That is going to take more management than we have been giving it. And I hope it will be better management than we have been accused of giving the hazardous waste program.

Mr. GORE. Mr. Greene.

Mr. WARREN. Could I just respond to one question Congressman LaFalce raised. I know he is familiar with this issue because we went through it when we were dealing with the Love Canal situation.

The money that is given to the construction grant program under section 201 has always been considered to be sacred by the Congress, as you know. When we were looking at that situation, we ran across the prohibition in the appropriations bill against reprograming any of that money. And the Appropriations Committee particularly takes a very close look at any efforts on our part to try and use the 201 construction grant money for purposes that really fall outside of 201.

So we are confronted with this mandate.

And then I know you had suggested that we could use a little creative interpretation to get around it.

Mr. LAFALCE. I said we didn't have to reprogram. And you said "Maybe you're right, we don't have to reprogram if we are creative

enough." But you also pointed out another problem is the O&M costs that would have to be borne under the 201 by localities, whereas if we could have gone to section 504 or 8001, as we ultimately did, there would be no local share.

Mr. WARREN. Yes; I think those are two problems that make it difficult to dip into that section 201 money.

Mr. GORE. Mr. Greene.

Mr. GREENE. Thank you, Mr. Chairman.

Mr. Jorling, one of the key points that was raised in Dr. Davoli's testimony was:

> An important point to be stressed is that as written the section 3001 regulation will result in defining only a small fraction of the known toxic substances as being hazardous wastes. Thus a large number of hazardous wastes will be excluded from control under subtitle C.

Specifically as I recall she or Mr. Dach indicated that carbon tetrachloride, one of the major chemicals found in the Sterlings' well, would not be covered by your current drafts of section 3001. Could you inform the committee on that?

Mr. JORLING. Let me try. RCRA applies to hazardous waste. It does not apply to "toxic chemicals independent of the waste stream." We think that by listing the manufacturing wastes that are included within it, all of those wastes, in Toone, Tenn. would be included; not by specific identifiable chemical compound name, but rather because they are wastes from pesticide manufacturing, organic chemical manufacturing, petroleum refining and the like.

So that we do not under RCRA address specific chemicals. We address specific waste streams. If we addressed specific chemicals, we would then pick up into the system all of the movement of raw materials and of products and that we could not carry.

Mr. GORE. Mr. Jorling, a problem with that approach is that you cannot always clearly establish the flow through the ground and establish the waste stream. You have that location in New Jersey where you have mysterious increases in the cancer rates, and they don't even know what substances are involved, much less identification of the entire waste stream.

In the Toone situation, in order to get the evidence to establish the waste stream they would have had to penetrate the artesion aquifer and greatly increase the risk to a much larger area.

So if you exclude the chemicals and include only those substances that can be identified as part of a discrete waste flow, then you exclude all of these locations where they cannot readily identify what the manufacturing process was that led to the disposal of the waste to begin with.

Mr. JORLING. What we are having here, I think, is confusion over the way RCRA works. Let me try and identify the way it should work.

When wastes are characterized as hazardous, that means they come into the system of regulation. When they are in that system, it creates several duties on the part of those who manage. For those people who shift these wastes from their site of origin, their point of generation, to an off-site facility, there are a set of things called cradle-to-grave documentation that accompany that waste to make sure that it goes to a permitted site. And it is at the permitted site where the environmental control occurs.

So what we have in these regulations are requirements that no waste discharged or stored, treated or disposed of at that site can be released to the ground water, except under controlled conditions.

So that once you have issued a permit, you are regulating the performance of that facility, and the permit requirements are no uncontrolled release to the ground water. No matter what the chemical is, if hazardous waste is going to that site, there can be no uncontrolled release of any chemical to the ground water.

So that we pick the regulation of the site up through the performance standards governing the release both to the air, to the water, and to the land of all of the materials that are in that waste that is brought to that site.

Similarly, on-site disposers have to receive a permit with the same type of condition.

We don't and we could not regulate the 30,000 chemicals, chemical by chemical.

Mr. GREENE. Mr. Jorling, might I follow up on that?

Pursuant to RCRA, you get into RCRA by way of having your substance, either by way of a process list or a set of criteria or otherwise listing the substance—have that on the 3001 list, and then the regulatory scheme which you have just outlined to us follows.

As we understand the way the draft was changed, you changed principally in June or July from a focus upon the criteria, what this stuff does, to the process list. And it is important for the subcommittee to be assured that by making that shift from a series of tests which would test whether or not wastes would actually injure people to a process list, which would focus on pesticide production, for example, to be assured that people in the situation of the Sterlings, when they see carbon tetrachloride in their wells, will be covered by the regulatory scheme—can you make that assurance to this subcommittee?

Mr. JORLING. Well, I am not sure what I am assuring to. If, for instance, a permitted site released material into the ground water, that material was then tracked to the Sterling well, then the liability requirements of the permit would be triggered and they would have access to them. So that I can give you that assurance.

With respect to the monitoring requirements that are associated with the permit, it should detect whether or not there is any movement in the ground water of any chemical.

Let me just come back to Mr. and Mrs. Sterling. The information, as I understand, on the carbon tetrachloride content reached our regional office on August 30. That information was then conveyed to the State. It did not reach our drinking water people in region 4 until this Saturday. And it is my understanding that that information of 4,800 parts per million of carbon tetrachloride is a level and that we will be joining the committee in advising those people not to have any body contact with that water.

Mr. GREENE. Let me pursue another question which was raised by Dr. Davoli.

Mr. GORE. If counsel would yield just briefly, I am not satisfied with the last answer on the way your regulatory scheme is pro-

posed to work. The way I heard you outline it, you just excluded all abandoned sites, is that correct?

Mr. JORLING. The only sites that are included are those sites for which there is presently an owner-operator. RCRA does not address abandoned sites.

Mr. GORE. Doesn't the imminent hazard authority run to abandoned sites?

Mr. JORLING. It can be interpreted to do that but I don't think——

Mr. GORE. Well, you have 250 in one region, and you have 10 regions. Granted it is sloppy estimating, but let's say for the sake of argument that we have got 2,500 sites of this kind that present a serious threat to a large number of people. Shouldn't the imminent hazard authority be used to address that problem?

Mr. JORLING. As I said, you will have to watch our performance in the next several months to determine whether or not—but let's——

Mr. GORE. But is the answer to that question yes?

Mr. JORLING. We will use imminent and substantial authority where we can.

But let me give you the track record of the agency. We have imminent and substantial authority now in every one of our statutes. We have used it three times. Birmingham, an air case. We have used it in the case of the discharge from the FMC Corp. into the Kanawha River, and we have attempted to use it in the case involving Velsicol in the Memphis public treatment system. Suffice to say that the burden of proof to satisfy a Federal judge to take a remedy, to issue a remedy under that action is very, very great.

We think RCRA needs a better set of tools to address the abandoned site. And I think when those are forthcoming, we will be able to address them more effectively.

But if we used imminent and substantial authority, assuming we could overcome all of the burdens that the court would impose in its common law proximate cases, in Iowa, in Charles City there is $35 million of needed resources that the corporation does not have. What do we do?

It is a question of resources.

So that if we trigger a set of expectations in the public that all of these 2,500 facilities are going to be repaired quickly, we are making a misleading statement.

Mr. PLEHN. Mr. Chairman, just to put that bluntly, if by abandoned sites you mean really abandoned, meaning that there is neither an owner that is closely associated with the site or even more particularly if there is an owner, but he does not have resources sufficient to deal with the problem, then there is no remedy through the imminent hazard authority, because all it allows us to do is to go to a court and say we think there is an imminent hazard and we think the court should order the owner to clean it up.

If he is not there or he doesn't have any money, that is not a useful tool.

Mr. GORE. That is not the way I am defining abandoned site. I am defining abandoned site as one for which there is not a license or permit under the procedure that Mr. Jorling outlined earlier.

Because it occured to me from the way he responded that none of these chemicals would come under regulation unless this was an active site where dumping was continuing, where the act required a permit to be applied for and granted. For those sites similar to the one in Toone, where the dumping occurred, or Love Canal—maybe that is not the best example, but let's take the Toone situation, where the site is there and there is a defendant with a deep pocket, yet there is no permit in prospect because there is no further dumping anticipated.

Mr. JORLING. Where to draw the line on the spectrum of activities is something we are trying to deal with in the rulemaking process.

Let's use as sort of extremes the question of the Love Canal. Here you had an activity that ceased in something like 1956. Property was conveyed to a public ownership. And then the problem was identified—everyone was made aware of it. OK. That is one type of situation.

Another type is the situation in Tennessee, where you had a site receiving these chemicals, which will be included in our list, these wastes. Then the practices of disposal ceased in 1972, but the property continues under the ownership and management of the corporation responsible for the waste.

And then further along the spectrum, out on the other end is the company which is in the business of receiving hazardous wastes.

We are attempting to draw on that spectrum a line that makes good commonsense.

It could include, when we finally act, the Velsicol situation.

Mr. GORE. Well, as you know, there are a lot of companies in the business of receiving solid wastes who are anxious to build some to these new facilities to treat and dispose of these hazardous wastes in a safe and responsible manner. But they cannot do it because they are still waiting for the regulations.

Mr. JORLING. I must comment on an earlier statement by the representative of the Attorney General's office of the State of Illinois. There is an inference there that the Wilsonville site and the Love Canal site are the same general generic kind of problem. And that is not true at all. We have entered that case as an amicus on the side of the site. In other words, it is our judgment that the Wilsonville site is a very good—in the relative context of practices today—hazardous waste facility. And, therefore, to suggest that Wilsonville and Love Canal and Toone, Tenn. be linked together is not doing the public a service.

Estimates are that the Wilsonville site will reach the ground water with the present practices in 600 years. It is a much different situation.

I want to make clear for the record that if we had more Wilsonville type sites around the country and fewer Toones the country would be protected.

Mr. GREENE. One final question. With respect to your standards that allow for the spreading of sludge on land farming areas, this, of course, would allow for cadmium to be spread upon the land. Can you justify this in the light of reports by the World Health Organization and your own agency concerning the dangers of cadmium?

Mr. JORLING. We have several activities underway dealing with the problems of municipal and industrial sludges. For the moment let's confine our answer to industrial sludges. We are attempting to develop an environmental regulation for management of sludges which makes good commonsense and protects both the public health and the environment and the consumer of services in the cities.

We think that we have to weave together several tools in order to accommodate the threats posed by the release of cadmium into the environment. One of the most important of those is pretreatment. We have a very aggressive pretreatment program and a set of standards applicable to the principal source of cadmium discharges into publicly owned treatment systems—the electroplaters which have been subject to so much controversy over the recent months because they are in rulemaking. But we don't think the people who deal in cadmium should be able to shift the burden of those chemicals and exposure risks of those chemicals to the public sector. We think that they should be controlled at their source. So that we think pretreatment is an absolute necessity not only for cadmium but for persistent organic chemicals as well as other heavy metals.

We also have a very strong feeling that the municipal sludges, by and large, when they are not contaminated, represent an extremely valuable resource, and a valuable resource that can be utilized at very low cost and is to the benefit of the citizens of the urban centers.

Mr. GREENE. Don't municipal waste sludges oftentime contain levels of cadmium which rival the levels found in industrial waste streams?

Mr. JORLING. There is a question as to what the level of harm is and the pathway of land-spread cadmium sludge is to the human. For instance, the cadmium levels in most municipalities is below that of Western fertilizers.

It is also below the natural content of the soils in many of the California fertile valleys, so that cadmium is a very difficult problem.

Mr. GREENE. Isn't it true with respect to the California valleys, the California legislature is now considering legislation to ban the growing of certain crops on certain lands?

Mr. JORLING. Yes; leafy vegetables. None of our programs will allow the cadmium spread lands to be used for the same crops.

Mr. GORE. I would like to also ask you, Mr. Jorling, if you could give this subcommittee a report on these sites around the country [see appendix, p. 461] that we asked about in preparation for these hearings and an indication of what EPA is doing and plans to do to monitor the sites like the one in Toone, Tenn. and some indication of what commitment EPA should and can make to the community of Toone, Tenn.

I would agree with you on the changes needed in RCRA. I think that is abundantly clear from the record of this hearing.

Mr. GORE. I would ask unanimous consent to include additional materials in the record including a statement [see p. 456] from Representative Jack Kemp of New York and the responses to further questions that we will submit to you in writing.

Is the deadline of December 1 OK with you on the request that I have made here?

Mr. JORLING. With respect to the first one, as we have indicated to the staff here the last couple of days, as soon as we receive the material we will make it available to them. I hope we can continue that kind of interaction with your staff. Whether or not we will have any of the material in any form that leads one to make decisions by that time, I will have to hold up. But certainly the raw data you will have as soon as we have it.

Mr. GORE. I think the deadline for doing something for Toone shouldn't be that long. Here these people are bathing in carbon tetrachloride in polluted water. Can the people of Toone, Tenn., who are experiencing this threat call EPA for some evaluation of the health risk? What do you plan to do for Toone, Tenn., based on what you have heard today?

Mr. JORLING. Let's start with respect to the site itself. We will continue to use as much of our authority and expertise along with the State of Tennessee to abate that problem.

With repect to the individuals who are undergoing hardship now, we will attempt as best we can to give them accurate advice as to what their risks are, what the exposure levels are that caused various problems.

As I did mention, the agency will be communicating with those folks to advise them that no body contact as well as no drinking is advised in that situation. We hope also to work closely with, again, the State of Tennessee, which I would hope, since they are citizens of the State of Tennessee, will take a more aggressive posture protecting those people.

Mr. GORE. So you will be in touch with the people who are residents of this area?

Mr. JORLING. Yes.

Mr. GORE. Do you think it might make sense in light of this experience for EPA to have some kind of emergency response team to deal with squawks like this when they become known?

Mr. JORLING. We do have an emergency response program. Some of the moneys we talked about before went to developing contract response efforts. We have hired expert corporations to be available to us to respond.

Mr. GORE. How long have they been under contract?

Mr. JORLING. We have received this authority the beginning of fiscal 1979, which is what we just started this October 1, so that we are just in the beginning of that process. We do have approximately seven or eight people in each region—it varies but the average is that—in emergency response for oil and hazardous materials. When the new 311 hazardous spill regulations are completed—the second to last action which the Congress took, for which I am very grateful, freed the hazardous spill regulations—we should be able to move that program to higher visibility. But we do now have

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approximately 100 people, 70 in the regions, some in headquarters and two emergency response teams, one in New Jersey and a site still unknown in the West to respond to emergency releases of chemicals into the environment.

Mr. GORE. I would like to thank each of you for the attitude you have taken during these hearings and for the candor of your responses, and I share your hope that out of these hearings we can reach some sensible solution for the incredibly serious problems we have been discussing. It has been a long hearing. I thank you for your patience.

The hearing is adjourned.

[Congressman Kemp's prepared statement referred to follows:]

STATEMENT OF HON. JACK KEMP, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman and members of the committee: I wish to commend the Subcommittee for holding these hearings. I suspect it was not an easy task to bring Members together in Washington during this adjournment period. But the subject of these hearings requires prompt and decisive action on the part of the administering Federal agency, the Environmental Protection Agency, and of Congress if additional legislation is needed. The adjournment period, as I indicated several weeks ago, gives us time in which to prepare such legislation for introduction the first day of the 96th Congress. Thus, now is not too soon to hold these hearings.

If there is any one thing of which we can be assured, it is that near-hysterical handwringing is not going to solve this problem. That problem, the control and disposal of toxic substances and hazardous wastes, breaks down into several distinct components, and each of those may require a different approach in law and technology.

While the problem is nationwide, and it truly is, much of the national media focus has been on Love Canal, an abandoned chemical waste dump in the chemical industry center of Niagara Falls, New York, where the soil has begun to leech cancer-causing chemicals.

The Love Canal incident raises questions primarily as to how to handle today those situations arising from the inadequate disposal of hazardous wastes in years prior to the enactment of Federal legislation. That particular dump was covered according to the best technology available—25 years ago. But the threats to health there today are so critical that the State of New York is buying at fair market value the homes on the site of 237 families. This incident cannot be the only one which will occur over a covered site. EPA estimates that there are as many as 20,000 dump sites for hazardous materials.

What are the questions which emerge in this type of incident, questions for which answers should begin taking more definite shape as a result of these hearings? For example—

Are there ways in which the costs for redisposal of these materials can be allocated to the original manufacturers and disposers? Considering the difficulty of applying a remedy retroactively in the law, will such costs have to be borne solely by the taxpayers, through government's responsibility of protecting the public health? If so, which levels of government and which taxpayers? If much of the problem with respect to old sites has arisen from ill-conceived local zoning ordinances which permit residential and commerical construction over the landfills containing hazardous substances or from inadequate enforcement of existing local antidumping laws, how much responsibility and cost should the Federal Government bear?

These questions should be addressed today.

But the problem of toxic and hazardous waste disposal is not limited to past dumping. EPA estimates that the 14 largest waste-producing industries pour out 35 million tons each year of dangerous byproducts, and it is throughout the country, not just in the industrial Northeast. Twenty-five percent in the South; 22.6-percent in the Midwest; 20.1 percent in the Mid-Atlantic region, including New York and New Jersery; 15.6-percent in the Southeast; 5.2-percent in the Southwest, including Hawaii; 4.2-percent in New England; 3.7-percent in the Northwest; and about 2-percent each in the Great Plains and in the Rocky Mountain region.

EPA estimates that only about 6-percent of these mountains and seas of hazardous wastes are disposed of properly.

This problem of disposal of wastes being produced today and in the future raises a different set of questions. For example—

Ought a company which markets a hazardous chemical product be required to develop a technical means of neutralization of the hazard? Ought a company which generates hazardous byproducts be required to absorb the total cost of the development of neutralizing technology and disposal, laying off the cost to the consumers thereof in the form of higher prices? Ought there to be some type of certification process, with appropriate penalties for failure for fraud, with respect to these products and byproducts?

These questions too should be addressed today.

The fundamental question, the one we address at these hearings, is to what extent the Resource Conservation and Recovery Act, already answers these questions but is failing for failure of implementation by the Environmental Protection Agency. We know that the implementation of that Act has become a non-implementation. Congress and the people we represent deserve answers to why that has happened and what is going to be done about it. And I think that answer has to be more thoughtful than the all-too-frequent cry of the bureaucracy, "All we need is more money." One hears disturbing rumors about EPA's internal debate over its response to the authority assigned to it through the RCRA.

In my opinion, the problem has been more one of focus within the agency. Our country not only has the RCRA on the statute books, but the Toxic Substances Control Act, the Safe Drinking Water Act, the Federal Water Pollution Control Act, the Federal Air Pollution Control Act, and other measures as well. It's hard to imagine the principal problem being a need for threshold legislation. No doubt, we may need to make amendments, and the search is one of our purposes today, but the principal problem must lie in the administration of the programs already authorized and funded by Congress. I do not know why something as major as the disposal of millions of tons of hazardous wastes, including how to deal with the 20,000 dump sites, has not been regarded as a priority within EPA. And, while like my colleagues I was pleased to learn of last week's announcement of EPA of the making available of $15 million in Federal grant funds to assist States establish programs to assure the safe handling and disposal of hazardous wastes, I do not think that will resolve the problem. EPA's commitment cannot be limited to a one-shot release of funds in advance of a Congressional hearing.

I am devoting a substantial portion of my time, that of my staff, and that of my scientific and legal advisers to this matter, and I know that my colleagues from western New York and their assoicates are doing the same. I am encouraged about our prospects of determining at their earliest possible date what the necessary Federal, State and local approaches ought to be and legislative needs are. If EPA will proceed immediately to activate fully the authority it now has on the books, and if we proceed toward the introduction of any necessary legislation on January 15, we will have made a significant contribution to reducing this health hazard.

These hearings would not be complete, Mr. Chairman, without mention of the role of the Buffalo Courier-Express and its staff writer, Michael Desmond, in bringing the national extent of this problem to our attention. My colleague, Representative John LaFalce, and I read into the Congress Record the texts of the articles, and my colleague, Representative Henry Nowak, has entered them into our hearing record today. This series is deserving of the highest recognition of the newspaper industry.

[Whereupon, at 2:23 p.m., the hearing adjourned.]

APPENDIX

Post Hearing Developments

ALBERT GORE, JR.
FOURTH DISTRICT,
TENNESSEE

1725 LONGWORTH OFFICE BUILDING
TELEPHONE: (202) 225-4231



COMMITTEES:
INTERSTATE AND
FOREIGN COMMERCE

SCIENCE AND
TECHNOLOGY

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

November 20, 1978

Honorable John E. Moss
Chairman, Subcommittee on Oversight and
Investigations
Interstate and Foreign Commerce Committee
2323 Rayburn House Office Building
Washington, D. C. 20515

Dear John:

The Subcommittee's October 30, 1978 oversight hearing concerning the Environmental Protection Agency's implementation of the Resource Conservation and Recovery Act (RCRA) has brought about a number of important innovations for which I believe you and the Subcommittee staff should be commended. The problem of disposing of the billions of pounds of toxic wastes that are produced annually in this country is a serious and burgeoning one. The hearing both brought this critical issue into the public eye and made it clear to EPA that Congress intends to see that RCRA is properly and expeditiously implemented.

A number of specific actions have been taken since the hearing that I believe are wholly or in part due to the Subcommittee's influence. These include the following:

--Mr. Hugh Kaufman, Program Manager of EPA's Environmental Assessment Program, Hazardous Waste Management Division, has been allotted $100,000 for environmental damage assessment in fiscal year 1979. According to Mr. Kaufman, the money will be used for technical consultation and hazardous site monitoring. At the hearing, Mr. Kaufman testified about the lack of agency resources being directed toward the crucial activity of locating and monitoring active and abandoned hazardous waste disposal sites that threaten human health and the environment.

--Mr. Thomas Jorling, EPA Assistant Administrator for Water and Hazardous Materials, has sent a memo out to EPA regional administrators asking them to review their files to identify hazardous waste disposal sites that may either "present potential risk(s) to public health about which local residents are uninformed, or constitute potential enforcement action(s) under State or local authorities or Section 7003 of RCRA." Mr. Jorling's memo instructs the regions to "review files to determine if any such cases exist and take appropriate action in accordance with Agency procedures if any are identified.

--EPA has advised all residents along the Toone-Teague Road in Hardeman County, Tennessee, whose wells have been declared contaminated to cease all use of the affected water, including use for bathing, laundering clothes, etc. This agency action followed post-hearing testing of the well water which revealed the existence of Carbon Tetrachloride in dangerously high amounts. A Subcommittee staff inquiry into previous test results instigated the additional Carbon Tetrachloride testing. Carbon Tetrachloride in 13 parts per billion was also found during recent testing of water from the public well that serves the nearby city of Toone. EPA is currently working to uncover the source of this contamination and to warn local residents about possible associated hazards. In addition, the Velsicol Chemical Corporation, owner of the hazardous waste dump site near Toone, has offered to buy the homes affected by well contamination, including the home of Mr. and Mrs. Woodrow Sterling (who testifed at the hearing). Negotiations between the company and the families are currently underway. Velsicol's actions must be attributed to publicity received as a result of the hearing.

While these actions testify to the effectiveness of the hearing, they by no means abate the seriousness of the problems associated with hazardous waste disposal and EPA's tardiness in promulgating RCRA regulations. Continued Subcommittee activity in this area will be of the utmost importance in the future. With this in mind, I have discussed the possibility of additional hearings on this issue with the Subcommittee staff. Should the Subcommittee's current budget permit, I would be pleased to participate in an additional hearing this fall. In any case, I am sure that you would agree that the area of hazardous waste disposal should be a major priority of the Subcommittee during the upcoming session of Congress.

We do not want to see Love Canals and Toone, Tennessee becoming a way of life in the future. Congress should continue to take the lead, as it did when it passed the Resource Conservation and Recovery Act by nearly unanimous vote in 1976, to make sure this country's wastes are managed safely and effectively.

Sincerely,



Albert Gore, Jr.
Member of Congress

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 2 1978

OFFICE OF WATER AND
HAZARDOUS MATERIALS

MEMORANDUM

TO: Regional Administrators

FROM: Thomas C. Jorling
Assistant Administrator

SUBJECT: Hazardous Waste Disposal Sites

On Monday I testified before the Oversight and Investigations Subcommittee of the House Interstate and Foreign Commerce Committee. At that hearing it was alleged that evidence may exist in our Regional Office files on hazardous waste disposal sites which may either

- present a potential risk to public health about which local residents are uninformed, or

- constitute a potential enforcement action under State or local authorities or Section 7003 of RCRA.

Please review your files to determine if any such cases exist and take appropriate action in accordance with Agency procedures if any are identified.

On October 10, 1978, an interim strategy for RCRA Subtitle C violation was transmitted to your Enforcement, Air and Hazardous Materials, and Surveillance and Analysis Division Directors. That strategy directs Regional Offices to work with each State to

- develop a system of communication and response for emergency situations

- apply this system to the unique problems of each State, and offer Federal assistance as necessary

- develop criteria for the States and Regional Offices to assist each other when emergency situations arise

- develop and maintain a listing of capabilities available through the State and Federal government

Please assure that priority is being given to the implementation of this strategy in your Region.

cc:
Administrator
Deputy Administrator
Enforcement --(Stef Plehn cleared memo with Terrell Hunt on Dick Wilson's staff)
Legislation
ORIO
Public Awareness
DAA for Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 3 1978

OFFICE OF WATER AND
HAZARDOUS MATERIALS

MEMORANDUM

To: Steffen W. Plehn
Deputy Assistant Administrator
for Solid Waste

Richard D. Wilson
Deputy Assistant Administrator
for General Enforcement

From: Thomas C. Jorling
Assistant Administrator for
Water and Waste Management

Subject: Imminent Hazard Activities under RCRA

During the oversight hearings held by the Oversight and Investigations Subcommittee of the House Interstate and Foreign Commerce Committee there were some very strong charges raised about the Agency's performance in the area of threats to public health and welfare resulting from abandoned and active hazardous waste disposal sites.

As you know, both the Office of Solid Waste and the Office of Enforcement and their counterparts in the Regional Offices have responsibilities in this area. In May, you agreed that substantial responsibility should be assigned to the Office of Enforcement consistent with the Agency's normal organizational pattern and the high priority we are placing in the OSW on moving the hazardous waste regulations to promulgation.

We are still concerned that the respective roles which have been described are not defined in detail nor fully understood, and may not provide for the most effective utilization of the very scarce resources in the Agency. We are, therefore, asking Cynthia Coulter of the Office of Water and Waste Management and Jerry Bryan of the Office of Enforcement under the direction of Bill Benoit of the Office of Planning and Management to serve on a task force to conduct an intensive study of the present arrangements and activities and make determinations as to how the Agency can better define and further improve its performance in this area. I have asked Bill Benoit to provide me with a report by December 15, 1978.

I have, by separate memo, instructed the Regional Administrators to review their files to make determinations of whether actions that are appropriate are being brought. During the period of study, we will press forward with existing arrangements, including the special effort of the Regional Administrators, and build a firm record of performance. This effort is to be under the general direction of Dick Wilson, and regional/headquarters activities will be carried on through his office.

cc: Bill Benoit
Cynthia Coulter
Jerry Bryan
Public Affairs
Office of Legislation
Mr. Costle
Ms. Blum
Regional Administrators

[NOTE.—A copy of the record of the Subcommittee's hearing was supplied to the court prior to its determination in this case.]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 4, 1979

OFFICE OF WATER AND
HAZARDOUS MATERIALS

Subcommittee on Oversight
and Investigations
Committee on Interstate and
Foreign Commerce
Room 2323-Rayburn House Office Building
Washington, D. C. 20515

Dear Mr. Chairman:

As you know the Environmental Protection Agency has been behind in the statutorily manadated schedule for promulgation of regulations dealing with the management of hazardous wastes under the Resource, Recovery and Conservation Act, as amended in 1976. There are many reasons for that delay, but the proposal was published in the Federal Register on December 18. We now have underway a process which we hope will lead to promulgation before the end of this year.

Because we were behind the nondiscretionary dates for promulgation, the Agency was subject to suit by several groups in Federal District Court. I am writing to inform you of the Order Judge Gesell issued to resolve that suit. You will note that it calls for a schedule of promulgation of the hazardous waste regulations prior to the end of 1979. The Order also requires that all filings by EPA be made with the Court, in affidavit form, periodically apprising the Court of the progress of compliance with the Order. The Order also requires these filings to be served on the Congressional oversight committees. We will, of course, be communicating frequently with you and the staff of the Committee so that you are fully aware of the progress of the Agency in all dimensions of the program being implemented to meet the statutory requirements.

I would also like to inform you of the scheduled public hearings on the proposed regulations which are as follows.

February 7, 8, 9	-	New York City
February 14, 15, 16	-	St. Louis, Missouri
February 20, 21, 22	-	Washington, D. C.
March 7, 8, 9	-	Denver, Colorado
March 12, 13, 14	-	San Francisco, California

If you or any members of the staff would like to attend any of these hearings we will make every effort to provide background information.

Thank you for your continued interest and assistance.

Sincerely yours,

Thomas C. Jorling
Assistant Administrator

Enclosures

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

STATE OF ILLINOIS, Plaintiff, v. DOUGLAS M. COSTLE, Defendant; CENTRAL & SOUTH WEST CORPORATION, ET AL., Intervening Defendants.	Civil Action No. 78-1689
ENVIRONMENTAL DEFENSE FUND, INC., ET AL., Plaintiffs, v. STEFFEN PLEHN, ET AL., Defendants; CENTRAL & SOUTH WEST CORPORATION, ET AL., Intervening Defendants.	Civil Action No. 78-1715
CITIZENS FOR A BETTER ENVIRONMENT, Plaintiff, v. DOUGLAS COSTLE, Defendant; CENTRAL & SOUTH WEST CORPORATION, ET AL., Intervening Defendants.	Civil Action No. 78-1734
NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION, Plaintiff, v. DOUGLAS M. COSTLE, Defendant; CENTRAL & SOUTH WEST CORPORATION, ET AL., Intervening Defendants.	Civil Action No. 78-1899

FILED

JAN 3 1979

JAMES F. DAVEY, Clerk

ORDER

After detailed consideration of the proposed schedule submitted by the Environmental Protection Agency, the supporting affidavits, and the briefs and arguments of all the parties, it appearing that the Environmental Protection Agency ("EPA") is proceeding in complete good faith and conscientiously to promulgate the regulations in dispute, and that a more expedited schedule does not appear at this stage to be in the public interest, the Court, for the reasons stated more fully in open court this day,

ORDERS that each of the regulations listed below shall be promulgated in final form no later than the dates indicated below:

Regulation	Final Promulgation Date
Sections 3001, 3002, 3003, and 3004	December 31, 1979
Sections 3005 and 3006	October 31, 1979
Sections 4004(a) and 1008(a)(3)	July 31, 1979
Sections 4002(b)	June 30, 1979
Section 1008(a)(1)	January 31, 1980

And it is further

ORDERED that the EPA shall, at the end of each quarter commencing March 31, 1979, file with the Court in affidavit form over the signature of the Administrator of the agency, a statement indicating any departures from the detailed implementing schedules which the EPA proposed to the Court on December 4, 1978, and the reason or reasons therefor, together with the agency's current best estimate of final promulgation dates, and it is further

ORDERED that whenever it appears that any promulgation date as set by the Court cannot be met, the EPA shall immediately file with the Court in affidavit form, over the signature of the Administrator, an explanation why nonpromulgation of the regulation, as ordered, does not appear feasible; and it is further

ORDERED that copies of all filings made with the Court, as heretofore ordered, shall be served on the parties to these actions and submitted to the appropriate oversight committees of the United States Senate and House of Representatives.

Gerhard A. Gesell
UNITED STATES DISTRICT JUDGE

January 3, 1979.

United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington DC 20460

EPA Environmental News

Fitzwater (202) 755-0344

FOR IMMEDIATE RELEASE TUESDAY, NOVEMBER 21, 1978

STATEMENT BY ENVIRONMENTAL PROTECTION AGENCY ADMINISTRATOR DOUGLAS M. COSTLE ON THE REGIONAL SURVEY OF HAZARDOUS WASTE DUMP SITES

Improper disposal of hazardous waste constitutes an extremely serious environmental problem. Thirty to forty million tons of hazardous waste are being produced each year. EPA estimates that 80 to 90 percent is being disposed of in ways which will not meet forthcoming standards.

This preliminary survey indicates that thousands of potentially dangerous chemical dump sites exist throughout this country. For decades we have been disposing of these chemicals without adequate safeguards. Under the new Resource Conservation and Recovery Act we are now developing a hazardous waste disposal system that will track these wastes throughout their life, and insure that they are finally disposed of in approved facilities that provide long-term public safety.

In the meantime, we are becoming increasingly aware of currently improper disposal, and of abandoned disposal sites such as Love Canal which may constitute imminent and substantial danger to public health and the environment. EPA's authority to clean up inactive sites is quite limited. We can take enforcement action against the owner of an inactive site to require cleanup if the site is an imminent and substantial danger to human health or the environment. Unfortunately, the owner often does not possess adequate assets to clean up the problem. Many states have more authority than the Federal government to deal with these problems. We will work closely with all states to provide technical assistance or any other help that we can.

This preliminary survey lists 103 sites where hazardous wastes have been placed. These are the ones on which we have the most information. They are not necessarily the most dangerous sites. Indeed, some have been cleaned up and others are under litigation. We are continuing to work with states and localities in monitoring these sites.

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FOR RELEASE
TUESDAY, NOVEMBER 21, 1978

EPA LISTS HAZARDOUS WASTE SITES

The Environmental Protection Agency is releasing information gathered from its ten Regional Offices on sites that may contain hazardous wastes which could cause adverse impact on public health or the environment.

EPA Regional Offices were asked to provide its best professional estimates on the following:

1. A rough estimate of the total number of landfill, storage and other sites which may contain hazardous waste in any quantity which now or potentially could cause adverse impact on public health or the environment. The Regional Offices identified 32,254.

2. A rough estimate of the number of these sites that may contain significant quantities of hazardous wastes which could cause significant imminent hazard to public health. The Regional Offices identified 638.

In addition, the Regional Offices were asked to provide an inventory and description of those sites for which EPA has information in its files to serve as a sample. Incidents to be included in this category were situations for which the Regional Offices had more than circumstantial evidence, the public (at least locally) was already aware, and publicly accessible information was already on file. The Regional Offices identified 103.

The information provided by each Regional Office is attached. The following table provides a quantitative summary of the estimates provided by each Region:

Region	No. of Sites Which May Contain H.W.	No of Sites With Significant Quantities of H.W.	No. of Sites on Which Information Was Supplied
I	1,200	275	5
II	509	25	4
III	5,000	12	5
IV	14,000	210	16
V	1,800	Unknown	22
VI	320	19	3
VII	8,000	Unknown	7
VIII	25	10	}
IX	400	37	1
X	1,000	250	31
	32,254	638	103

The number of sites which may contain hazardous waste is a Regional Office estimate, and does not reflect actual information on those sites.

# # #

SUMMARY

Sites Containing Hazardous Wastes on Which EPA Has Information and were identified in this Survey

State	EPA Region	Location	Name of Site/Owner/Operator
Alabama	IV	Anniston	Southern Metal Processing Co.
		Decatur	Spill into Tennessee RRiver
		Huntsville	U.S. Army/Olin Chemical Corp.
Alaska	X	Red Devil	Red Devil Mine Ponds/ Red Devil Mining Co.
California	IX	Pyrite Canyon near Glen Avon	Stringfelow Quarry Co./California Regional Water Quality Board
Colorado	VIII	Sand Creek, Denver	L.C. Corporation
		Denver	Lowry Landfill/City & County
		Rocky Mountain Arsenal	U.S. Army/Shell Chemical Co.
Delaware	III	New Castle County	Llangollen Landfill/County
Florida	IV	Whitehouse	Allied Petroleum (bankruptcy 1968)
Georgia	IV	Lake City	Landfill/Mr. Sammons
		Gordon	Gordon Services Co., Inc.
Idaho	X	Murran	Hecla Mining Co.
		Idaho Falls	Idaho Nat'l Research Lab./U.S.D.O.E.
		Wallace	Granite Mine Waste/Abandoned
		Stibnite	Yellow Pine Tailings Pond/ Abandoned
		Cuprum	Silver King Tailings Pond/ Silver King Co.
		Silver City	Delamar Tailings Pond/Earth Resources
		Clayton	Clayton Pond/Clayton Mining Co.
		Wallace	Star Tailings Pond/Hecla Mining Co.
		Wallace	*Galena Pond/ASARCO

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State	EPA Region	Location	Name of Site/Owner/Operator
Idaho (Cont.)		Kellogg	Sunshine Tailings Pont/Sunshing Mining Co.
		Kellogg	Central Impoundment/Bunker Hill Co.
		Soda Springs	Slag Pile/Monsanto
		Pocatello	Slag Pile/FMC
		Pocatello	Simplot Gyp Pond/J.R. Simplot
		Conda	Beker Gyp Ponds/Beker Co.
		Salmon	Thorium Tailings/Thorium Mining (Inactive)
Illinois	V	Byron	Byron Salvage Co. (bankruptcy)
		West Chicago	Kerr-McGee Disposal Site/ Kerr-McGee Corp.
		Rockford	Tipton-Martin Disposal Co. (closed)
		E. Chicago	American Recovery Co., Inc.
Indiana	V	Gary	Conservation Chemical Co. (closed)
		Kingsbury	Fish-Kalo Chemicals & Solvents Corp. (Inactive)
		Gary	Mid-Co. #1 & #2 (abandoned)
		Seymour	Seymour Recycling Corp.
Iowa	VII	Charles County	LaBounty landfill/Salsbury Laboratories
		Fort Dodge	Fort Dodge Iowa Oil Storage Site
Kansas	VII	Wichita	Vulcan Materials Co.
Kentucky	IV	Louisville	Lee's Lane landfill/Jos. C. Hofgesang Sand Co. (closed)

State	EPA Region	Location	Name of Site/Owner/Operator
Kentucky (Cont.)	I	Raywick	Allen Chemical Dump/ John Coolidge Allen and Heistand Allen (closed)
Louisiana	VI	Basile	BWS Corp. site (Inactive)
Maine	I	Gray	The McKin Co./Richard A. Dingwell (closed)
Maryland	III	Elkton	Maryland Sand and Gravelstone Co. (Abandoned)
		Elkton	Galaxy Chemical/Solvent Distillers
Massachusetts	I	Lowell	Silersim Chemical Corp. (bankruptcy)
		New Bedford	Landfill/City of New Bedford
Michigan	V	Montcalm County	Central Landfill/Ken & Ray Borema
		Gratiot County	Gratiot County Landfill/ County
		Montague	Land disposal site/Hooker Chemical Corp.
		Dalton Township	Storage/burial/various owners (1977-present- Cordova Chemical Co.)
Minnesota	V	Duluth	Arrowhead Refining Co. (closed)
		Perham	Hammer's Construction Co. (abandoned)
		Anoka County	Musket Ranch and Trading Post (Inactive)
		Shakopee	Pollution Controls, Inc. (Inactive)
		St. Louis Park	Reilly Tar & Chemical Co. & Republic Creosote (Abandoned; site purchased by City)
		Winona	Weisman Scrap Metal
		Woodbury Village	Minnesota Mining & Manufacturing (closed)

State	EPA Region	Location	Name of Site/Owner/Operator
Missouri	VII	St. Charles	Weldon Springs Chemical Plant/U.S. Army & Missouri Dept. of Energy (Restoration)
		Kansas City	Conservation Chemical Co.
		Frontenac	Frontenac Waste Oil Storage Site
		Verona	Storage/Syntex Agribusiness
Montanan	VIII	Great Falls	Disposal site/Morgan Chemical (closed)
		Billings	Sludge pit/Comet Oil or Morgan State Oil Co. (Inactive)
		Chinook & Sun Burst	Disposal site/Thunderbird or Big West Oil Co. (Inactive)
New Jersey	II	Middlesex Co.	Kin-Buc Landfill, Kin-Buc Inc./Marvin Mahan (closed)
New York	II	Niagara Falls	Hyde Park Landfill/ Hooker Chemical Corp. Niagara Falls Neccel Park Dupont Landfill (Inactive)
		Niagara Falls	Love Canal Hooker Chemical Corp./City (Inactive)
North Carolina	IV	Gastonia	Destructo Chemway/ C.A. Hughes (Old Name)
		Holly Ridge	Renroh, Inc./ Mr. Doug Horner (abandoned)
		Roads in Central/Eastern	Transformer Sales Co./ Robert J. Burns
Ohio	V	Oak Hill	Storage&Reclaimer/Cherrington Scrap Metal, Inc. (Inactive)
		Grafton	Storage/Disposal/Incineration/ Robert Ross & Sons, Inc.

State	EPA Region	Location	Name of Site/Owner/Operator
Ohio (Cont.)	V	Portage County	Treatment/Disposal/Summit National Liquid Services, Inc.
Oregon	X	Riddle	Hanna Tailing Ponds/Hanna Mining
		Lakeview	Alkali Lake/State of Oregon
		Lakeview	Uranium Mill Tailings (Inactive)
Pennsylvania	III	Ambler	Asbestos Dump/Certain-Teed Products/ Nicolet Industries (abandoned)
		Tobyhanna	Tobyhanna Army Deport landfill/ U.S. Army
Rhode Island	I	Smithfield	Landfill/William Davis
		Conventry	Disposal/Candy Box Farm
South Carolina	IV	Pickens	PCB Disposal/Sangamo Electric Co.
Tennessee	IV	Hardeman County	Burial site/Velsicol Chemical Corp.
		Waynesboro	City Dump/Champion Paper Co. (closed)
		Jonesboro	Disposal/landfill/incinerator/ Westplex, Inc.
Texas	VI	Texas City	Matea Petro Processors (abandoned)
		Dallas	Bio-ecology/Dr. Brown (Inactive)
Utah	VIII	Salt Lake City	Rose Park/Salt Lake City (Inactive)
		Salt Lake City	Old City/County Landfills
		South Salt Lake City	Vitro Tailings Pile/Vitro Chemical Co.
Washington	X	Hanford	Hanford Facility/U.S.D.O.E.
		Holden	Holden Tailings Pond/U.S. Forest Service
		Republic	Knobhill Tailing & Ponds/ Day Mines
		Spokane	Mead Plant/Kaiser Aluminum

State	EPA Region	Location	Name of Site/Owner/Operator
Washington (Cont.)	X	Ford	Uranium Tailings Pond/Dawn Mining Co.
		Wellpinit	Silver Buckle Tailings/ Colville Indian Reservation
		Colville	Vanstone Tailings Pile Formerly ASARCO
		Leadpoint	Calhoun Tailings Pond
		Hanford	Hanford Commercial Radioactive Waste Disposal Facility
		Marysville	Tulalip/Tulalip Indian Tribe Marine Disposal

Question: What authority does EPA have to regulate hazardous wastes?

The Resource Conservation and Recovery Act of 1976 (RCRA) mandates the establishment of a regulatory program to manage hazardous wastes from their generation to their disposal, including regulation of generators and transporters of hazardous waste and the permitting of treatment, storage, and disposal facilities. The Act requires the establishment of national standards to assure nationwide uniformity for hazardous waste management practices and the development of strong state hazardous waste management programs consistent with those standards. A set of seven regulations is required. Three have been proposed, and the remaining four will be proposed within the next several weeks. EPA's current estimate for the final promulgation of the hazardous waste regulatory program is January 1980.

Question: Until the regulatory program is promulgated what authority does EPA have to deal with improper management of hazardous wastes?

EPA and the states are attempting to deal with present instances of improper management of hazardous wastes to the extent that available authorities and resources allow. Many states have legal authority to deal with certain problems, and EPA has sought to work with and support their efforts. Section 7003 of RCRA authorizes EPA to seek injunctive relief to stop improper waste handling where it presents an "imminent and substantial endangerment to health and the environment." Our Regional Offices have taken initial action to use this authority in several instances of improper disposal which were subsequently remedied by state action. This is consistent with EPA's belief that states should have primary enforcement responsibility whenever practicable.

Question: Will EPA take additional enforcement actions?

Yes--in appropriate situations and in conjunction with the states.

Question: What authority does EPA have to deal with abandoned sites?

RCRA is not well suited to remedying the effects of past disposal practices which were unsound. EPA believes

3. An inventory and description of those sites for which EPA has information in its files (this is a further subset of the above estimates).

Question: How were the Regional Offices to obtain this information?

It was recognized that the estimates for Items 1 and 2 could only be "best professional estimates." The Regions were not expected to make any effort to "discover" sites (through field visits, substantial file searches or other means) for which information was not currently available. Rather, the Regions were expected to make estimates based on knowledge about present and past industrial activity and present and past disposal practices in each Region.

The purpose of Item 3 was to obtain a sample of the various sizes and types of incidents that might be expected in the total universe. A format was provided for supplying this inventory. It was expected that this information would be derived only from current regional files, although the solicitation of additional information and help from the States was encouraged where that could be done readily and conveniently.

Question: Why the broad variation in the Regional estimates?

Each Region developed its estimate based on its own assumptions. The material from each Region explains the method by which its estimate was developed.

Question: What is being done about the 103 sample sites which are specifically described?

Enforcement actions and/or remedial efforts have been taken at a large percentage of the sites. Enforcement personnel in EPA Headquarters and Regional Offices are considering additional enforcement actions at these sites and other sites in conjunction with the states under the authority described below.

Question: Are these the only hazardous waste disposal problems of which EPA is aware?

No. Over the past several years EPA has prepared assessments on over 400 cases of health and environmental damage from improper disposal of hazardous wastes--i.e. spills, indiscriminate dumping, and poor disposal. There is some overlap between those situations and the information provided by EPA's Regional Offices.

that Section 7003 authorizes enforcement action against the owner of an inactive site if the site is presently an imminent and substantial danger to human health or the environment, but there may be practical problems where the present owner of the site lacks sufficient resources to carry out the cleanup or other necessary steps.

Question: Is EPA conducting an inventory to identify abandoned sites?

EPA is encouraging the states to use a portion of their FY 1979 hazardous waste grant funds to conduct such an inventory. Several states, including Massachusetts, New York, New Jersey, and Michigan, have such an inventory underway.

In addition, Subtitle D of RCRA mandates a national inventory to identify open dumps. That inventory, which will be conducted by the states, is expected to begin in the summer of 1979. It will be supported by a portion of the $11.3 million in grants to the states under Subtitle D of RCRA.

Also, under the authority of the Safe Drinking Water Act EPA has provided grants of $5 million to the states to assess environmental and public health risks from pits, ponds, and lagoons.

Question: What can individuals do who are concerned about hazardous wastes?

An individual who has reason to be concerned should contact his or her local health department, the state environmental protection or health department, or the nearest Regional Office of EPA.

Q'S & A'S ON HAZARDOUS WASTE INFORMATION

Question: Why has EPA collected this information?

In the aftermath of the Love Canal emergency in Niagara Falls, N.Y., for which the Federal share of cleanup and rehabilitation will be $6 million ($2 million from the Federal Disaster Assistance Administration and $4 million as a demonstration project from EPA), the Office of Management and Budget (OMB) established a task force to assess the potential magnitude of Love Canal type incidents and to develop and assess various options for Federal policy with respect to such incidents. OMB asked EPA to collect information to assist the efforts of the task force. In addition to OMB, the task force consists of the Environmental Protection Agency, the Federal Disaster Assistance Administration, and the Council on Environmental Quality.

In addition, EPA believes that the Congress will very probably want to address issues surrounding prior disposal or storage of hazardous chemicals and substances during oversight hearings next year and will request EPA to supply substantive information on environmental incidents, both recent and potential.

Therefore EPA's Regional Offices were requested to provide information for these two purposes on October 2, 1978. (A copy of the memorandum requesting the information is attached.)

Question: What information was requested?

The Regional Offices were asked to provide the following information:

1. A rough estimate of the total number of landfill, storage and other sites that may contain hazardous wastes in any quantity which now or potentially could cause adverse impact on public health or the environment.

2. A rough estimate of the number of these sites that may contain significant quantities of hazardous wastes which could cause significant imminent hazard to public health (this is a subset of above estimate).

NINETY-FIFTH CONGRESS

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November 21, 1978

Honorable Douglas M. Costle,
Administrator
Environmental Protection Agency
Washington, D. C. 20460

Dear Mr. Costle:

I have just received your November 21, 1978 press release and associated materials concerning the "Regional Survey of Hazardous Waste Disposal Sites," and I have been informed by the EPA Congressional Liaison office that this material constitutes EPA's response to a request I made of Mr. Thomas Jorling at the October 30, 1978 hearings conducted by the Subcommittee on Oversight and Investigations of the Committee on Interstate and Foreign Commerce.

At the October 30 hearing on hazardous waste disposal, the subcommittee specifically asked that EPA compile for the subcommittee a complete list of hazardous disposal sites, not merely those which have already become sources of public controversy. The materials I receive today suggest that there are 638 sites across the country which pose imminent health hazards; yet the materials only include the locations of 103 of them. The natural question which still remains unanswered is: where are these other "imminent health hazards" located?

These materials completely fail to satisfy the request the subcommittee made of EPA at our hearings. I must therefore respectfully ask again that EPA compile a listing of all sites that could cause imminent hazard to the public's health and submit it promptly to the subcommittee.

Sincerely,

Albert Gore, Jr.
Member of Congress

AG/ac

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 22 1976

OFFICE OF WATER AND
HAZARDOUS MATERIALS

Honorable Albert Gore, Jr.
House of Representatives
Washington, D. C. 20515

Dear Mr. Gore:

Administrator Costle appreciates your November 21 letter concerning the EPA news release of that date and the related materials which accompanied the release when it was delivered to your office. The Administrator has asked me to reply.

I would like to clarify several communications that have occurred concerning this matter which seem to have caused some confusion.

The EPA Office of Legislation representative, who delivered the release and the materials to your office, informed your staff that the information was in partial response to a request of the Subcommittee at the oversight hearings on October 30, when you served as the Subcommittee Chairman. The representative further stated that the accompanying materials were reproductions of what is in the files at the EPA Regional Offices, and that more detailed information concerning what was in those materials could be obtained from the respective Regional Offices, should the Subcommittee staff wish to contact those Offices. A listing of the Offices, with addresses and telephone numbers, was also provided your Office staff when the news release and the materials were delivered on November 21. Identical material and information was conveyed to the Subcommittee professional staff.

The release and the materials covered the information that I had requested from the Regional Administrators in an October 2 memorandum. This request was discussed at the October 30 Subcommittee hearing. You may recall that, in response to your request at the hearing to receive certain information by December 1 (". . . the information within the

files in the regional offices . . ."), I later responded that ". . . as soon as we receive the material we will make it available to them (the Subcommittee staff) . . ." That is what we did on November 21.

In light of this, I would like to point out that the 638 figure (which should have been 838) is no more than "a rough estimate of the number of sites which may contain significant quantities of hazardous wastes which could cause significant imminent hazard to public health," as requested in my October 2 memorandum. It reflects the Regional Offices' best professional judgment on the number of sites that may fall within the category of "may contain significant quantities of hazardous waste which could cause a significant imminent hazard . . ." We do not know the location of all such sites, as many of the figures reflect State and Federal estimates only.

As I stated on October 30, our plan is to obtain further information on all sites in this category. We expect to do this through three major inventory efforts:

1. EPA is encouraging the States to use a portion of their FY 1979 hazardous waste grant funds to conduct an inventory of such sites. Several States, including Massachusetts, New York, New Jersey, and Michigan have such an inventory underway.

2. Subtitle D of RCRA mandates a national inventory of open dumps. That inventory, which will be conducted by the States, is expected to begin in the summer of 1979.

3. Under the authority of the Safe Drinking Water Act, EPA has provided grants of $5 million to the States to assess the environmental and public health risks from pits, ponds and lagoons.

I would also like to point out that the 103 sites specifically identified should not be construed as specific sites where there are "imminent health hazards." These are simply the ones on which we have the most information. Some have been cleaned up, and others are under litigation. They are not even necessarily the most dangerous sites.

I agree with you that the information which we have released is only a partial response to your request. We do not have the ability to perform a systematic survey of abandoned sites across the landscape. However, as pointed out in this letter, we have attempted to use our resources and those of the States to accomplish that objective.

I again ask you to watch our performance over the next several months to determine whether under its statutory authority EPA is acting to protect the public health and welfare from hazardous waste sites which are causing acute problems. For your information, I also am enclosing a status report from Region IV on its continuing efforts to address the problems associated with the Toone, Tennessee, landfill and contaminated land/water problem, in Hardeman County. I am also attaching a copy of the Hazardous Waste regulations which were proposed on December 18.

As I mentioned in the hearing, we appreciate the scrutiny which we are receiving from your committee and others regarding the management of hazardous waste and hope we can continue to work with you, so that the shared objective of protection of health and the environment can be achieved as quickly as possible.

Sincerely yours,

Thomas C. Jorling
Assistant Administrator
for Water & Waste Management

Enclosures