

POLLUTION PREVENTION



HOUSEHOLD HAZARDOUS WASTE: COLLECTION AND DISPOSAL OPTIONS FOR NORTH CAROLINA COMMUNITIES

POLLUTION PREVENTION PAYS PROGRAM

NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

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**HOUSEHOLD HAZARDOUS WASTE:
COLLECTION AND DISPOSAL OPTIONS
FOR NORTH CAROLINA COMMUNITIES**

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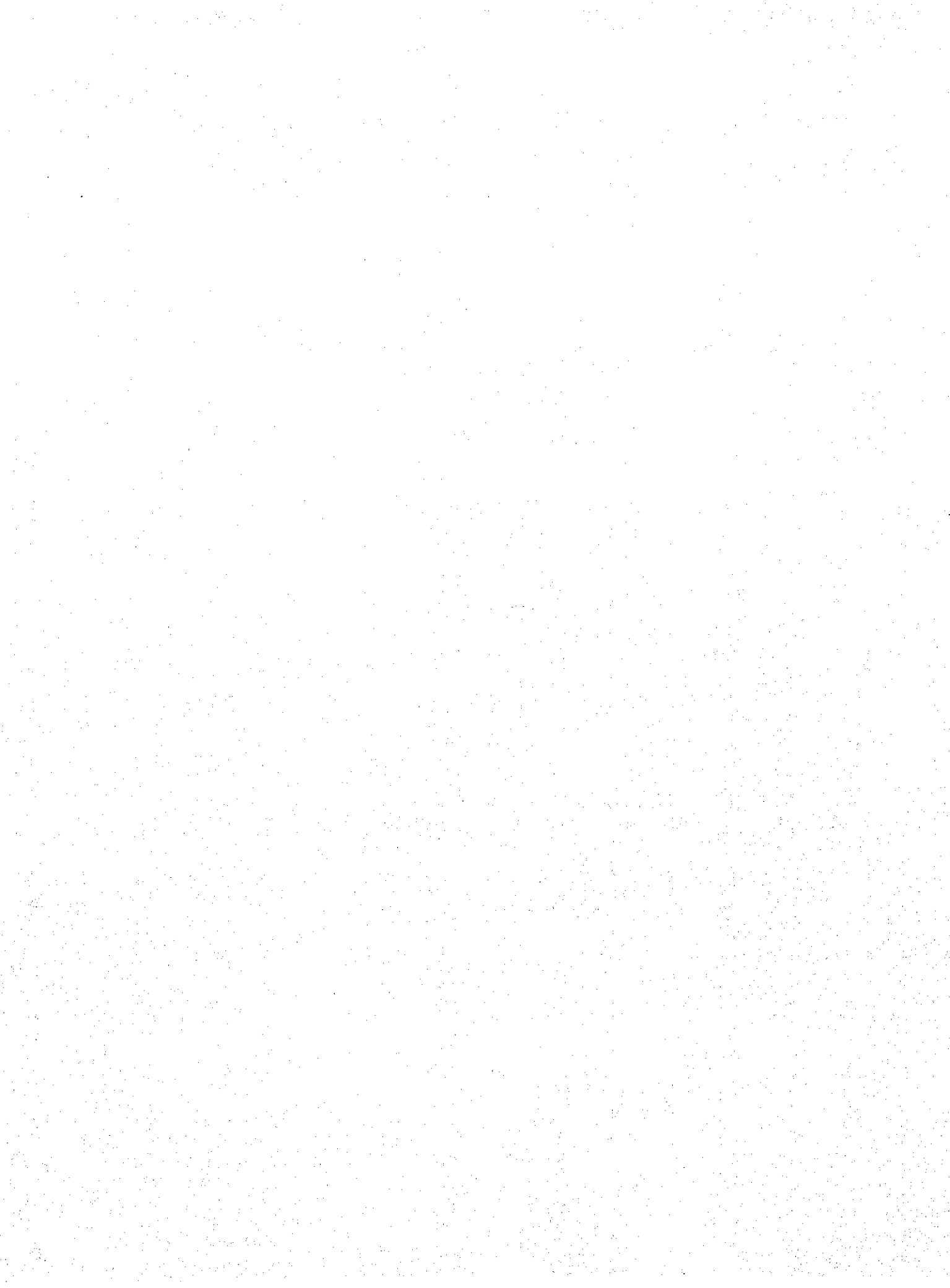
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THE POLLUTION PREVENTION PROGRAM

The Pollution Prevention Program provides free technical assistance to North Carolina industries and municipalities on ways to reduce, recycle and prevent wastes before they become pollutants. This non-regulatory program, located in the Division of Environmental Management, addresses water and air quality, toxic materials, and solid and hazardous waste. Designated as the lead agency in waste reduction, the Program works in cooperation with the Solid and Hazardous Waste Management Branch and the Governor's Waste Management Board. The services and assistance available fall into the following categories:

Information Clearinghouse. An information data base provides access to literature sources, contacts, and case studies on waste reduction techniques for specific industries or waste streams. Information is also available through customized computer literature searches. Waste reduction reports published by the Program are also available.

Specific Information Packages. The staff can prepare facility or waste-stream-specific waste reduction reports for industries and communities. Information provided by the facility is used to identify cost-effective waste reduction options. A short report detailing these options is provided along with references, case studies, and contacts.

On-site Technical Assistance. The staff can provide comprehensive technical assistance through facility visits. During an on-site visit, detailed process and waste stream information is collected. The information is analyzed, and a series of waste reduction options are identified. A report is prepared detailing these options and includes literature, contacts, case studies, and vendor information.

Outreach. The staff can give presentations on pollution prevention to industries, trade associations, professional organizations, and citizen groups. Depending on the audience, these programs range from an overview of the State's Pollution Prevention Program to in-depth discussions of technologies for specific industries.

Challenge Grants. A matching grant program provides funds for the cost of personnel, materials, or consultants needed to undertake pollution prevention projects. Projects eligible for grant funds range from characterizing waste streams in order to identify pollution reduction techniques to conducting in-plant and pilot-scale studies of reduction technologies.

For information or technical assistance contact:

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This manual is part of a larger project which could not have occurred without the commitment and backing of many people. The project, Household Hazardous Waste Collection and Disposal: A Model Program for Guilford County, North Carolina, was conducted in close association with the Guilford County Hazardous Waste Task Force, an independent citizens organization that monitors hazardous waste activities within the county. Mary Beth Edelman directed the project under the guidance of Frances M. Lynn, director of the Institute for Environmental Studies' Environmental Resource Project.

The preparation of the project manual was a lengthy task, but a learning experience for many who were involved throughout the process. It is intended to provide a concise overview of household hazardous waste programs in the United States, the advantages and disadvantages of sponsoring special collection programs to rid municipal landfills of hazardous waste, and the applicability of various program models to the North Carolina situation.

We would like to recognize and thank Meg Hanson for her dedicated research efforts on the manual and for many long hours spent conceptualizing this end result. The following individuals also deserve recognition for their assistance in reviewing successive drafts of the manual and for their encouragement and guidance throughout the project: Carolyn Allen, Richard Andrews, Gary Hunt, Frances Lynn, Melva Okun, William Paige, Philip Prete, Tricia Robertson and Roger Schecter.

We have tried to present what we felt was needed in the way of technical assistance and guidance on the collection and disposal of household hazardous waste in North Carolina. Every attempt was made to assure accuracy in the presentation of material and in the interpretation of complex legal issues. We would appreciate that any errors or omissions be brought to our attention.

Preface

The average citizen is somewhat familiar with hazardous and toxic waste issues, largely due to extensive media coverage that is generally given to spills and other incidences of environmental contamination from the use of hazardous substances. Few realize, however, that they contribute to the problem of hazardous waste generation through the use and disposal of hazardous substances in their homes.

When citizens become aware that they generate hazardous waste, they quite frequently look to their local health, fire, police departments and/or other public agencies to help them dispose of hazardous products that they have in their homes. The problem is complicated when public officials are unable to provide viable options for conscientious citizens who are concerned about the proper disposal of potentially harmful products.

If you have ever received a phone call from a citizen asking how he or she can identify and then properly dispose of a hazardous product, or if you have been in that position yourself, please read on. This handbook is designed to help public officials, interested citizens, and others interested in exploring possible solutions to the collection and disposal of hazardous waste generated in the home, commonly referred to as **HOUSEHOLD HAZARDOUS WASTE (HHW)**. It has been written to provide answers to questions that inevitably arise when an effort is made to find a solution to the problem of managing hazardous waste from households and some small businesses. Commonly asked questions include:

- **What is household hazardous waste?**
- **At what point does a household product become a hazardous waste?**
- **Why is HHW a problem?**
- **Who is responsible for the collection and disposal of HHW?**
- **What are some accepted methods of HHW disposal?**
- **What types of collection and disposal programs currently exist?**
- **What are the steps needed to plan and implement a program?**
- **Is it really worth the effort?**
- **Where can I find more information?**

This handbook describes existing programs and discusses in detail: program design, cost, legal and regulatory aspects of collection and disposal programs, and suggested schedules for planning and implementing a HHW program. It is designed to provide potential program sponsors with an introduction to HHW and to be used as a resource document in the planning stages of HHW program initiatives.

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I **What is household hazardous waste (HHW) ?**

"A hazardous household product becomes a household hazardous waste once it has been discarded."

Definition of HHW

Virtually everyone in this country uses hazardous chemical products. Our homes contain all types of products containing chemicals that can be dangerous to you and your family if not used and disposed of properly. These products typically include: spot removers, oven cleaners, disinfectants, waste motor oil, brake fluid and antifreeze, paints and solvents, wood preservatives, weed killers, bug spray, and a multitude of other potentially harmful products.

A hazardous household product becomes a household hazardous waste once it has been discarded. While most get thrown in with the rest of the daily trash, some get poured down sinks and drains, some are burned and others are poured on the ground or illegally dumped along roadside ditches. Consequently, HHW ends up in municipal landfills, in rivers, lakes and streams, or at the local waste water treatment plant, *none* of which are equipped to treat or contain the hazardous properties of the waste. The end result is often irreversible damage to our lakes, streams and groundwater supplies, as well as increased risk to the health of humans, plants, and animals.

Although the Environmental Protection Agency (EPA) has not officially or completely defined HHW, a generally accepted definition is that HHW is a discarded household material exhibiting at least one of the following characteristics:

- **Corrositivity** - dissolving materials and living tissues by chemical action (drain openers and oven cleaners)
- **Toxicity** - posing a poisonous hazard to human health or the environment, either immediately or over a period of time, if improperly managed (herbicides and insecticides)
- **Ignitability** - combusting spontaneously at relatively low temperatures (paint thinners and gasoline)
- **Reactivity** - reacting vigorously with air, water, or other substances resulting in explosions and/or the generation of toxic fumes (swimming pool chemicals).¹

Products exhibiting these characteristics often display warnings on the labels such as "flammable," "combustable," "poison," "skin and eye irritant," "injurious to the eyes and skin," "harmful if swallowed," etc. The lack of such a label, however, is no guarantee that the product is non-hazardous.

Potential hazards

Household hazardous waste typically presents two types of hazards:

- **Acute hazard** - the potential for a substance to cause immediate harm in a single exposure, or multiple exposures in a short period of time, to human health or the environment. A human health example is that of a child swallowing gasoline, or bleach splashing into a person's eyes.

- **Chronic hazard** - the potential for a substance to slowly cause harm to human health or the environment through repeated exposure over an extended period of time. An environmental example is the slow degradation of a lake or stream from pesticide and herbicide runoff from lawn care activities.²

Household hazardous waste has been grouped according to four main categories: yard and garden products, household cleaner products, automotive products, and paint and solvent products. Although a more complete listing of hazardous household products can be found in Appendix A, the following diagram will provide a general understanding of the types of household products that are considered hazardous when disposed of improperly.



Figure 1

EXAMPLES OF HOUSEHOLD PRODUCTS THAT MAY CONTAIN HAZARDOUS CHEMICALS

Household cleaner products:

drain openers, oven cleaners, furniture polish, rug shampoos

Yard and garden products:

bug spray, weed killers, slug bait

Automotive products:

gasoline, antifreeze, fuel additives, motor oil, car batteries

Paint and Solvent Products:

oil based paints, glues, strippers and removers, thinners

II Why is HHW a problem?

"While it is true that individually each household produces only a small amount of HHW, collectively we produce quite a bit."

How does HHW fit into the larger picture of hazardous waste generation?

A brief discussion of who generates hazardous waste will provide some background information to help answer that question. For the purposes of this discussion, there are three main categories of hazardous waste generators: **large quantity generators, small quantity generators, and a nebulous category of generators that includes nearly everyone else, usually referred to as very small quantity generators.** The determining factor in classifying generators was first established in 1976 when the Resource Conservation and Recovery Act (RCRA, P.L. 94-580) was passed by Congress and then amended in 1984.³ Typically, generator status is determined according to the amount of hazardous waste generated within a one-month period.

Large quantity generators are those commercial or industrial generators who produce more than 1000 kg. (2200 lbs.) of hazardous waste per month. They produce approximately 99% of all hazardous waste generated.⁴

Small quantity generators (SQG's) are those commercial or industrial generators who produce between 100 kg. (220 lbs.) to 1000 kg. (2200 lbs.) of hazardous waste per month. Until November 8, 1984, these generators of hazardous waste were not regulated. Small quantity generators typically include: service stations, printing companies (your local newspaper!), photography businesses, dry cleaners, construction companies, and metals manufacturing and finishing companies, to name a few. Small quantity generators produce approximately 0.4% of all hazardous waste generated.⁵

Very small quantity generators are essentially everyone else who produces hazardous waste – namely, you and me and millions of other private citizens, small businesses and institutions in the country who generate less than 100 kg. of hazardous waste. While it is true that individually each household produces only a small amount of HHW, collectively we produce quite a bit. Obviously, it would be nearly impossible to regulate HHW individually, on the basis of enforcement logistics alone. In North Carolina, those who generate household hazardous waste are considered as **very small quantity generators** or **V-SQG's** (pronounced "V - SQUIGS"). Very small quantity generators produce an estimated 0.08% of all hazardous waste generated.⁶

Presence of HHW in the residential waste stream

Collectively, households are thought to be the largest number of hazardous waste generators in the country, but it difficult to definitively say how much HHW is actually generated. Several studies have been conducted to assess the amount of HHW that is present in the residential (municipal) wastestream, but data collection methods vary considerably and, to date, there is no reliable national statistic to estimate HHW generation.⁷ The three primary studies that have attempted to estimate the amount of HHW were documented in EPA's 1986 report, A Survey of Household Hazardous Wastes and Related Collection Programs.⁸ Based upon this limited research, EPA cautiously estimates that HHW comprises anywhere from .00147 % to .5 % of the total residential waste stream.⁹

Who is responsible for HHW?

Good question. HHW is not regulated by federal law. By definition, HHW has the same properties (ignitability, corrosivity, reactivity or toxicity) that legally categorize it as a hazardous waste under RCRA, yet homeowners and other persons (e.g. hotel and campground owners) who generate hazardous household waste are specifically exempt under Subtitle C of RCRA. Therefore, they are not subject to regulation unless a state or local government chooses to impose regulatory control.

A number of states have taken the initiative to enact legislation that provides for the development of state-run collection and/or educational programs to address the HHW problem. At least eight states now have laws that address household hazardous waste at the program level. These include: Colorado, Florida, Iowa, Kansas, Minnesota, Missouri, Texas, and Washington. An additional four states, California, Massachusetts, New Hampshire, and Wisconsin have regulations and/or guidelines governing HHW (see Appendix B for a summary of state laws and legislation regarding HHW).

What are the motivations behind HHW collection and disposal programs?

Despite the lack of legislative mandate and the very small amount of HHW estimated as present in residential wastestreams, the sponsors of HHW programs are motivated by a number of concerns. Overall, the most significant concern is that HHW ends up in unsatisfactory places resulting in environmental degradation and added costs. A small amount of HHW can cause significant environmental problems, such as threatening a public water supply or other valuable water sources. For example, in Guilford County, NC, citizens complained of a fish kill in a neighborhood stream.¹⁰ When wastewater treatment officials investigated the incident, they were able to locate the source of the problem – a community resident who poured waste motor oil down a drain in his backyard, thinking that it drained to the waste water treatment plant and not directly to the stream. In this particular case, the citizen directly bore the brunt of the cleanup costs that resulted from his negligence. He was sent the bill from the hazardous waste firm that was called in to remedy the problem. Identification of the cause of such incidences is not always so easy, however, and local governments end up “picking up the tab.” Unfortunately, generalized environmental degradation is not nearly as easy to put a price tag on. The *prevention* of health, environmental and legal problems, therefore, is a strong impetus behind the development of HHW programs. The following sections discuss these issues in greater detail.

1. Prevention of accidents and exposure

Most documented exposures to HHW have involved persons or pets in and around the home or those individuals involved in waste collection.

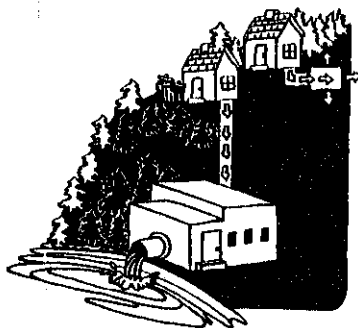
Consumers – At home, the removal of hazardous products reduces the chance of illness and injury. Antifreeze drained from an automobile radiator is toxic but is tempting to children and animals because of its sweet taste. An unmarked container of insecticide or herbicide may be extremely hazardous if used without directions or left in an area where children play.

Sanitation workers – When hazardous products are tossed in the trash, sanitation workers may suffer from exposure or direct contact with the substances.



"The prevention of health, environmental and legal problems . . . is a strong impetus behind the development of HHW programs."

"An average household septic tank contains over 100 traceable chemical pollutants originating from common products being flushed down the drain."



Consider this sampling:

- In Sacramento, California, a refuse collector was blinded in one eye from swimming pool chemicals that splashed on his face during compaction.¹¹
- In one year, 42 refuse collectors in Los Angeles County, California, were injured through eye contact, inhalation, and skin absorption of oil, battery acids, swimming pool chemicals, paints, solvents, freon, and unknown substances.¹²
- A two-gallon sealed container of ammonia burst under compaction and sprayed a refuse collector's eyes and face in Boyne City, Michigan.¹³

In other incidents, workers have escaped injury, but fires and explosions in trucks, landfills, and incinerators have occurred as a result of hazardous waste mixed in with municipal garbage.

2. Prevention of environmental damage

In a 1984 public opinion survey of North Carolina residents, almost nine out of 10 North Carolinians (87%) indicated that they would be willing to pay *more* for environmentally sound programs than for programs which cost *less* but may be harmful to the environment.¹⁴ On a national level, documentation of environmental concern of a more specific nature was revealed in a 1986 Harris Survey that indicated that 92% of Americans consider the disposal of hazardous waste a serious environmental problem.¹⁵

Groundwater – In the past, municipal landfills received household refuse, and commercial/industrial wastes (probably including hazardous waste). To quantify the HHW contribution to the contamination at these landfill sites and others is difficult, nevertheless, HHW is considered to be a factor. In a 1986 survey, the EPA reported that "indirect evidence indicates that HHW may contribute to groundwater contamination."¹⁶ The report cites 12 former municipal landfills that are on the Superfund hazardous waste site cleanup list (also referred to as the National Priority List). The basis for Superfund or the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, P.L. 96-510) was to require responsible parties (polluters) to assume cleanup costs for activities that resulted in environmental degradation. Given that approximately 20% of the sites on the Superfund list are sites that accepted municipal waste, the types of waste going to operating municipal landfills should be seriously examined.¹⁷

Septic tanks and drainfields are another avenue for contamination by HHW. An average household septic tank contains over 100 traceable chemical pollutants originating from common products being flushed down the drain. It has been shown that many of these compounds can migrate through soils to groundwater supplies.¹⁸

Surface water and sewage – In Seattle, Washington, hazardous components from HHW have been detected in surface water and in sewage. A study of urban streams in Seattle indicated that residents were disposing of pesticides improperly, causing surface water contamination.¹⁹ Analysis of wastewater indicated that some contaminants were from homeowners disposing of hazardous waste via the sanitary sewer system. Although no damage to the ecosystem was identified, these studies verify the presence of HHW in the environment and point to potential damage to ecosystems.

Air — In rural areas, the practice of open-air burning of residential garbage is

commonplace. Using this practice as a means of disposal becomes a threat to air quality and subsequently human health when HHW is mixed in with residential refuse. Explosions from hazardous products in garbage have been documented and have been suspect in the case of fires at municipal landfills.²⁰ In addition, the burning of HHW in municipal solid waste incinerators is partially the stimulus behind current research on emissions from incinerators.

3. Safeguarding against Superfund liability concerns

Health and environmental concerns are compelling enough for the initiation of HHW programs, yet the protection from liability concerns adds further weight to the importance of initiating a HHW program. If a contaminated municipal landfill is placed on the Superfund list, landfill operators and disposers, among others, may be held liable for past disposal practices.²¹ This responsibility is known as long-term (CERCLA or Superfund) liability. "Responsible parties" can include city and county governments who collect and dispose of residential waste in a sanitary landfill as a public service. The amount and type of waste a disposer has contributed at the site and the subsequent amount of environmental damage usually dictates the financial obligation required. From a legal perspective then, the removal of hazardous products from the residential wastestream can only benefit municipalities. If *no* hazardous waste from businesses is accepted and *no* hazardous waste is entering a landfill via the residential wastestream, then the possibility of environmental contamination from hazardous substances is essentially eliminated.

It should be noted that many HHW collection and disposal programs accept waste from businesses that are identified as SQG's under the federal RCRA program. On a national basis, approximately 70 HHW collection efforts out of a total of 544 have collected small quantity generator waste and HHW together.²² Program sponsors provide these businesses with a safe and legal method for disposing of their hazardous waste, rather than disposal down the drain or in a dumpster. Some programs charge the SQG's a reduced disposal fee for a predetermined amount of waste.²³

4. Promoting education and awareness

In the last 5 years, extensive media coverage has been given to industrial hazardous waste issues. Nearly everyone is at least vaguely aware of the events that occurred at Love Canal, New York, or at Times Beach, Missouri. Superfund has become a household word. Most citizens, however, don't make the connection between the generation of hazardous waste on a large scale and the contribution they make to the hazardous waste problem as uninformed disposers of hazardous products at home. There is a link between the waste produced by a chemical factory and the chemical products stored beneath the kitchen sink. Citizens also do not realize that consumer demand for superior quality products, such as shiny bicycle chrome, reinforces the generation of hazardous waste by manufacturers who have not found a substitute product of similar quality, or have not yet devised or implemented a process that minimizes the generation of hazardous waste as a by-product.

One of the educational goals of HHW programs is to illustrate the role that the consumer has in the production of hazardous waste and to communicate some major points to the public. First, hazardous waste is generated from hazardous household products once they have been discarded. Second, hazardous waste is generated as a by-product of manufactured goods. Third, hazardous waste from households can be reduced if consumers are given alternatives to hazardous products - ones with safe ingredients that won't irritate skin,

"There is a link between the waste produced by a chemical factory and the chemical products stored beneath the kitchen sink."



mucous membranes, or cause allergies, and won't present a disposal problem. With hazardous products that have no safe substitutes, such as many automotive items, recycling and safety tips are recommended. Finally, HHW programs encourage better home management practices such as buying only the amount of hazardous materials needed and storing potentially harmful products in a "child-proof," "pet-proof," and "leak-proof" fashion.

In summary, reasons for developing a HHW program include:

- Removal of HHW from homes and residential garbage, thus reducing the potential exposure and injury to residents and sanitation workers.
- Reduction of potential impact of HHW on the environment through groundwater, surface water and air pathways
- Prevention of contamination of septic tanks and wastewater treatment systems from disposal of hazardous waste down drains.
- Safeguard against Superfund liability for hazardous waste disposal at municipal sites.
- Identification of household substitutes that are less hazardous and present the proper home management options for hazardous products that homeowners choose to use.
- Provide HHW disposal options for citizens who possess and want to dispose of potentially hazardous substances properly.
- Increase general public awareness of hazardous materials found in homes and explain how consumers contribute to the generation of hazardous waste in the country.

Figure 2
HOUSEHOLD HAZARDOUS WASTE REFERENCE CHART

	SUBSTANCE	PROBLEM	PROPER DISPOSAL	ALTERNATIVES
YARD & GARDEN PRODUCTS	Rodent bait	Lethal to humans and pets in minute quantities, such as one taste.	Use up according to direction or take to hazardous-waste collection site.	Cats, traps, chopped bay leaves and cucumber skins
	Insect repellent	Poisonous. One teaspoonful may be lethal to an adult.	Use up according to direction or take to hazardous-waste collection site.	Screens, protective clothing, creams and lotions are occasionally effective.
	Garden herbicides, insecticides, fungicides, etc.	Poisonous. Can persist in the environment. Especially hazardous around food plants.	Use up according to direction or take to hazardous-waste collection site.	Strong hosing or hand picking, keep garden clean, use natural insecticides such as pyrethrins, or predators such as ladybugs.
HOUSEHOLD CLEANSER PRODUCTS	Drain cleaners	Poisonous. Can cause serious burns. May contain carcinogens.	Wash down drain with lots of water or take to hazardous-waste collection site.	Boiling water, plunger, metal snake.
	Oven cleaners	Poisonous. Can cause serious burns. May contain carcinogens. Spray cans the most dangerous.	Use up according to direction or take to hazardous-waste collection site.	Salt, quarter cup of ammonia overnight.
	Toilet cleaners	Poisonous. Can cause serious burns. One teaspoonful may be lethal to an adult.	Wash down drain with lots of water.	Mild detergent or small amounts of bleach.
	Spot removers	Poisonous. Most are solvent based. May be carcinogenic.	Use up according to direction or take to hazardous-waste collection site.	Immediate cold water and detergent, rubbing alcohol, or a little acetone.
	Silver polishes	Poisonous. Can cause serious burns. One ounce may be lethal to an adult.	Use up according to direction or take to hazardous-waste collection site.	Soak silver in water with baking soda, salt and small piece of aluminum foil.
	Furniture polishes	Include various poisonous solvents. One ounce may be lethal to an adult.	Use up according to direction or take to hazardous-waste collection site.	Mineral oil with lemon oil (but this may strip finish) or Carnauba wax.
	Cleaners & powder cleaners	Strong oxidizers. Poisonous. Can cause burns.	Wrap tightly in plastic, place in a box, tape shut, and put in garbage.	Baking soda and mild detergent, elbow grease.
	Window cleaners	Contain harmful chemical compounds and sometimes carcinogens. May cause birth defects.	Wrap tightly in plastic, place in a box, tape shut, and put in garbage.	Vinegar and water.
	Bleach & liquid cleaners	Contain strong oxidizers. Can cause burns.	Wash down drain with lots of water.	Use powder, not liquid bleach.
	Dyes	Poisonous, especially to children; don't use cooking utensils when dyeing. May be carcinogenic.	Wrap tightly in plastic, place in a box, tape shut, and put in garbage.	Use vegetable dyes such as onion skins, teas, marigolds.
	AUTOMOTIVE PRODUCTS	Motor oil, brake & transmission fluid	Contain poisonous chemical compounds. Oil also has lead, other metals. Fluid may be lethal.	Take to service station or local waste-oil recycling center.
Antifreeze		Sweet-tasting, poisonous, may be lethal; don't leave puddles where children, pets can get to them.	Wash down drain with lots of water.	None.
Car batteries		Contain lead and are highly acidic (can produce serious burns.)	Trade in or take to special recycling center (see phone book).	None.
PAINT & SOLVENT PRODUCTS	Paints *	Contain solvents and other poisonous chemical compounds.	Tightly wrap residue and place in garbage or donate to someone who needs paint.	None. Use water-based (latex) paint if possible, avoid aerosol sprays.
	Lacquer, varnish, thinner, & stripper	Poisonous. Solvent-based. Some are flammable and carcinogenic.	Use up according to directions or take to hazardous-waste collection site.	None, except for stripper (sand off old finish in well-ventilated area).

* Old, lead-based paints are toxic and should not be used. Take them to a hazardous-waste collection site (or store them until one is available).

Sources: Citizens for a Better Environment; Selina Bendix, Bendix Environmental Research, Inc.

III **What has been done about the collection and disposal of HHW?**

"Since 1981, an estimated 544 collection events for household hazardous waste have taken place across the country."

History of HHW programs

Just as recycling programs were "the rage" in the 1970's, household hazardous waste programs took the spotlight in the early 1980's. Since 1981, an estimated 544 collection events for household hazardous waste have taken place across the country.²⁴

A 5-day collection of pesticides in Lebanon, Kentucky is credited as being the first program for HHW.²⁵ In 1981, this Marion County Health Department effort resulted in the collection of nearly 2,000 pounds of pesticides from residents, small businesses, schools, and agricultural firms. In 1982, a collection day exclusively for HHW, was sponsored by the League of Women Voters in Lexington, Massachusetts.²⁶ A total of 93 households participated and some 770 gallons of HHW were collected. Since that time, a total of 33 states have followed suit and have either sponsored or have given their approval for local sponsorship of HHW programs (see Appendix C for summary of HHW programs).

Here in North Carolina, a two-day effort entitled, "Waste-Wise HHW Clean-up," co-sponsored by the Chamber of Commerce and the Boy Scouts, took place in Reidsville and Eden in April 1985.²⁷ The initiative for the program came from GSX Services, Inc., a local hazardous waste management firm, who wanted to conduct the collection as a community service. During the two-day event, over 100 residents brought their HHW to specified collection points and nearly 6,500 pounds of material were collected. The waste included pesticides, drain cleaners, batteries, oils, pool chemicals, and paints. Paint products alone (latex and enamel paints, stains and acrylics) accounted for approximately 40% of the total volume of waste. With a regional service center in Reidsville, North Carolina, GSX Services, Inc., had the capability to package the waste at the collection sites and then transport and dispose of the waste at their own facilities. To date, this is the only HHW program that has been conducted in North Carolina.

Selection of HHW program

Program type: The *type* of HHW program chosen is usually dictated by sponsorship, finances, and the determined (or perceived) need by a particular community. The first two components (i.e., sponsorship and finances) are closely related and often determine the long-term viability of a program. For instance, if a program is sponsored by a volunteer organization, it is likely to remain a one-time effort or, at best, an annual event. A city, county or state sponsor with potentially larger budgets and additional personnel can develop a more extensive program such as a permanent collection site, or at least a continuing event that is coordinated with the benefit of a paid staff person.

Determination of need: Holding a well-publicized *pilot* collection day program can help determine the need and expected utilization of a collection program in a given area. It is important to realize, however, that there is no single program type that is suited for *every* community. A rural, sparsely populated region may require only an annual two-day event. An urban or suburban area, however, may warrant a permanent collection site on city or county property. Determining the type of HHW program that is best suited to

meet the needs of a particular community will depend on any number of characteristics and circumstances that are unique to a given locality.

A survey of citizens in the community is another useful tool for determining residents' understanding of the HHW problem and estimating the need for a collection and disposal program. A community survey conducted in Guilford County, North Carolina indicated that citizens know relatively little about the presence of hazardous products in their homes, yet most (87%) were willing to participate in a HHW program if available in their county (see Appendix D for a description of the survey and its results).²⁸

What are the collection and disposal program alternatives?

There are five main types of collection and disposal programs for household hazardous waste: temporary collection sites, commonly referred to as "collection days", permanent collection sites, door-to-door collection services, mobile unit collection services, and telephone advice approach. The first two methods, temporary and permanent collection sites, are more popular approaches because they can generally be run with smaller budgets and require fewer logistical considerations than the door-to-door collection or mobile unit collection programs. The primary advantage that door-to-door and mobile unit collection programs have over the temporary and permanent site collections is a greater degree of convenience that they offer to the homeowner in terms of access to actual waste disposal services. Regardless of program type, telephone advice and educational materials are critical components that are usually built into the sponsor's design and budget. The following case studies illustrate the range of HHW collection programs and give examples of how each collection approach is organized, sponsored and funded, and provide other unique information that has contributed to the success of the program.

1. Temporary collection site service ("Collection Days")

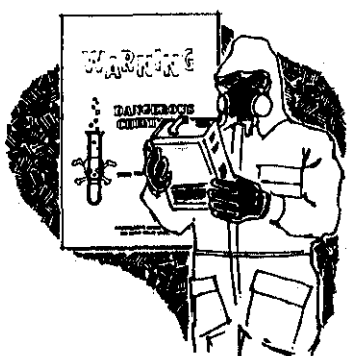
Albuquerque Environmental Health Department (AEHD)
Albuquerque, New Mexico

Overview: Planning for "Hazardous Waste Wise Days" began well over a year before the five-day event which was held in the fall of 1985.²⁹ A local chemical company donated the use of their warehouse, equipment and personnel. Other local companies made donations and offered reduced rates for additional materials and equipment needed. These contributions resulted in lowered operational costs and increased public visibility for the participating businesses. The media campaign for the event was extensive. As a way of generating additional interest in the event, more than 150 local civic groups viewed an educational slide show on HHW. Mailings, posters, radio and TV announcements and a press conference were other methods of publicity and education.

Results: In addition to households, the hazardous waste collection services were available to small quantity generators and city departments. One-thousand twelve households, 49 small quantity generators (SQG's), and 10 city departments participated. Approximately 118,000 pounds of waste were collected in the five-day period. Given the variety of sources, it is not surprising that the range of waste that was brought to the collection sites was vast. It included gasoline, sulfuric acid, DDT, cyanides, PCB's, lacquer, asphalt tar, antifreeze, drain openers, fungicides, and motor oil. Wastes that were not accepted included: radioactive and biological wastes, explosives, ammunition, and gas cylinders. The program served approximately 1% of the area's residents and was considered by the city to be "highly successful and met the

"Regardless of program type, telephone advice and educational materials are critical components that are usually built into the sponsor's design and budget."

"... small quantity generators who participated in the collection effort retained generator status for their waste and manifested it accordingly."



objectives originally established." One of those primary objectives was to increase public awareness of hazardous waste issues in the Albuquerque area.

Program cost and liability: Disposal costs alone were \$ 80,000. Public education costs were approximately \$10,000, and the estimated costs associated with staff time were \$42,000, bringing the total to \$132,000. The Albuquerque City Council and County Commission funded approximately 2/3 of the total program cost, while the remainder was provided by in-kind services. Various forms of liability insurance for incidents or accidents were carried by the site owner, the contractor, and the city. The hazardous waste management firm assumed long-term (CERCLA) liability for the HHW brought to the waste site, while small quantity generators who participated in the collection effort retained generator status for their waste and manifested it accordingly.

2. Permanent collection center

Department of Environmental Health Services (DEHS)
San Bernardino County, California

Overview: For nearly two years, San Bernardino County has operated two permanent sites (centers) for the collection of HHW.³⁰ The permanent collection centers are open Monday through Friday, 8:00 a.m. to 5:00 p.m.. One is operated by the staff of the County Agricultural Commissioner's office; the other is operated by firemen under the guidance of the staff at the Hazardous Materials Section of the Department of Environmental Health Services. Publicity efforts for the permanent collection sites and for the many one-day collection efforts held throughout the county include slide shows available to local organizations, posters, booklets, and reports. Advertisements on the radio, in newspapers, and in utility bills are also used to reach and inform the public.

Results: In an average month, enough hazardous materials are collected in San Bernardino County to fill approximately thirty, 55-gallon drums. Waste accepted is strictly limited to household waste in sealed containers whose contents are known. No small quantity generator waste is accepted and the program does not accept PCB's, radioactive wastes, explosives, or infectious wastes.

Program cost and liability: The HHW program budget has steadily increased with the increase in education, program studies, amount of waste collected, and expansion of facilities. In 1986, five more permanent collection centers opened in the cities of Redlands, Fontana, Victorville, Chino, Ontario, and Morongo Valley, California. In the 1986-87 fiscal year, the program budget for all seven centers was \$150,000 and is estimated at \$209,000 for 1987-88. Roughly 85% of this budget is financed by the county's solid waste tipping fees. The remaining 15% comes from miscellaneous land use fees, grant money, and a city surcharge in Redlands. In terms of liability, the DEHS assumes long-term (CERCLA) liability for the HHW collected, and San Bernardino County assumes liability for the day-to-day operation of the centers. In addition to the ongoing services offered by the permanent collection centers, the county continues to hold collection day events as a way of stimulating public awareness of the ongoing services of the collection centers. An average of seven highly publicized collection days are held at the permanent collection center each year.

3. Door-to-door collection service

Environmental Health Coalition (EHC - a non-profit community organization)
San Diego County, California

Overview: In the summer of 1984, a 12-week pilot door-to-door collection program took place in the city of San Diego and surrounding areas in the county.³¹ The program was operated by providing a telephone number to county residents to call to request a HHW pickup at their residences. Potential program participants were instructed as to the types of waste that would be accepted and a time they could expect the pick-up to take place. In addition to providing free disposal service to eight communities, the pilot project provided information and recommendations for an ongoing program in the area. The publicity incorporated approaches similar to those found in other programs: TV and radio announcements, utility bill inserts, slide presentations, flyers, and posters.

Results: In the eight neighborhoods served, 201 households participated and a total of 8,930 pounds of HHW were collected. The waste collected fell into the four major categories of HHW with an additional category which provided for the collection of "chemistry sets" and other miscellaneous household waste. Fifty-seven percent of the total waste stream was in the paint and solvent products category.

Program cost and liability: Total disposal cost was \$67,300. An estimated \$10,300 from donations and in-kind services was collected, bringing the total program cost to roughly \$77,600. The project was jointly funded by the city of San Diego and San Diego County. The final EHC report, however, indicated that the disposal costs incurred by the pilot program were unrealistically low for the several reasons. First, the hazardous waste treatment, storage, and transport company provided hauling services for the initial project at a reduced price. Second, the hazardous waste landfill utilized by the pilot project no longer accepts hazardous waste, and cannot be used for disposal in the future. Transportation costs, therefore, would be expected to increase due to an additional 100 miles required to transport the waste to the nearest facility. And finally, for the pilot project, the state of California waived the standard disposal tax for the waste generated. With no guarantee that this waiver will continue, the program sponsors anticipate this as an additional expense. The state of California assumed long-term (CERCLA) liability for the HHW collected.

"Fifty-seven percent of the total waste stream was in the paint and solvent products category."

4. Mobile unit collection

Department of Environmental Regulation (DER)
Tallahassee, Florida

Overview: Florida was the first state to fund and operate a *statewide* HHW collection program.³² Created in 1983 by the passage of the Water Quality Assurance Act, "Amnesty Days" is designed to collect and dispose of HHW and hazardous waste from small quantity generators and some institutions. The program is designed to visit each county with a two-trailer collection unit. Trailers are set up in separate locations simultaneously and are operated for periods of one to six days, depending upon county population and anticipated participation from the small quantity generators. A total of 14 chemists and two DER representatives operate the two sites.

"Amnesty Days" publicity is extensive. At least four months prior to the collection event, DER personnel meet with a county representative and a



**"The
'Hazards Line'
typically
receives
30 to 60 calls
a day,
five days
a week."**

representative from each of the school systems to be visited. The local representatives are briefed and asked to choose well-known and easily accessible sites. Five to six weeks before the event, civic groups and the press are contacted, marking the beginning of a local campaign with mailers, posters, utility bill inserts, and media announcements.

Results: The goal of the "Amnesty Days" program was to visit all 67 Florida counties—a goal that was attained by May 1987. The program collected an estimated 1.5 million pounds of hazardous waste from over 12,200 homeowners, businesses, and institutions. Wastes that are *not* accepted include radioactive wastes, biological wastes, aerosol cans, dioxin containing wastes, and explosives. The average household participation level of Florida residents in the "Amnesty Days" program corresponds with the national participation in HHW collection day efforts, averaging approximately 1% of the population. Even so, the benefits of keeping just that much waste from reaching Florida's imminently endangered groundwater supply are great.³³

Program cost and liability: Funding for this sophisticated operation has reached nearly \$3 million over the last three years. Until now, the program has been financed on an annual basis through appropriations from the Florida legislature. At the time this publication was written, however, new legislation to fund the program had just failed to pass in the legislature due to a procedural error on the part of the bill sponsors.³⁴ Although disappointed, state DER officials seemed optimistic that new legislation would be introduced and passed in the next legislative session due to the overwhelming grassroots support of the program. Several counties have indicated their intent to run their own collection day programs despite lack of funding at the state level.

The disposal cost to the participant is free as long as *total* waste amounts are kept under one 55-gallon barrel, or 450 pounds. For any amount of waste beyond that, the contractor offers a discounted fee of 25% off the regular disposal fee. The hazardous waste contractor for the program assumes long-term (CERCLA) liability for the HHW collected from residences, for the hazardous waste collected from government offices and for small quantity generator waste at or below the designated limit of one barrel.

5. Telephone advice and referral service

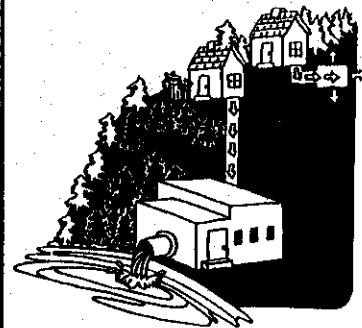
Seattle/King County Department of Public Health
Seattle, Washington

Overview: This program offers telephone advice to citizens through its "Hazards Line" on the proper disposal of automotive products, pesticides, paints and solvents, household cleaners, and miscellaneous products (e.g. hobby products and swimming pool chemicals).³⁵ In the case of useable, uncontaminated paint, citizens are given the phone numbers of local organizations that will accept it as donations to be used for plays and other theatrical projects. Residents can arrange to drop off their pesticide waste at one of six storage and transfer stations. This service is offered free of charge. As a community service, a local hazardous waste management firm accepts a full range of HHW products one day a week from 10 a.m. - 3 p.m.³⁶ The "Hazards Line" also provides disposal information for small quantity generators. Depending on the waste type, a SQG can be referred to upwards of half a dozen chemical firms. Disposal service for SQG waste is *not* free.

Results: The "Hazards Line" typically receives 30 to 60 calls a day, five days a week. Many questions are answered through a variety of pamphlets provided by the program. In addition to the five hour drop-off period at the

hazardous waste firm, approximately four to five hours are expended at the pesticide waste stations each week.

Program cost: The cost of operating the Hazards Line is \$ 40,000 per year, plus an additional \$10,000 per year for mailing costs, computer services, and other associated costs (this does not take into account personnel costs for handling pesticide waste at the six storage and transfer stations). The "Hazards Line" has been in operation since 1984 and is funded through the county's general fund and from solid waste tipping fees from the city of Seattle and King county.³⁷ The transportation and disposal of the HHW collected is provided free of charge by local hazardous waste management firms. The health department assumes the long-term (CERCLA) liability for the HHW and is also responsible for the waste until it leaves the the six storage sites and transfer stations.³⁸



IV How to organize a collection day

"Inadequate publicity and funding and the inaccessibility of a collection site have spoiled more than one event."

Keeping the first event in perspective

The first-time effort of a collection day event accomplishes three things. It clears HHW from kitchens, basement, garages and bathrooms; it introduces the subject of HHW to the community; and it helps assess the need for future HHW collection and disposal events.

The mistakes of a pilot project, however, can be costly in many ways. Poor program planning, and thus poor participant turnout, will discourage sponsors from developing another program—even if the community demand is great. Inadequate publicity and funding, and the inaccessibility of a collection site have spoiled more than one event.

Careful planning is not totally foolproof, however. Even with an adequate publicity campaign and other favorable factors, the community response might remain low simply because the program is a *new* service and residents are not accustomed to incorporating it into their daily lives.

A series of educational programs and disposal services in Seattle, Washington illustrate the reasons why a program sponsor should not rely *solely* on the initial program participant level when determining the need for future HHW activities. In the winter of 1982, the first Seattle HHW project took place in a 4,000 household test area.³⁹ With a local neighborhood advertising campaign (door-to-door flyers, posters, flyers to school children, etc.) the three-week collection period yielded less than six 55-gallon drums of hazardous waste. This did not include waste motor oil which was collected separately and recycled. In addition, approximately fifteen people brought in waste ranging from DDT to sulfur dust. The sponsors of this project attributed the low turnout rate to the time of year (winter), the public's general unresponsiveness towards a new service, limited use of mass media, and the choice of neighborhood in which to hold the collection event.

Project sponsors were not thwarted by this low response. Since this first event in 1982, the metropolitan area of Seattle has engaged in numerous other HHW projects including a drop-off disposal service for specific waste types. Five years after the pilot project, a one-day collection event in May, 1987 yielded over 800 55-gallon drums of HHW.⁴⁰ With a massive television and radio publicity campaign reaching throughout the metropolitan area and the simultaneous operation of four sites, over 4,000 households disposed of their waste in the 7.5-hour period—a substantial difference from the 55 participants in the 1982 pilot project.

Sponsoring a collection day in North Carolina

The program sponsors of the recent 4,000 participant collection day in Seattle drew from over five years of experience. New program sponsors can expect to learn by trial and error initially, but should be able to use successful HHW programs to help design an appropriate program model. In other parts of the country such as California, Massachusetts, and Florida, potential sponsors have the benefit of assessing well-established programs in their areas. In North Carolina, however, future program sponsors have only one experience to examine (the Reidsville/Eden event) as a way of estimating potential program

success. It is reasonable to say, therefore, that any new HHW project in North Carolina will be of a "pioneering" nature.

Presently, North Carolina does not have any laws or permanently established programs that pertain *specifically* to HHW. When queried about the position the North Carolina Solid and Hazardous Waste Management Branch would assume regarding HHW programs held in North Carolina, a spokesperson stated that, "... the Branch would be supportive of a well-planned Household Hazardous Waste collection day and that it would be advisable to contact the Branch during the early planning stages. Early contact would insure that the planning group is cognizant [sic] of current regulations and interpretation, and liability issues." It was further stated that each collection program would "be evaluated on its own merit to insure compliance with current regulations."⁴¹

It is relatively certain, therefore, that proposals to plan and implement a HHW collection effort in North Carolina will be reviewed by state officials on a case-by-case basis. Program sponsors should communicate early with state and local officials to clarify areas of uncertainty and to avoid delays in program implementation. See Appendix E for a listing of persons knowledgeable about HHW in the state of North Carolina.

Steps in developing a collection program

Step 1. Literature review. First in order is an extensive literature review on the subject, starting nine to twelve months before the event. Most sponsors produce final reports on their programs and will send them free of charge. Generally included are an itemized list of program costs, a discussion on liability decisions, recommendations for future programs, publicity angles, advertising examples, site location plans, a list of waste accepted and excluded, and miscellaneous information. The following three resources are highly recommended:

- A manual from Golden Empire Health Planning Center, entitled Hazardous Waste: Solving the Disposal Dilemma, contains a wealth of information in over 300 pages of advice. It offers examples of insurance contracts, public service announcements, advertisements and useful information from HHW programs across the country.
- The League of Women Voters of Massachusetts offers a 20-page kit, Household Hazardous Waste Collection, based on the experience of League-sponsored programs over a three-year period.
- EPA's Survey of Household Hazardous Waste and Related Collection Programs defines HHW, discusses the impacts of HHW, examines case studies of a variety of local and state-sponsored programs, and presents a clear interpretation of legislation affecting HHW programs and their relevance to liability concerns.

Information on these and other materials can be found in the Additional Resources section. In any case, it is best not to attempt to "re-invent the wheel": learn from previous efforts.

Step 2. Identify potential sponsors; form a steering committee; assign a lead agency and program coordinator. Potential program sponsors are drawn from civic groups, businesses, and local government. Civic groups that have traditionally worked on HHW programs include the League of Women Voters, local girl and boy scout troops, a variety of environmental groups, the Lions,

"... the Branch would be supportive of a well-planned Household Hazardous Waste collection day..."

"To encourage community participation, most HHW disposal services have been provided free of charge to the community resident."



Club and local Chambers of Commerce. Industrial and chemical businesses, including local hazardous waste management firms, have often sponsored events through contributions of funding, equipment and personnel. Local businesses of all types can be approached to sponsor an event. Government agencies have also served as sponsors. Examples of government agencies include those responsible for hazardous waste management, solid waste management, water quality, environmental health, and public safety. Other potential participants include city councils, county commissioners, county/city environmental health offices, firefighters, water quality control programs, agricultural extension services and public works departments. When a coalition of groups and agencies are drawn together, it is essential from an organizational standpoint to form a steering committee. In addition, a lead agency and a program coordinator should be assigned.

Step 3. Explore funding possibilities—A basic problem for those initiating HHW programs is financing. To encourage community participation, most HHW disposal services have been provided free of charge to the community resident. The high costs associated with HHW programs (i.e., hazardous waste disposal, program equipment, promotional activities and qualified personnel at collection sites), therefore, require carefully developed budgets. As previously mentioned, commercial hazardous waste management firms and chemical manufacturers have frequently co-sponsored temporary collection programs by providing financial donations outright, or in-kind services such as equipment and trained personnel. In turn, the program publicity helps to promote the public image of the sponsor. Appendix F displays the innovative efforts in Barnstable, Massachusetts and Sacramento, California, that resulted in lowered program costs.

Potential sources of funding: Often programs are financed with a combination of civic group, local and state government, and industry funds. Consider these suggestions:

State government: In some instances, the state can be approached to fund or subsidize HHW programs.⁴²

- In Florida, the state legislature passed the Water Quality Assurance Act in 1983 which established a Water Quality Assurance Trust Fund. Monies for the trust fund came from a one-time appropriation of 11 million dollars. Subsequent funding on an annual basis came from 50% of the interest earned from investments of the Florida Coastal Protection Trust Fund. Only a small portion, however, was used for Florida's Amnesty Days program.
- Rhode Island supports collection programs under the Hazardous Waste Bond Fund. The monies are generated by or from the general fund.
- In some states, state "Superfund" monies have been used to fully fund or partially subsidize local HHW program efforts.

Local government: In most cases, programs are financed by local governments through a variety of mechanisms. Examples include:

- An increase in refuse collection bills and/or water bills
- An increase in tipping fees at municipal landfills
- General tax revenues

- Special assessments placed on parcels of privately owned land
- Tax revenues from sewer and storm water utilities

Business: Companies have also funded or subsidized programs or have donated their professional services, for example:

- Funds solicited directly from local businesses help defray program costs
- Hazardous waste firms located in or nearby the sponsoring community have fully or partially absorbed costs through in-kind donations

Program users: User fees or donations from participants have also been employed. This method of program subsidy, however, usually results in a much lower turnout from the community than a program that provides the collection and disposal of HHW free of charge.

Step 4. Investigate liability status—Program sponsors have often expressed concern over the liability associated with their involvement in a HHW program. There are two primary areas of concern with respect to potential liability: **general (short-term) liability** resulting from the actions of personnel in conjunction with the *collection site*, and **long-term (CERCLA) liability** resulting from the future impacts of the waste at the *disposal site*.

General (short-term) liability involves:

- Collection program personnel
- Volunteers participating in the program
- Property damage that may occur at the collection site
- Damage, injuries or other incidents that may occur while the waste is being transported from the collection site

In most cases, the hazardous waste management firm (the "contractor") assumes liability for its employees that are handling the waste at the collection site. The contractor is also responsible for keeping the collection site under control. The best way for program sponsors to minimize their liability is to select a reputable hazardous waste contractor and spend the necessary time to develop a comprehensive contract that clearly defines each party's responsibilities (see Appendix G for a contract example). It is always in the sponsoring agency's best interest to restate in its contract with the hazardous waste firm that this area of liability is assumed by the firm. Such a statement does not, however, release the sponsoring agency from all liability. If the collection site is on the property of the sponsoring agency and is staffed by any of the sponsoring agency's employees or members (i.e., city and/or county workers), then the *sponsoring agency* is responsible and must assume liability. Typically, these aspects of liability are usually protected by insurance carried by the program sponsor. In some cases, however, a special rider has been required by the sponsor's insurance company.⁴³

Long-term (CERCLA) liability: The fact that HHW is exempt from RCRA regulations does not exempt HHW from CERCLA liability when collection programs are instituted.⁴⁴ Essentially, what this means is that any person, organization or government agency that acts as a program sponsor could be classified as a generator of the waste and could be held liable for future impacts caused by waste at the disposal site (i.e., pollution from the site) and



"... no sponsor of a HHW program is known to have been held liable for HHW disposed of in a hazardous waste landfill."

any clean-up cost associated with it. A recent issue of *Waste Age* magazine, however, stated that no sponsor of a HHW program is known to have been held liable for HHW disposed of in a hazardous waste landfill.⁴⁵

A final word of caution: some program sponsors have recognized the disposal needs of small quantity generators of hazardous waste and have established programs to collect hazardous waste from this group as well. Of the 544 HHW events across the country, seventy have included both HHW and SQG waste.⁴⁶ Currently, EPA states that once SQG waste is collected and *mixed* with HHW, *all* of the waste is then regarded as hazardous waste under RCRA, and is subject to regulation.⁴⁷ Program sponsors can avoid this issue by making sure that any SQG waste is kept separate from HHW during all stages of collection, handling, packaging, and disposal.

In summary, much depends upon who the program sponsor is, where the actual collection of waste takes place (i.e., who owns the site?), the type of insurance coverage that the program sponsor has, and the contractual arrangement made with the hazardous waste management firm. In the process of negotiating with a hazardous waste management firm, the possibility of having the firm assume CERCLA liability for the waste should be discussed.

Step 5. Invite bids from contractors; work with state and local officials on proposed program design—The program design rests heavily on the funding sources and in-kind services donated from businesses, public agencies and civic organizations. It is beneficial to have several different program designs in mind when approaching potential sponsors and contractors. Arriving at a final design and workable contract will take a substantial amount of coordination between all parties.

The design of a program includes site selection, the type of waste accepted and excluded, any special services offered to elderly and handicapped residents, the season and specific date (weekday or weekend), hours of operation, a citizen "hotline", publicity, education, and a variety of insurance considerations. Many aspects of the design will depend on the hazardous waste management firm that handles the program waste; some contractors do not handle waste motor oil or dioxin-containing substances, while others do.

After drafting a "notice for inviting bids," personnel at the Solid and Hazardous Waste Management Branch and the appropriate local officials should review the bids (see Appendix H for an example from a program sponsored in Palo Alto, California). The appropriate local agency to review contracts depends on the location of the site and who owns it, that is, is it county-owned, city-owned, or privately owned in a county's or city's jurisdiction? It is important to review any ordinances that might prohibit or restrict waste collection, storage, and/or the transportation aspects of the program in the area being considered. Calls should begin at the county and/or city attorneys' and managers' offices. Following the initial review by state and local personnel, rewrite the bid accordingly and meet again with both sets of personnel after the contractors' bids return.

Ideally, a sponsor should accept bids from at least five potential contractors with strict attention given to line items. In North Carolina, three hazardous waste management firms are currently permitted to accept and treat hazardous waste. These firms are GSX, Ecoflo, and Caldwell Systems. A call to the Solid and Hazardous Waste Management Branch of the North Carolina Department of Human Resources can confirm the number of firms located within the state (or out-of-state) that could provide their services for the collection effort (see Appendix E).

Figure 3

SOME MAJOR COSTS ASSOCIATED WITH COLLECTION PROGRAMS

Firm	Drum Costs	Landfill ^(1,2)	Line Items			Set-Up Charge	Misc.
			Incineration ^(3,4)	Transportation	Personnel		
Firm A	\$35 new 26.50 reconditioned	\$198/drum includes transp.	\$530/drum includes transp.	included in disposal cost	\$39/hr.	—	Protective Gear 9.50/set
Firm B	\$30	\$120-\$180/drum	\$250-\$500/drum	\$3.75/mile/load	\$45/hr.	—	—
Firm C	\$38.75	\$110/drum	\$58.50/5 gal.	\$22.50/drum	\$40/hr.	—	—
Firm D	—	\$200(average)/drum	\$270(average)/drum	\$3.25/mile/load	—	—	—
Firm E	\$35	\$148/drum	\$200/drum	\$1.62/mile/load	\$45/hr.	—	—
Firm F	\$25	\$90(average)/drum	—	\$32/drum	\$47/hr. ⁽⁴⁾ collection facility	\$2407 for	—
Firm G	\$40	\$150-\$180/drum	\$200/20 gal.	\$35/drum	\$45/hr. \$2310 weekday	\$2895 weekend \$15/person	Protective gear
Firm H	\$41 including packing material	\$130-\$170/drum	\$500/drum	\$1/mile/load	\$40/hr.	—	Cost included in personnel costs

A word about contractors: Contractors for HHW programs can vary drastically in their cost estimates.⁴⁸ Some contractors act as "brokers" while others may actually own the facility to which the waste is taken. In the latter instance, a better treatment/disposal price may be obtained. However, other costs such as transportation may be higher.

When figuring costs, therefore, it is important to compare line items. Some firms may charge high on one and low on another. Keep in mind that the firm offering the lowest price may not always be the best qualified. Check the service record and experience level of each. Are they in good standing with state and local regulatory agencies? Have they collected HHW before?

Some contractors are willing to give discounts as a community service, at least for the initial collection effort. Different methods will be used for calculating prices and some contractors will charge a flat fee while others will have price scales for different waste categories. Some firms quote prices for 55-gallon drums while others may use prices for 30-gallon drums. Prices also vary according to the disposal method used (i.e., incineration, landfilling, etc.). It is important to know that the contractor works closely with the firm treating or disposing of the waste. Situations have occurred where the contractor packaged a waste that was not accepted by the disposal facility and the drum had to be taken apart and repackaged. Costs can escalate quickly under such circumstances. *Watch out for hidden costs!!* Ask questions, be specific, and always get information in writing.

Step 6. Publicize the program—Many programs have started a good year in advance with publicity beginning four to six months before the scheduled event. A press packet for radio stations, television stations, newspapers, and

"Keep in mind that the firm offering the lowest price may not always be the best qualified."

**Figure 4
PROJECT COST COMPARISONS ⁽¹⁾**

Program	# Households in Service Area	Hours of Operation	Households Participating	Drums Collected	Operational ⁽²⁾	Cost/ Drum	Cost/ Household	Cost/House- hold In Area	Major Waste Destination
Fresno Co., CA	110,000	10	600	165	\$20,000 ⁽³⁾	\$121	\$33	.18	Secure landfill (CA)
Marin Co., CA	60,000	5	1000	244	\$38,928	\$160	\$39	.65	Secure landfill (CA)
Orange Co., CA	750,000	27	3313	1856	\$283,271	\$153	\$86	.37	Secure landfill (CA)
Palo Alto, CA	15,000	5	250	110	\$20,000	\$182	\$80	1.33	Secure landfill (CA)
Sacramento, CA	280,000	8	1024+	393	\$34,713 ⁽⁴⁾	\$88	\$34	.12	Secure landfill (CA)
Santa Barbara, CA	55,000	6	375	103	\$22,863	\$222	\$61	.41	Secure landfill (CA)
Lexington, MA	10,000	6	137	35	\$8,000	\$228	\$58	.80	Secure landfill (NY) and incineration (IL)
Bedford, NH	4,297	4	132	25	\$8,100	\$324	\$61	1.88	Secure landfill (SC) and incineration (IL)
Lebanon, NH	13,194	5	240	38	\$13,718	\$361	\$57	1.03	Secure landfill (NY) fuel blending (CT)
Morris Co., NJ	138,000	5	98 ⁽⁵⁾	50	\$20,000	\$400	\$204	.14	Incineration (SC) and secure landfill (NY)
Rhode Island	State Program	21	583	64	\$25,666	\$401	\$44		Incineration & some landfilled (MA & IL)
Travis Co., TX	234,432	7	450	155	\$59,193	\$382	\$132	.25	Landfill (LA)
Fairfax Co., VA	244,000	20	724	437	\$112,560	\$258	\$155	.46	Incineration (TX & LA)
Waukesha Co., WS	93,000	6	228	112	\$33,068	\$295	\$145	.35	Secure landfill (SC) Incineration (IL & NY)

¹ Prices vary according to amount of labor/labor costs, mileage to facility, waste treatment/disposal method used, prices of individual firms, number of participants, type and number of participants, type and amount of waste collected, and cost reductions given by hazardous waste management facilities involved with the program.

² Includes operational expenses such as sorting and packaging the material, transportation, disposal and equipment.

³ Disposal costs were provided free of charge by the hazardous waste management firm.

⁴ This involved four separate sites on four different occasions.

⁵ Costs were low due to in-kind donation of waste management firms.

⁶ Towns in New Hampshire and Vermont were invited to participate.

⁷ This figure included 2 farmers and 2 other unspecified sources.

Source: Golden Empire Health Planning Center, 11-86

special-interest newsletters should be developed. The press packet should contain a cover letter describing the logistics and purpose of the HHW program. It should also contain a press release with information on who sponsors the program, when, where and why it is occurring, and the types of waste that will be accepted and excluded. A phone number for citizens who have questions should be provided and a statement by a recognized public figure sparks interest in the message. The press packet should contain a fact sheet on the dangers of hazardous products in the home and other educational information. Educational pamphlets for the project can be substituted in place of the fact sheet. Finally, a public service announcement (PSA), should be written. Many stations will develop their own PSA's while others will air the PSA submitted as part of the press packet. PSA's generally run in 10, 20, or 30 second spots.

Figure 5

PUBLIC AWARENESS SCHEDULE FOR THE ALBUQUERQUE, NEW MEXICO HHW COLLECTION PROJECT

April	May	June	July	August	September	October
Logo	Finalize Art Layout	Letters to Interest	1st Water Bill		2nd Water Bill Mailing	
Brochure	- Brochure	Groups	Mailing		(Reminder Card)	
- Design	- Flier (Journal	- Develop	(Brochure)			
- Graphics	Insert)	- Begin Mailing				
Develop Slide/ Tape Presentation	- Card (Water Bill)	Begin Contacts for	-----	Slide/Tape Presentations	-----	Collection Event October 18-22
- Script	- Magnets	Interviews	-----	-----	-----	
- Slides	Bids out for	- Newspaper	-----	Brochure/Magnet Distribution	-----	
Donations	Printing	- TV		-----	-----	
- Graphics	Finalize Slide/ Tape Presentation	- Radio		Busboard Distribution	-----	
- Printing	- Audio	- Magazine		-----	Flier Distribution	
Water Bill Mailing Reservation	- Slides			-----	Newspaper Inserts	
	Duplicated Slide/ Tape			-----	Talk Shows/PSA's	
	Determine Con- tacts			-----	Schools	
	- Media/PNM					
	- Stores					
	Determine Ven- dors					
	- Brochures					
	- Filers					

Source: Albuquerque Hazardous Waste Collection Project, 3-86.

Telephone calls to selected individuals at the station should follow mailing of the press packet. This ensures that the proper person received the packet and it offers an opportunity to propose radio or television interviews with program sponsors. It cannot be overemphasized how important it is to provide a "hot-line" number for the public. In the San Diego pilot project, over 900 calls were received after the press packet publicity was initiated.⁴⁹

Many other methods can be employed in the publicity campaign. A number of these approaches however, can be quite costly. A savings in printing costs may be obtained by soliciting the donation of services by a local printing company, or the cost of the pamphlet can be lowered with free services from a local graphic artist. In turn, these businesses will receive free publicity for their civic effort. Promotional materials from two HHW collection programs are displayed in Appendix I.

Step 7. Design the overall program—The number of issues and details to be considered when designing a HHW may appear overwhelming. In the early stages of the program, brainstorming sessions with members of the steering committee will start the ideas rolling. As the different facets of the program are formulated, individuals should be assigned research tasks. Begin to identify

"Probably the best advice to a potential collection day sponsor is to plan for the unexpected."

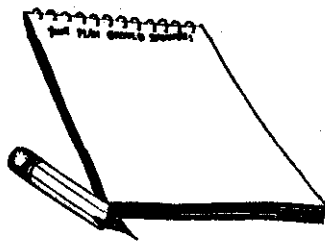
Figure 6

MECHANISMS FOR GETTING THE WORD OUT

utility bill inserts	brochures
bus placards	press conferences
direct-mail announcements	tape presentations
billboard advertising	slide shows
posters	bumper stickers
hot air balloon advertising	kick-off events
skywriting advertising	door hangers
trashcan decals	interviews (radio and television)
paycheck inserts	media advertising (radio, television and newspaper)
shopping bag advertising	articles (newspaper and magazine)
flyers	Public Service Announcements (PSAs)
displays	

potential collection sites. A list of suggested sites can be drafted, followed up with on-site inspections, and a possible trip to the county or city tax assessor's office will help determine ownership status of each of the sites.

Probably the best advice to a potential collection day sponsor is to plan for the unexpected. Define the users of your program (households, SQG's, public institutions, or farmers). Plan ahead in the event a SQG arrives with waste. If the SQG waste is turned away, provide a listing of firms that will accept the waste. Even though all of the program publicity may explicitly exclude radioactive waste, leaking containers, unidentified waste, explosives, motor oil and antifreeze (the latter two can often be disposed of at a local service station), *expect* all of these items. Many program sponsors have adopted the philosophy that excluded waste should be accepted in order to prevent them from ending up in dumpsters on the way home.



Utilize local resources. If the community has a bomb squad, ask the team to donate their services the day of the collection in the event that explosives arrive at the collection site. If you choose to exclude used motor oil, make prior arrangements with a service station to take the waste.

If limits are set on the maximum amount of waste per household (or car) in an effort to stay within your disposal cost budget, a decision should be made as to what to do in the event the participant level is extremely high. If the disposal contract is limited to "x" number of barrels, an agreement prior to the collection day can be established that arranges for the disposal costs for all waste *in excess* of the targeted amount. In some instances, these additional disposal costs have been donated by the contractor. Other options for handling an "unexpected" volume of waste include: a provision to have the main funding agency agree to spend additional monies to handle the safe disposal of the excess waste, or to terminate waste collection prematurely if the excess were to lead to significant cost overruns.

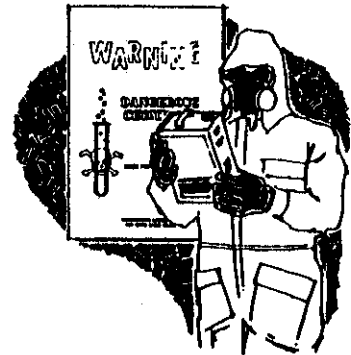
Step 8. Conduct the program — Coordination between employees of the hazardous waste management firm, volunteers, paid personnel and any additional persons at the site must be concise. An organizational meeting prior

Figure 7

ORGANIZING A COLLECTION DAY

- educate yourself on the issue
- identify potential supporters and discuss the program with them
- call a meeting of key supporters who can assist with the project implementation
- form a steering committee, lead agency, and program coordinator
- educate key supporters and discuss the successes of other communities
- determine funding sources and allocation of funds
- determine in-kind contributions
- determine overall program design and implementation
- determine insurance coverage
- gain approval of design from appropriate state and local agencies
- select hazardous waste contractor
- develop publicity/education campaign
- implement the program
- evaluate the experience with predetermined criteria

Source: Household Hazardous Waste: Solving the Disposal Dilemma, 1984.



to the event should be held to predetermine the hierarchy of authority in the event of an accident. A "trouble-shooter" with primary responsibility to coordinate all facets of the operation should be appointed. Early organization is critical and will be appreciated by everyone involved on the day of the collection. Once the event begins, it is important to keep cars and people flowing. It should be decided ahead of time at what point the participants are asked to fill out paperwork, such as questionnaires. To speed up the process, volunteers can ask the questions. A sufficient number of traffic directors should be available in the event that traffic overflows into adjacent streets.

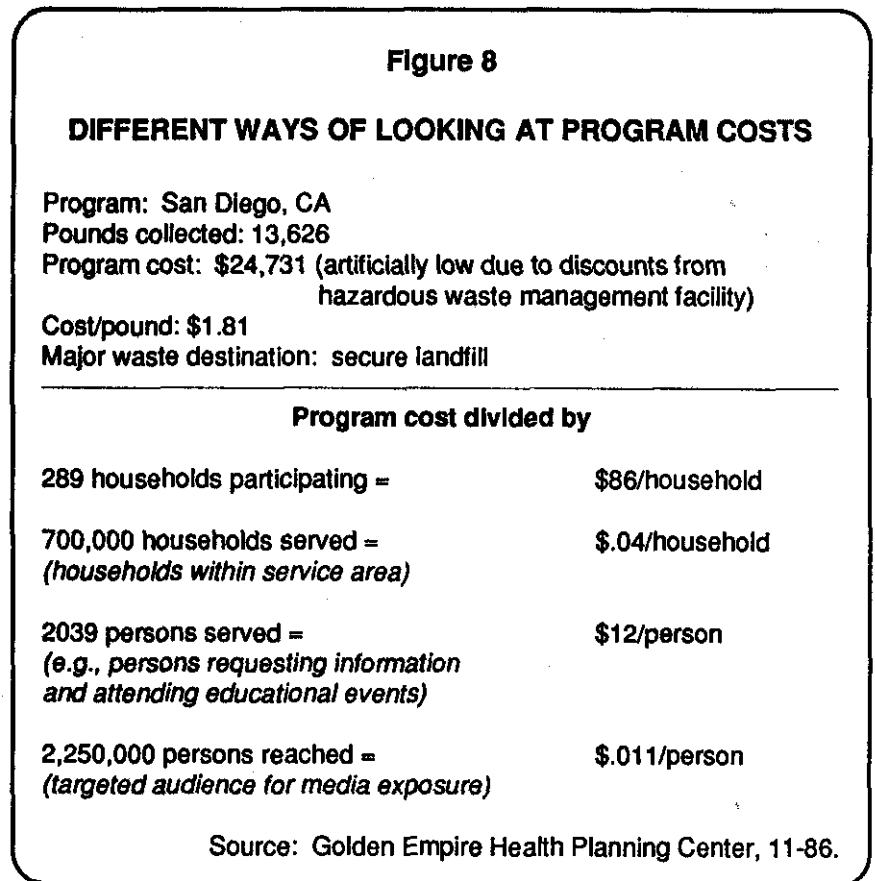
Step 9. Evaluation and follow-up activities—Immediately following the event, it is wise to assess the event for successes and possible shortcomings. These observations should be documented in a final report along with program costs, contractual arrangements, and recommended options for future HHW programs. The type of publicity that was most effective in recruiting the majority of the participants (a question on the participant questionnaire) should be documented. Everyone involved in the program deserves thanks and local media should be provided follow-up stories on the event.

V Summary: Is it really worth the effort?

Without a doubt, the cost of sponsoring a HHW program is high. In addition, program planning and execution is complicated and some liability questions have not yet been legally challenged. After weighing the pros and cons of sponsoring a collection day or considering the establishment of an ongoing program for HHW, many potential program sponsors become disillusioned and abort their initial interest in the idea. Although this is a common reaction, the fact that more than 500 collection efforts have taken place thus far is a good indication that the idea is not as complicated as it seems. A closer look at the two main issues that create most concern for program sponsors, i.e., program cost and liability, may help alleviate some of those concerns or at least shed a different light on the issue of sponsoring a program.

Program cost: The following chart is based upon a collection program in San Diego, California.*

"... the fact that more than 500 collection efforts have taken place thus far is a good indication that the idea is not as complicated as it seems."



At first glance, \$86 per household may seem high for collecting household hazardous waste from only .04% of the program area's population (289 households out of a possible 700,000). What this calculation does not take into account, however, is the *hidden* impacts of the program, that is, the benefits that are not directly obvious at first glance. Although it is difficult to quantify, perhaps the most beneficial aspect of a household hazardous waste program is the *educational benefit to the community* as the result of the extensive publicity

campaigns that normally accompany any type of collection effort. A closer look at the chart reveals that when the total cost of the program is divided by the number of persons who request information and/or attend educational events *regardless* of their actual participation in the waste disposal event, the cost is approximately \$12 per person served – a figure that probably more palatable to a local financial manager assessing the pros and cons of sponsoring a HHW program. If only a *single* disposal mishap is prevented due to the education of those citizens who phoned and asked questions or who attended an educational session, the \$12 per person is well spent. Finally, the intangible (unrecognized) benefits of reaching all those persons who were previously unaware of the presence of hazardous waste in their homes, is invaluable. If the total program cost is divided by the total population of the target area (2,250,000), the cost drops to only *one tenth of one cent* per person. Granted, it is unreasonable to assume that everyone in the program area will become aware of the program's existence; however, fairly high awareness levels have been achieved when extensive publicity campaigns have been instituted to inform and educate the public on a specific issue.²⁴ Substantial effort, therefore, should be put into a comprehensive advertising campaign prior to any event. If behavioral change is to take place in terms of the proper disposal of hazardous substances, the first step is to work toward an informed citizenry. The second step, of course, is to provide options for citizens to take action once they have been educated and are ready to utilize available disposal services.



Program liability: It is ironic that the same legal issues that have caused some communities to *refrain* from sponsoring HHW programs have also served as an incentive for other communities to *initiate* HHW programs. A common reason for such program initiatives is that counties or municipalities who own and operate municipal landfills are responsible, under CERCLA, for pollution caused by their own facility at a *later* date. In essence, local governments are "caught" either way. The decision to take a risk and sponsor a HHW collection program (and be faced with potential liability for doing so) versus taking no action and allowing hazardous waste to accumulate in a municipal landfill (that is not designed for hazardous substances and may result in environmental degradation and other detrimental consequences) is a difficult one.

Summary: There is evidence that more and more temporary collection day efforts are evolving into permanent collection sites and the establishment of ongoing HHW programs.²⁵ Local government officials are faced with complex waste management decisions, such as: increasing difficulty in siting municipal landfills, decreasing capacity for municipal solid waste, increased regulatory control over small quantity generators of hazardous waste, and anticipation of more stringent regulatory control over municipal solid waste (when EPA issues proposed solid waste regulations at the end of 1987).

The establishment of HHW collection and disposal programs to remove some of the undesirable components of the municipal waste stream and prevent their improper disposal is just one of many compelling reasons to explore the HHW program issue further. The decision to *initiate* a HHW collection and disposal program, however, is strictly up to public officials and community leaders who have assessed the needs of their community and the citizens they represent. We hope that the information presented in this manual will assist those in decisionmaking roles and help make some of the difficult decisions easier.

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Additional Resources

Reports and booklets

- Household Hazardous Waste: Solving the Disposal Dilemma. 1984. Gina Purin. Golden Empire Health Planning Center, 2100 21st St. Sacramento, CA 95818 **
- Dispose of Household Hazardous Waste Safely: A Report on Sacramento County's Household Poison Project. 1983. Gina Purin. Golden Empire Health Planning Center, 2100 21st St. Sacramento, CA 95818
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Brochures

- Meet the Browns. Institute of Chemical Waste Management, 1730 Rhode Island Ave. NW, Suite 1000, Washington, DC 20036.
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- Hazardous Waste: What you should and shouldn't do. 1986. Water Pollution Control Federation, 601 Wythe St. Alexandria, VA 22314-1994.
- Disposal: Do it right, Managing Household Wastes. The Household Products Disposal Council, 1625 Eye St. NW, Suite 500, Washington, DC 20006.
- A Guide to the Safer Use and Disposal of Hazardous Household Products. Metropolitan Area Planning Council, 110 Tremont St., Boston, MA 02108.

Other materials

- The League of Women Voters of Massachusetts, 8 Winter St., Boston, MA 02108 (purchase and rental information):
Beginning at Home. 1986. Video cassette or 16 mm film. **
Household Hazardous Wastes: Everyone's Problem. 1984. Audio slide show.
Household Hazardous Waste Collection. 1985. How-to kit.

** denotes references used in this handbook

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- Dana Duxbury
The Center for Environmental Management
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474 Boston Ave.
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San Bernardino, CA 92415 (714) 387-4629
- Greg Lee
Florida Department of Environmental Regulation
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Tallahassee, FL 32301 (904) 487-3892

Organizations

- Environmental Action Foundation
724 Dupont Circle Bldg.
Washington, DC 20036
- National Solid Waste Management Association
1120 Connecticut Ave. Suite 930
Washington, DC 20036
- League of Women Voters
1730 M St. NW
Washington, DC 20036
- Citizen's Clearinghouse for Hazardous Waste
P.O. Box 926
Arlington, VA 22216
- Environmental Defense Fund
1525 18th St. NW
Washington, DC 20036

Appendices

Appendix A

List of hazardous household products

Source: Triangle J Council of Government, 1985. Hazardous Household Products: A Guide to Safer Use and Disposal. Research Triangle Park, NC.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
GENERAL HOUSEHOLD CLEANERS		
Bleach ("Tackle Cleaner and Disinfectant")	Sodium or Calcium Hypochlorite	Corrosive and irritating to skin, eyes, and breathing passages. Never mix with ammonia, vinegar or other acids (may produce very toxic gases).
Propellants in Aerosol Sprays ("Endust")	Nitrous Oxide, Propane Isobutane, Dichlorodifluoromethane, Trichlorotrifluoroethane	Can be explosive. Aerosol sprays produce vapors that can easily be inhaled, increasing the health effects of other materials in the product. Some propellants are flammable, irritating, or may cause drowsiness.
Ammonia ("Top Job")	Ammonia	(See Window Cleaners.)
Other	Sodium Dodecyl Benzeneulfonate, Trisodium Phosphate, Sodium Tripolyphosphate, EDTA	Irritating to skin and mucous membranes. EDTA causes birth defects in laboratory animals.
Laundry and Dishwasher products ("All")	Sodium Silicate, Linear Alkylate Sulfonate, Sodium Bisulfate, Sodium Carbonate, Sodium Metasilicate	Some are irritating or corrosive.
Disinfectants (regulated as pesticides) ("Lysol Disinfectant")	O-phenyl Phenol, O-Benzyl-parachlorophenol, 4-chloro-2-cyclopentylphenol, Carboic Acid, Cresol, Trithylene Glycol, Diethylene Glycol, Pine Oil	Irritating, may affect nervous system, kidney or liver. Some can be absorbed through the skin. The long-term effects are not well studied.

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

(* Indicates products that are presently banned, restricted, or otherwise not allowed for consumer use.)

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
CLEANERS USED IN BATHROOM AND KITCHEN: OVEN, DRAIN, TOILET BOWL CLEANERS		
Bases ("Easy-Off")	Sodium Hydroxide (lye), Potassium Hydroxide, (also Ammonia; see window cleaners, below).	Extremely corrosive, damages skin, eyes, and breathing passages.
Acids ("Vanish")	Sulfuric Acid Hydrochloric Acid	Extremely corrosive
Solvents	Methylene Chloride Paradichlorobenzene, 1,1,1 trichloroethane	May cause cancer, irritation, or react dangerously when mixed with other chemicals.
Window Cleaners ("Windex")	Ammonia	Very irritating to skin, eyes, and breathing passages. Harmful to aquatic life in very low concentrations.
Metal Cleaners ("Wright's Brass Cleaner and Polish")	Phosphoric Acid, Ammonia	Irritating to skin, eyes, and breathing passages.

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
-------------------------------	--------------------------------------	-------------------

POLISHES USED THROUGHOUT THE HOUSE

Fabric, Furniture, and Shoe Car Cleaners; Polishes, Waxes, etc. ("Wood Green", "K2R")	Naptha, Nitrobenzene, Oil of Cedarwood, Methylene Chloride, O-dichlorobenzene, Perchloroethylene, Propylene Dichloride, Xylene, Trichloroethylene, 1,1,1-trichloroethylene, Ethylene, Carbon Tetrachloride*, Benzene*.	Dangerous to inhale. Narcotic in high concentrations. Some damage the nervous system, liver, kidney. (Risks may be greater for persons with heart or lung problems.) Some may cause cancer.
Nail Polishes and Nail Polish Removers ("Super Nails")	Acetone, Dibutyl Phthalate, Formaldehyde, Toluene	Some may cause headaches, or cancer.

PAINT PRODUCTS KEPT IN HOBBY AREA

Alcohols("Circa 1850 Furniture Stripper")	N-Butanol, Ethyl Alcohol (grain alcohol)	Flammable, irritant.
Hydrocarbons ("Park's Paint Thinner")	Mineral Spirits, petroleum Ether, Toluene Napthas, Xylene	Some are flammable, irritating to eyes, skin, and breathing passages; some may damage the nervous system.
Ketones and Esters ("Strypeeze Paint & Varnish Remover")	Acetone, Butyl Acetate, Ethyl Acetate, Methyl Isobutyl Kerone, Methyl Ethyl Ketone.	All are flammable, irritating; some cause nervous system damage.
Other Solvents ("Park's Quit 'n Time Brush and Roller Cleaner")	Methylene Chloride, Perchloroethylene, 1,1,1-trichloroethane	(See furniture and shoe care polishes.)

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual product may contain additional or fewer chemical ingredients than those listed.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
-------------------------------	--------------------------------------	-------------------

Turpentine

Combustible, toxic, irritating to eyes, skin, and breathing passages; skin allergen, may damage kidneys, lungs, cause headaches.

CAR PRODUCTS KEPT IN GARAGE

Gasoline	Benzene, EDB, Ethylene Dichloride, Organic Phosphorus, Tetraethyl Lead.	Benzene, EDB, and ethylene dichloride cause cancer. Very toxic and hazardous to people and the environment.
Lubricating Oil ("3-in One Household Oil")	Tricresylphosphate Barium Compounds, Lead	May cause damage to nervous system, kidneys and other organs. Dangerous to aquatic organisms.
Batteries	Sulfuric Acid	Very corrosive.
Antifreeze ("Zerex Antifreeze/Coolant")	Ethylene Glycol	Combustible. Small amount can be lethal if ingested.
Brake and Transmission Fluid ("Gunk DOT 3")	Propylene Glycol, Mineral Oils, Petroleum Hydrocarbons, Metal Contaminants	Combustible, toxic.

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
PESTICIDES USED ON LAWN, GARDEN, HOUSEPLANTS, PETS		
Insecticides		
Organophosphates ("Real Kill Ant and Roach Killer")	Acephate, Azinphosmethyl, Aapon, Chlorpyrifos, Demeton*, Diazinon, Dichlofethion, Dichlorvos, Disulfoton, Ethoprop*, Fonofos Isafenphos, Malathion, Methamidophos*, Mevinphos*, Naled Parathion*, Phorate, Ronnel, Stirofos Triclorfon	Some are extremely toxic. Interfere with the nervous system and may cause long-term nervous system effects (behavioral, etc.) Toxicity may vary greatly in combination with other chemicals. Are readily absorbed by the skin.
Carbamates	Aldicarb*, Bendicarb, Carbaryl, Carbonfuran, Methomyl, Oxamyl, Propoxur, Zectran	Interfere with the nervous system. Some may cause reproductive problems.
Organochlorines ("Kwell Shampoo")	Aldrin*, Benzene Hexa- Chloride*, Chlordane*, DDT*, Dicofol*, Dieldrin*, Endosulfan, Endrin*, Heptachlor*, Heptachlor Epoxide*, Kepone*, Lindane, Methoxychlor, Mirex*, Toxaphene*.	Accumulate in fatty tissue. Extremely persistent in the environment. Most are suspected or known to cause cancer and mutations.
Herbicides		
Chlorophenoxy ("Ortho Weed B-Gon")	2,4-D, Dichlorprop, MCPA, MCPB, MCPP, Mecoprop, Silvex*, 2,4,5-T*	Some (2,3,5-T, silvex), contain a contaminant (2,3,7,8-TCDD, a dioxin) that is one of the most toxic substances known. Other are irritating, may affect nervous system.

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
Bipyridyls ("Wechinger Vegetation Killer")	Diquat, Paraquat*	Liver, kidney and severe lung damage. A tiny amount of paraquat is lethal when ingested.
Nitrophenols	Binapircryl Dinitrophenol, Dinitro-Orthocresol (DNOC)	Highly toxic, readily absorbed through skin and lungs. Damage to liver, kidney, and nervous system.
Arsenicals ("Ortho Contax Weed Grass")	AMA, Cacodylic Acid, DSMA, MSMA	Persistent, toxic. Toxicity depends on chemical form of arsenic. Some forms cause cancer, mutations, birth defects, g.i., liver, and/or kidney damage.
Other ("Ortho Triox Vegetation Killer")	Amitrole*, atrazine, Barban, Benefin, Bensulfide, Bentazon, Mecoprop, DCPA Dicamba, Dichlobenil, Diuron, Glyphosate, Monuron, Prometone, Propanil, Propham, Siduron, Simazine, Triflurlin	Vary in toxicity. Most have not been studied for long-term effects. Many cause irritations.
Fungicides		
Metallic Compounds	Cadium, Chloride, Mercuric Chloride, Mercurous Chloride.	Very toxic.
Dithio-carbamates ("Security Zineb Spray")	Ferban, Maneb, Naban, Thiram, Zineb, Ziram	May cause cancer or birth defects. Degrade in body, in environment, and during cooking in food to ETU, which may also cause these effects.
Carbamates ("Beneiate")	Benomyl, Thiophanate- methyl	(See Insecticides)

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

Product (Type and Example)	Examples of Hazardous Ingredients	Potential Hazards
Other ("Orthocider")	Anilazine, Captan, Chloroneb, Chlorothalonil, Folpet, Iprodione, Thiabendazole, Triadimeform	Vary in toxicity. Some (captan, chlorothalonil) may cause cancer and birth defects.
<u>Rodenticides</u>		
Anti-Coagulants ("D-Con Pellets")	Coumatfuryl, Diphacinone, Pindone, Valone, Warfarin	Inhibit blood clotting.
Inorganics	Phosphorus, Thallium Sulfate*, Zinc Phosphide	VERY HAZARDOUS! DO NOT USE.
Other ("Nott's Mole-Nots")	ANTU, Fluoroacetamide (Compound 1081)*, Norbormide, Red Squill, Sodium Fluoroacetate, (Compound 1080)*, Strychnine Sulfate.	Compounds 1080, 1081 and strychnine sulfate are highly toxic. The other compounds are less toxic.
Wood Preservatives ("Weldwood Wood Preservative")	Copper Naphthenate, Creosote, Pentachlorophenol, Zinc Naphthenate	Extremely toxic. Avoid using if possible.

NOTE: The use of brand names implies neither endorsement nor criticism of specific products, but is intended for illustrative purposes only. Actual products may contain additional or fewer chemical ingredients than those listed.

Appendix B

Summary of state laws and regulations for HHW

Source: Duxbury, D., 1986. State level household hazardous waste laws and regulations. Medford, MA: Tufts University, The Center for Environmental Management.

STATE LEVEL HOUSEHOLD HAZARDOUS WASTE LAWS AND REGULATIONS

	Evaluation Report	State Cleanup Program	EPA Cleanup Grant	Use of State Superfund \$	State Legislative Approp.	Pilot Program	State Matching Grants	State Education Program	Regulations and/or Guidelines	Law	1987 Bills Pending	Study	Define HHW	Reduction of Liability
1. Alaska														
2. Alabama														
3. Arizona														
4. Arkansas														
5. California			✓		✓		✓	✓	✓	✓			✓	
6. Colorado							✓	✓	✓	✓				
7. Connecticut														
8. Delaware												✓		
9. Florida					✓			✓			✓			
10. Georgia														
11. Hawaii														
12. Idaho														
13. Illinois														
14. Indiana														
15. Iowa										✓				
16. Kansas										✓				
17. Kentucky										✓				
18. Louisiana														
19. Maine														
20. Maryland														
21. Massachusetts														
22. Michigan					✓		✓		✓					
23. Minnesota						✓			✓					

DATE: Nov. 1986
SOURCE: Tufts Univ. CEM (617) 381-3486

STATE LEVEL HOUSEHOLD HAZARDOUS WASTE LAWS AND REGULATIONS (cont.)

	Evaluation Report	State Cleanup Program	EPA Cleanup Grant	Use of State Superfund \$	State Legislative Approp.	Pilot Program	State Matching Grants	State Education Program	Regulations and/or Guidelines	Law	1987 Bills Pending	Study	Define HHW	Reduction of Liability
24. Mississippi														
25. Missouri					✓					✓				
26. Montana														
27. Nebraska														
28. Nevada														
29. New Hampshire					✓		✓		✓					
30. New Jersey				✓										
31. New Mexico														
32. New York														
33. North Carolina														
34. North Dakota														
35. Ohio														
36. Oklahoma														
37. Oregon														
38. Pennsylvania														
39. Rhode Island														
40. South Carolina					✓									
41. South Dakota														
42. Tennessee														
43. Texas									✓	✓				
44. Utah														
45. Vermont														
46. Virginia					✓									

DATE: Nov. 1986
SOURCE: Tufts Univ. CEM (617) 381-3486

STATE LEVEL HOUSEHOLD HAZARDOUS WASTE LAWS AND REGULATIONS (cont.)

	Evaluation Report	State Cleanup Program	EPA Cleanup Grant	Use of State Superfund \$	State Legislative Approp.	Pilot Program	State Matching Grants	State Education Program	Regulations and/or Guidelines	Law	1987 Bills Pending	Study	Define HW	Reduction of Liability
47. Washington								✓	✓	✓			✓	
48. West Virginia														
49. Wisconsin					✓		✓	✓	✓					
50. Wyoming														

Appendix C

Household hazardous waste collection programs, 1981-1986

Source: Duxbury, D., 1986. Household hazardous waste collection programs, 1981-1986. Medford, MA: Tufts University, The Center for Environmental Management.

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

ALABAMA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Emelle	4/20/85	Chemical Waste Mgt.	Gordon Kenna	(205) 652-6721	Chem. Waste Mgt.	same			30

ALASKA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Anchorage	5/9-14/83	Dept of Env Cons	Colleen Burgh	(907) 274-2533	Chem Securities			5,500 gals.	
Fairbanks	5/16-24/83	DEC	Jeff Mock	(907) 452-1714	Chem Waste Mgt				
Anchorage	S '84	DEC	Colleen Burgh	(907) 274-2533	NW Env Svcs			9,075	
Fairbanks	5/14-19/84	DEC	Jeff Mock	(907) 452-1714	NW Env Svcs				
Juneau	5/19-20/84	DEC	Steve Haavig	(907) 789-3151	NW Env Svcs				
Anchorage	S '85	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton		\$150,000	18,150	
Fairbanks	S '85	DEC	Jeff Mock	(907) 452-1714	Crosby & Overton			4,235	
Juneau	S '85	DEC	Steve Haavig	(907) 789-3151	Crosby & Overton			3,300	
Kenai	S '85	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton			3,740	
Anchorage	S '86	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton		\$ 90,000	14,960	300
Fairbanks	S '86	DEC	Jeff Mock	(907) 452-1714	Crosby & Overton				
Juneau	S '86	DEC	Steve Haavig	(907) 789-3151	Crosby & Overton				
Kenai	S '86	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton				
Homer	S '86	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton				
Seward	S '86	DEC	Colleen Burgh	(907) 274-2533	Crosby & Overton				
Katchikan	S '86	DEC	Steve Haavig	(907) 789-3151	Crosby & Overton				

ARIZONA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Phoenix	Feb. '87 (planned)		Eleanor Mink	(602) 838-6691					

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

CALIFORNIA 1982-1986

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Sacramento	10/1/82	GEHPC, County	Gina Purin	(916) 731-5050			\$14,000	2,970 gals.	250
Davis	5/1/83	Public Works	J.B. Holmquist	(916) 666-8775					
Woodland	5/1/83	Public Works	J.B. Holmquist	(916) 666-8775					
West Sacramento	5/1/83	Public Works	J.B. Holmquist	(916) 666-8775					
Palo Alto	10/29 & 11/5/83	Water Qual Cntrl	Peter Burnes	(415) 329-2117	Chem Waste Mgt		\$3,900	1,650	70
Redlands	3/24/84	LIV	Joan Dotson	(714) 793-1164			\$4,990	185	30
San Bernardino	3/24/84	Env Hlth Svcs	Steve Van Stock	(714) 383-3354					
Sacramento	4/1/84	GEHPC, County	Gina Purin	(916) 731-5050			\$25,000	9,075	900
San Diego	5/1 & 6/1/84	Env Hlth Coalition	Diane Takvorian	(619) 235-0281			\$57,000	13,626	290
Palo Alto	6/2/84	Water Qual Cntrl	Peter Burnes	(415) 329-2117	Chem Waste Mgt		\$6,100	3,025	80
Oakland	9/29/84	LIV, DHS, City	Joan Patton	(415) 775-8683					
Irvine	10/27/84	Public Works	Phil Hersch	(714) 660-3721					
Palo Alto	10/27/84	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
San Mateo	10/27/84	County	Judy Henley	(415) 363-4365					
Palo Alto	11/3/84	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Victorville	1/12/85	Env Hlth Svcs, Cnty	Doug Frazier	(408) 988-1111					
Albany	2/24/85	City of Albany	William Haegen	(415) 528-5710					
San Bernardino	'85	Env Hlth Svcs	Steve Van Stock	(714) 383-3354					
Contra Costa	4/13/85	Cnty Hl Task Force	Kathleen Nimr	(415) 228-5746					
Richmond	4/13/85	County	Kirsten Ritchie	(415) 671-4295					
Santa Rosa	4/15/85	Empire Waste Mgt Co	Dennis McGee	(707) 585-0291					
Huntington Bch	4/28/85	County, LIV	Frank Bowerman	(213) 834-8892					
Cupertino	4/27/85	City of Cupertino	K. Blackburn	(408) 252-4565					
Mountain View	5/11/85	City of Mt. View	Frank Hoe	(415) 996-6365					
Mountain View	5/18/85	City of Mt. View	Frank Hoe	(415) 996-6365					
Milpitas	5/18/85	City of Milpitas	Starla Jerome						
Sacramento	6/1/85	GEHPC, Cnty, Al. Env	Gina Purin	(916) 731-5050					
Palo Alto	6/8/85	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Santa Rosa	6/29/85	Empire Waste Mgt Co	Dennis McGee	(707) 585-0291					
San Francisco	8/3/85	Sanitary Fill Co	Larry Sweetser	(415) 468-2442					
Union City	9/14/85	Oakland Scavenger	John Sheehan	(415) 465-2911					
Fremont	9/21/85	Oakland Scavenger	John Sheehan	(415) 465-2911					
Sacramento	9/21/85	GEHPC	Gina Purin	(916) 731-5050					
Layward	9/28/85	Safety Specialists	Doug Frazier	(408) 756-7382					
Sacramento	9/28/85	GEHPC	Gina Purin	(916) 731-5050					
Santa Cruz	9/28/85	Safety Specialists	Doug Frazier	(408) 988-1111					
Santa Rosa	9/28/85	Empire Waste Mgt	Dennis McGee	(707) 585-0291					
Felton	10/5/85	Safety Specialists	Doug Frazier	(408) 988-1111					
Santa Cruz	10/5/85	Safety Specialists	Doug Frazier	(408) 988-1111					
Santa Cruz	10/12/85	Safety Specialists	Doug Frazier	(408) 988-1111					
Watsonville	10/12/85	Safety Specialists	Doug Frazier	(408) 988-1111					
Salinas	10/26/85	Safety Spec., City	Arylene Willits	(408) 756-7382					
Palo Alto	10/26/85	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Palo Alto	11/2/85	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Santa Rosa	11/16/85	Empire Waste Mgt	Dennis McGee	(707) 585-0291					

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

CALIFORNIA (CONTINUED)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICIPANTS
San Diego	2/1-7/31/86	Cnty Pub Hlth Svcs	Donald Ramras		Approp. Techs.II		\$36,165	5,225 gals.	226
San Bernadino	'86	Env Hlth Svcs	Steve Van Stock	(714) 383-3354					
Palo Alto	4/26/86	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Palo Alto	6/7/86	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Palo Alto	8/30/86	Water Qual Cntrl	Peter Burnes	(415) 329-2117					
Fresno Cnty	10/4&11/86	LIV	Betty Noblet	(209) 439-2867	Safety Specialists			10,560 gals.	
Sacramento	'86								
Cupertino	'86								
Narin County	'86								
Morgan Hill	'86								
Santa Rosa	'86								
Yolo County	'86								
Santa Barbara	'86								
Sunnyvale	'86								
Santa Monica	'86								
Santa Anna	'86								
Santa Clara	'86								
Haywood	'86								
Twenty-nine Palms	'86								
Nevada County	'86								
Orange County	'86								
Santa Maria	'86								

(1986 information incomplete)

COLORADO

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICIPANTS
Aurora	10/13/84	Tri-County Hlth Dept	Bruce Wilson	(303) 761-1340	Cecos Int., Inc.	(303) 341-9370			
Commerce City	10/13/84	" " " "	" "	" "	" "	" "			
Littleton	10/13/84	" " " "	" "	" "	" "	" "	\$28,000	3,625 gals.	358
(6 Sites in Denver/Boulder Metro area)	9/7/85		Jane Robinson	(303) 761-1340	" " "		\$78,000	14,520 gals.	1116
Larimer County	9/28/85	County			GSX Services, Inc.	(800) 251-1227	\$23,820	3,850 gals.	
Fort Collins	9/30/85	County			GSX Services, Inc.		\$ 7,193	2,080 gals.	

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

CONNECTICUT (continued)

<u>LOCATION</u>	<u>DATE</u>	<u>SPONSOR</u>	<u>CONTACT</u>	<u>PHONE</u>	<u>HAULER</u>	<u>PHONE</u>	<u>TOTAL COST \$</u>	<u>TOTAL WASTE COLLECTED GAL.</u>	<u># PARTICIPANTS</u>
Avon/Canton/Simsbury	9/13/86				McDonald & Watson				165
Plainville	9/27/86				Radiac				98
Southington	10/4/86				McDonald & Watson		\$16,000	1,320 gals.	220
Weston	10/11/86				McDonald & Watson				120
Orange/Milford	10/18/86				McDonald & Watson				275
Branford/N. Branford	10/18/86				McDonald & Watson				260
Farmington	10/18/86				Radiac				110
Gilford/Madison	10/18/86				McDonald & Watson				215
Danbury	10/26/86				"	"			
Mid State Regional	11/1/86				"	"			
Groton	11/8/86				"	"			
Woodbury/Southbury	S '87								
Westport	S '87								
New Haven	S '87								
Darien	S '87								
Suffield	S '87								
Vernon	S '87								
Ritchfield/Wilton	S '87								
E. Hartford	S '87								
Norwalk	S '87								
Hansfield	S '87								
North Hampton	S '87								
Windsor	S '87								
CT River Estuary RPA (8 towns)	S '87								
Stamford	F '87								

NOTE: CONTACT FOR ALL CONNECTICUT PROGRAMS IS LESLIE LEWIS (203) 566-3469

DELAWARE

<u>LOCATION</u>	<u>DATE</u>	<u>SPONSOR</u>	<u>CONTACT</u>	<u>PHONE</u>	<u>HAULER</u>	<u>PHONE</u>	<u>TOTAL COST \$</u>	<u>TOTAL WASTE COLLECTED GAL.</u>	<u># PARTICIPANTS</u>
	Spring '87 (planned)								

NOTE: CONTACT FOR DELAWARE IS JOHN IORIZZO (302) 322-3574

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

FLORIDA (Funding is appropriated annually from the Water Quality Trust Fund; sponsor, contact and hauler are the same for all 1984-85 programs, Phases I-III)

COUNTY	LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS.	# PARTICLES
PHASE I: (Spring, 1984)										
Dade	Miami	S '84	DEP	Jan Kleman	(904) 487-3892	GSX Services	(800) 334-5953		54,982 lbs.	439
Broward	Ft. Lauderdale	S '84							56,982	629
Monroe	Keys	S '84							2,604	37
Manatee	Bradenton	S '84							17,282	334
Hillsborough	Tampa	S '84							35,744	293
Pinellas	St. Pete	S '84							55,480	1,160
Pasco	New Port Richey	S '84							6,340	230
								\$587,000		
PHASE II: (Fall, 1984)										
Brevard	Meritt Island	F '84							33,110 lbs.	439
Orange	Orlando	F '84							63,588	673
Osceola	Kissimmee	F '84							9,679	143
Lake	Leesburg	F '84							16,166	172
Seminole	Casselbury	F '84							13,179	162
Volusia	Daytona Beach	F '84							17,785	192
Putnam	Palatka	F '84							6,620	46
St. Johns	St. August	F '84							8,184	52
Flagler	Bunnell	F '84							1,377	22
Eaker	MacClenny	F '84							658	11
Duval	Jacksonville	F '84							81,249	383
Clay	Orange Park	F '84							17,979	151
Nassau	Callahan	F '84							9,557	54
Alachua	Gainesville	F '84							91,640	982
								\$630,000		
PHASE III: (Spring, 1985)										
Escambia	Pensacola	S '85							33,195 lbs.	169
Okaloosa	Ft. Walton	S '85							29,419	261
Santa Rosa	Milton	S '85							9,450	20
Walton	Defuniak	S '85							4,145	23
Bay	Panama City	S '85							18,685	150
Holmes	Bonifay	S '85							3,380	11
Washington	Chirley	S '85							3,030	14
								\$170,000		

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

FLORIDA (continued) (Sponsor, contact and hauler are the same for all 1984-85 programs, Phases I-IV.)

COUNTY	LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS.	# PARTICLES
PHASE IV: (Fall, 1985)										
St. Lucie	Ft. Pierce	F '85	Florida DEP	Jan Kleman	(904) 487-3892	GSX Services	(800) 334-5953		28,712	160
Indian River	Vero Beach	F '85							34,739	146
Martin	Stuart	F '85							31,693	243
Palm Beach	W. Palm Beach	F '85							129,946	261
	Boca Raton	F '85							48,747	222
	Belle Glade	F '85							16,228	30
Collier	Naples	F '85							26,343	164
Hendry	Clewiston	F '85							1,600	8
	La Belle	F '85							7,226	18
Lee	Pt. Myers	F '85							77,632	484
Glades	Moorehaven	F '85							208	4
Charlotte	Pt. Charlotte	F '85							30,365	281
Sarasota	Sarasota	F '85							87,413	700
De Soto	Arcadia	F '85							4,403	74
Hardee	Wachulla	F '85							7,600	38
Okeechobee	Okeechobee	F '85							4,430	24
Highlands	Sebring	F '85							15,222	290
Polk	Winter Haven	F '85							45,612	276
	Lakeland	F '85							60,806	435
								\$840,800		
Alachua		3/19-22/86	Alachua County				Chem. Waste Mgt.	\$ 68,165	161,182 lbs.	766
PHASE V: (Fall, 1986)										
Hernando		F '86	Florida DEP	Jan Kleman	(904) 487-3892	GSX Services	(800) 334-5953		17,475 lbs.	118
Sumter									8,032	57
Levy									6,467	38
Citrus									17,602	
Marion									29,551	233
Bradford									9,033	51
Union									3,940	9
Dixie									1,300	18
Lafayette									0	2
Suwanee									5,600	25
Columbia									10,780	83
Hamilton									762	6
Gilchrist									4,017	19
Harrison									5,346	28
Taylor									4,998	15

(Sponsor, contact and hauler are the same for all 1986 Phase V programs.)

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

HAWAII

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIES
Honolulu	8/9&18/86	State	Letitia Dyshara	(888) 548-6915	United Env Svcs			1,658 gals.	248

ILLINOIS

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIES
Planning for '87			Christina Komadina	(217) 333-8956					

INDIANA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIES
Marion County	F '85		Bill Clark (GSX)	(800) 251-1227	GSX Services, Inc.	(800) 251-1227			
Indianapolis	9/28/85	City			"	"	\$33,023	6,675 gals.	
Zionsville	9/26/85	City			"	"	\$ 6,560	935 gals.	
Indianapolis	S '86				"	"			
Zionsville	S '86				"	"			

IOWA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIES
Dubuque	9/26&27/86	Dept. of Nat. Res.	John Seyb	(515) 281-4076	AC Industry	(516) 343-5488			
Cedar Rapids	9/26&27/86	" " " "	" "	" "	" "	" "			
TOTAL:							\$62,000	35,780 lbs. & 740 gals. used oil	512

KANSAS

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIES
Wichita	11/13-15/86	State	John Davis	(316) 268-8351	GSX Services, Inc.				
Great Bend	11/8/86	State	Tom Gross	(913) 862-9360	GSX Services, Inc.				

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

KENTUCKY

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL. # PARTICE
Lebanon	1981	Marion County	John Weil	(502) 587-0591			\$1,200	1,900 lbs.

LOUISIANA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS. # PARTICE
Baton Rouge (4 sites)	10/26/85	Env Cntrl Dept/ Dow Chemical	Charles Goldsmith	(504) 389-6407	Dow Chemical	same	\$22,000	6,500 lbs.
(6 sites)	5/3/86	• • •	• • •	• • •	• • •	•	\$35,000	16,000
(6 sites)	S '87	• • •	• • •	• • •	• • •	•		

MARYLAND

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL. # PARTICE
Laurel	F '85	GSX Services, Inc.	Paul Marshall	(800) 638-4440	GSX Services, Inc.	same		

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

MASSACHUSETTS (* Hauler is the same for all 1982-84 programs.)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Lexington	10/30/82	LIN/Health Dept.			* SCA Services		\$1,600	770 gals.	93
Andover	5/7/83	Board of Health					\$ 846	305	45
Bedford	5/14/83	Board of Health					\$1,360	610	72
Braintree	5/21/83	SCA Services						930	160
Fall River	6/11/83	Chamber of Commerce					\$1,000	330	20
Plymouth	9/21/83	Town					\$ 830	240	70
Sudbury	10/15/83	Public Health Dept.					\$1,380	555	76
Reading	10/22/83	Town					\$2,956	1,430	120
Lexington	10/22/83	Town					\$2,480	1,185	157
Concord	10/29/83	Town					\$1,755	895	70-100
Wellesley	10/29/83	Town					\$3,680	1,705	160
Westford	11/5/83	Town					\$3,956	1,705	
Bedford	11/5/83	Town					\$1,100	464	30
Dartmouth	11/5/83	Town					\$2,390	928	80
Cape Cod	11/8/83						\$13,300	8,345	650
1983 TOTALS:							\$37,201	19,627	
Oxford	4/7/84						\$1,175	385	
Amherst	4/14/84						\$2,997	1,135	
Easthampton	4/28/84						\$2,661	1,160	
Northampton	4/28/84						\$4,456	1,661	
Norwood	5/5/84						\$3,224	1,299	
Acton	5/5/84						\$3,697	1,335	
Belmont	5/12/84						\$2,106	884	
Westport	5/12/84						\$2,505	1,100	
Easton	5/12/84						\$2,080	732	
Worcester	5/12/84						\$6,500	2,690	
Deerford	6/2/84						\$1,705	686	
Plymouth	6/9/84						\$2,048	823	
Nantucket	8/29/84						\$3,875	1,345	
Concord	9/15/84						\$2,970	1,142	200
Duxbury	9/15/84						\$2,745	1,563	
Andover	9/22/84						\$2,741	1,080	120
Cohasset	9/22/84						\$2,457	996	
Fewksbury	9/29/84						\$2,695	835	
Lincoln	9/29/84						\$4,844	2,015	
Cape Cod	10/6/84						\$18,600	4,420	
Sudbury	10/13/84						\$2,946	1,240	
Rockport/Gloucester	10/13/84						\$2,100	705	
Pepperell	10/20/84						\$1,864	680	
Medfield	10/20/84						\$2,214	1,090	
Lexington	10/26/84						\$3,424	1,435	150
Westwood	10/27/84						\$5,680	2,324	162
Townsend	10/27/84						\$1,447	510	
N. Reading	10/27/84						\$2,368	755	32
Wellesley	11/3/84						\$3,747	1,457	168
Sharon	11/3/84						\$6,344	2,995	
Plymouth	11/17/84						\$1,914	775	
1984 TOTALS:							\$107,829	46,380	

* Note: SCA Services was hauler for all 1983 and 1984 Massachusetts collections. SCA is now Clean Harbors.

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

MASSACHUSETTS (continued)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIUM
Canton	4/13/85	Board of Health		(617) 828-6615	Inland Poll Cntrl	(617) 843-7118			
Townsend	9/14/85								
Braintree	9/14/85					Clean Harbors			
Amherst/Pelham/ Belchertown	9/21/85				Clean Harbors	(617) 655-8863	\$5,956	1,830 gals.	
Chelmsford	9/28/85								
Bedford	9/28/85								
Martha's Vineyard	10/5/85		Kate Gage	(617) 693-3479	Inland Poll Cntrl			1,878	
Needham	10/5/85				Clean Harbors	(617) 655-8863	\$7,550	1,925 gals.	
Kingston	10/5/85				Clean Harbors				
Concord	10/5/85								
Carlisle	10/5/85								
Lincoln	10/12/85				Clean Harbors	(617) 655-8863	\$1,525	7,800	
Acton	10/12/85				Clean Harbors		\$4,100	1,000	
Stowe/Littleton/ Boxboro	10/12/85				Clean Harbors		\$5,500	878	
Pepperell	10/19/85				Clean Harbors		\$2,545	360	
Lexington	10/19/85				Clean Harbors		\$10,962	1,678	
Dover	10/26/85				Clean Harbors		\$4,085	695	
Westwood	10/26/85				Clean Harbors		\$11,860	2,280	
Weston	10/26/85		Ward Carter	(617) 893-7328	GSX Services, Inc.				
Burlington	10/27/85				N.E. Solvents Corp.				
Arlington	11/2/85				Clean Harbors		\$4,732	890	
Marshfield	11/2/85				Clean Harbors		\$4,260	1,075	
Greenfield	11/9/85				Clean Harbors		\$4,362	630	
Medfield	11/9/85				N.E. Solvents Corp.				
Reading	11/9/85								
Marion	11/16/85								
Brockton	11/16/85				Clean Harbors		\$2,610	415	
Easton	F '85				Clean Harbors		\$2,350	480	
Hamilton	F '85								
Leverett	F '85								
Nantucket	F '85								
Northrop	F '85								
Shutesbury	F '85								
Southborough	F '85								

Note: Clean Harbors contact - Gary Benham (617) 655-8863
 Inland Pollution Control contact - Joe Polsinello (617) 843-7110
 Northeast Solvents Corporation contact - Jim Green (617) 663-1602

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

MASSACHUSETTS (continued)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTONS
Natick	4/12/86				Clean Harbors	(617) 655-8863	\$18,135	3,765	
Hamilton	4/12/86				Clean Harbors		\$4,340	750	
Brewster	4/26/86				Clean Harbors		\$7,132	1,135	
Watertown/Belmont	5/3/86		Donna Moultrip	(617) 484-2357	Inland Poll Cntrl	(617) 843-7110		1,785	
Quincy	5/3/86	DEW	David Colton	(617) 773-1380	Inland Poll Cntrl			7,590	
Chelmsford	5/3/86				Clean Harbors		\$5,000	2,870	
Scituate	5/3/86				Clean Harbors		\$6,477	1,850	
Dartmouth	5/18/86				Clean Harbors		\$7,020	1,190	
Hanover	5/18/86				Clean Harbors		\$5,217	965	
Plympton	5/17/86				Clean Harbors		\$3,582	500	
Wincenton/ Templeton/Royalston	5/17/86				Clean Harbors		\$4,955	830	
Cambridge	5/31/86				Clean Harbors		\$7,900	1,465	
Burlington	6/7/86	Town	Dick Lanbord		NE Solvents	(617) 683-1002	\$8,186	1,038	
Stoughton	6/14/86				Clean Harbors		\$4,572	720	
Barnstable	6/28/86	Cape Cod Planning		(617) 362-2551	Northeast Solvents	(617) 683-1002	\$13,750	1,755	
Wellfleet	6/28/86	Cape Cod Planning		(617) 362-2551	NE Solvents		\$9,000	850	
Falmouth	6/28/86	Cape Cod Planning		(617) 362-2551	NE Solvents		\$15,850	2,133	
Harwich	6/28/86	Cape Cod Planning		(617) 362-2551	NE Solvents		\$19,250	2,465	
Avon	F '86				Clean Harbors				
Acton	F '86				Clean Harbors				
Chelmsford	F '86				Clean Harbors				
West Springfield	F '86				Clean Harbors				
Holyoke	F '86				Clean Harbors				
Williamstown	F '86				Clean Harbors				
Dalton	F '86				Clean Harbors				
Lee	F '86				Clean Harbors				
Lenox	F '86				Clean Harbors				
Easton	F '86				Clean Harbors				
Townsend	9/13/86				Clean Harbors				
Annerst	9/13/86				Clean Harbors				
Weymouth	9/20/86	Town	Jim Clark		NE Solvents		\$22,100	3,750	
Concord	9/20/86				Clean Harbors				
Plymouth	9/20/86				Clean Harbors				
Stowe/Littleton/ Boxboro	9/27/86				Clean Harbors				
Stoneham	9/27/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$11,497	1,753	
Andover	10/4/86	Herrinac Val P.C.	Alan McKintosh	(617) 374-6519	NE Solvents		\$17,650	2,605	
Brockton	10/4/86				Clean Harbors				
Waltham	10/6/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$8,725	937	
Duxbury	10/11/86				NE Solvents		\$17,250	2,131	

Note: Clean Harbors contact - Gary Benham (617) 655-8863
 Inland Pollution Control contact - Joe Polsinello (617) 843-7110
 Northeast Solvents Corporation contact - Jim Green (617) 683-1002

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

MASSACHUSETTS (continued)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAILER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL. & PARTS
Winchester	10/18/86		Joe Tabbi	(617) 721-1721	NE Solvents		\$12,000	1,386
Georgetown	10/18/86		Alan McKintosh	(617) 374-0519	NE Solvents		\$6,900	788
Marlboro	10/18/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$7,550	857
Pepperell	10/18/86				Clean Harbors			
Groton	10/18/86				Clean Harbors			
Needham	10/18/86				Clean Harbors			
Beverhill	10/25/86		Alan McKintosh	(617) 374-0519	NE Solvents		\$13,250	1,911
Westford	10/25/86		Denise Lauler	(617) 275-7120	NE Solvents		\$7,350	763
Wilmington	10/25/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$11,000	1,416
Lexington	10/25/86		George Smith		NE Solvents		\$35,850	6,033
Arlington	10/25/86				Clean Harbors			
Westwood	10/25/86				Clean Harbors			
Woburn	11/1/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$20,300	3,162
Sterling	11/1/86		Robert Flynn	(617) 454-0021	NE Solvents		\$7,300	552
Wellesley	11/1/86	Metro Area Plan Comm	Judy Weigand	(617) 451-2770	NE Solvents		\$12,100	1,308
Wrentham	11/1/86		Maureen Oslink	(617) 565-1500	NE Solvents		\$12,300	1,652
Bridgewater	11/1/86		Nancy Koskon	(617) 697-6454	Inland Poll Cntrl			3,306
Greenfield	11/8/86				NE Solvents		\$18,000	3,520
New Bedford	11/8/86	SE Reg Plan Comm	Steve Smith	(617) 824-1367	NE Solvents		\$9,450	1,125
Canton	11/8/86	Public Hlth Dist			NE Solvents		\$11,700	1,620
Orange	11/8/86		Jim Dohman	(413) 774-4615	NE Solvents		\$5,000	346
Marion/Mattapoisett/ Rochester	11/15/86				NE Solvents			
Sharon	11/15/86				NE Solvents			
Walpole	11/15/86				NE Solvents			
Melrose	11/15/86				NE Solvents			
N. Reading	11/22/86				NE Solvents			
Dover/Needfield/ Sherburn	11/22/86				NE Solvents			
Conasset/Hingham	11/22/86				NE Solvents			
Ayer/Bolton/ Harvard	11/22/86				NE Solvents			

Note: Clean Harbors contact - Gary Eenham (617) 655-0863
 Inland Pollution Control contact - Joe Polsinello (617) 843-7110
 Northeast Solvents Corporation contact - Jim Green (617) 683-1002

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

MICHIGAN

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS. # PARTIC
Traverse City	S '84	Dow Chemical	Patti Temple	(517) 636-5783				
Ann Arbor	F '84				Drug & Lab			
Midland (2)	10/28/84	Dow Chemical						2,964 lbs. 89
Traverse City	S '85	Dow Chemical	Patti Temple	(517) 636-5783				
Midland	S '85	Dow Chemical						
Ann Arbor	F '85				Drug & Lab			
Kent City	F '85	Dow Chemical						
Oakland	F '85	Dow Chemical						
Ingham	F '85				Drug & Lab			
Saganaw	F '85	Dow Chemical						
Bay City	F '85	Dow Chemical						
Traverse City	S '86				Dow Chemical			
Ludington	S '86				Dow Chemical			
Detour	8/19/86	Chippewa Cnty Hlth Dept	David Martin	(986) 635-1566	Drug & Lab			
Sault St. Marie	8/21/86							
Petoskee	8/23/86	3rd Dist Hlth Dept	Burt Notestine	(616) 347-6814	Drug & Lab			
Holland Cnty	9/13/86		Roger Stroh	(616) 394-1365	Drug & Lab			
Kent Cnty	9/13/86	Cnty Hlth Dept	George Pio	(616) 774-3889	Dow Chemical			
Calhoun Cnty	9/28/86		Teri Haven	(616) 966-1241	Dow Chemical			
Saganaw/Midland Bay	10/86		Patty Temple	(517) 636-5783	Dow Chemical			
Genesee	9/27/86	Health Dept	Tom Moore	(313) 257-3683	Drug & Lab			
Isabella Cnty	10/4/86	Extension Office	Lyle Thompson	(517) 772-8911	Drug & Lab			
Washtenaw (Ann Arbor)	10/4/86	Hlth Dept	David Plucienann	(313) 994-2566	Drug & Lab			
Ingham Cnty		Health Dept	Bob Ceru	(517) 887-6588	Drug & Lab			
Macomb Cnty		Health Dept	Vaughan Wagner	(313) 469-5236	Drug & Lab			

MINNESOTA

* indicates employees only

** collects waste on an on-going basis

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL. # PARTIC
Inver Grove Heights	9/14/85	BFI, Inc.						
Duluth**	9/21-22/85	MPCA	Susan Riogley	(612) 297-1453			\$ 7,488	
St. Paul	10/12-13/85	MPCA					\$ 9,213	
Benson	10/19/85	MPCA					\$ 3,356	
Winona County	10/26-27/85	MPCA					\$11,825	

TOTALS FOR PROGRAMS SPONSORED BY THE MINNESOTA POLLUTION CONTROL AGENCY:

\$31,876 5,183 gals. 569

New Brighton*	11/12/85	Honeywell						
Hopkins*	11/13/85	Honeywell						
Plymouth*	11/13/85	Honeywell						
Golden Valley*	11/14/85	Honeywell						
Inver Grove Heights	9/28/86	Pine Bend Landfill-John Sachi		(612) 457-2111				120
Hennepin County	11/18-19/86	County	Greg Lie	(612) 348-2556			\$48,000	1,200

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

NEBRASKA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICES
Lincoln	6/8-10/85	County	Richard Slama	(482) 471-7800	GSX Services, Inc.	(800) 251-1227			41
Lincoln	11/3-4/85	County	"	"	"	"			48
Waverly	9/7-9/85	County	"	"	"	"			4
TOTAL:							\$ 1,750		

NEW HAMPSHIRE

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICES
Hartford (VT)	11/3/84	Upper Valley RPC	Victor Jas	(603) 643-5672	N.E. Marine Contr.			1,100 gals.	109
Dover	4/20/85	Div Pub Hlth Svcs			Coating Sys., Inc.				
Banover	5/4/85	Upper Valley RPC	Victor Jas	(603) 643-5672	N.E. Marine Contr.		\$6,000	1,375	133
Exeter	5/18/85	Rockingham Planning Comm.			Coating Sys., Inc.				
Salem	5/19/85								
Manchester	4/26/86	LIV	Anne McDonough	(603) 668-1580	N.E. Solvents	(617) 683-1602	\$22,400	2,675	
Beoford	4/26/86	Cons. Comm.	Carol Anderson	(603) 472-8472	"	"	\$ 8,116	935	
Exeter/ Kensington/ Kingston	5/3/86	Rockingham Planning Comm	Sara Campbell	(603) 778-3855	Coating Systems, Inc	(603) 883-0553		1,400	387
Lebanon	5/3/86	Lake Sunapee Council	Eob Varney	(603) 448-1688	NE Marine Contract	(602) 879-6800	\$11,164	2,090	240
Stratham/ Hampton/ Portsmouth	5/16/86	Rockingham Palnning Comm	Sara Campbell	(603) 778-0885	Coating Systems, Inc	(603) 883-0553			
Cheshire Cnty	5/17/86	SW Reg. Planning Comm.	Dean Shankle	(603) 357-1165	Coating Systems, Inc	(603) 883-0553	\$ 9,528		71
Claremont/ New London	5/31/86	NH/VT Sol. Waste Proj.	Connie Leach	(603) 543-1201	NE Solvents	(617) 683-1002	\$18,630	5,720	188
Nashua/ Milford	6/7/86	Nashua Reg Sol Wste Dist	Marla Engel	(603) 883-0366	Coating Systems, Inc	(603) 883-0553	\$29,534	3,932	300
Conway	9/20/86	Solid Waste Dist.	John Walsh	(603) 447-3811	"	"	\$ 7,832	1,000	42
Concord	9/27/86	Solid Waste Dist.	Ron Ford	(603) 225-6520	"	"	\$14,100	3,445	290
Plaistow/ Salem/ Derry	10/18/86	State/Rockingham Cnty	Sara Campbell	(603) 778-6885	"	"		2,695	156
Epping/ Raymond/ Sandown	10/25/86	State/Rockingham Cnty	"	"	"	"		2,530	87

NOTE CONTACTS OF HAULING COMPANIES:

Coating Systems, Inc. - Emil Petrsek
 NE Solvents - Jim Green
 NE Marine Contractors - Ken Horton

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

NEW JERSEY (* indicates pesticides only)

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOT LIQ WASTE COLLECTED GAL.	TOT SOL WASTE COLLECTED LBS.	# PARTIC
*Morris Cnty	5/18/85	DEP-County	Ralph Davis	(609) 292-8341	Adv Env Tech Corp	(201) 347-7111	\$ 5,439	69	609	
*Hunterdon Cnty	5/18/85	DEP-County	"	"	Radiac Research	"	\$24,000	1,717		190
*Gloucester Cnty	6/18/85	DEP-County	"	"	"	"	\$10,000	94	847	
*Morris Cnty	10/5/85	DEP-County	"	"	"	"	\$ 8,699	111	605	
*Somerset Cnty	10/19/85	DEP-County	"	"	"	"	\$11,000	171	688	
*Burlington Cnty	10/26/85	DEP-County	"	"	Adv Env Tech Corp	(201) 347-7111	\$13,408	205	1,833	
*Atlantic Cnty	11/9/85	DEP-County	"	"	"	"	\$ 9,225	175	400	
*Union Cnty	11/23/85	DEP-County	"	"	"	"	\$11,000	157	574	
*Monmouth Cnty	4/19/86	DEP-County	"	"	Radiac Research	"	\$29,910	439	1,727	
Cumberland Cnty	10/4/86	DEP-County	"	"	"	"	"	"	"	"
Somerset Cnty	10/11/86	DEP-County	"	"	"	"	"	"	"	"
Hunterdon Cnty	10/18/86	DEP-County	"	"	"	"	"	"	"	"
Burlington Cnty	10/25/86	DEP-County	"	"	"	"	"	"	"	"
Morris Cnty	11/15/86	DEP-County	"	"	Adv Env Tech Corp	(201) 347-7111	"	"	"	"
Atlantic Cnty	11/15/86	DEP-County	"	"	Radiac Research	"	"	"	"	"

NEW MEXICO

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTIC
Albuquerque	10/18-22/85	Bernalillo Cnty	Donna Lacombe	(505) 766-7434	GSK Services, Inc.		\$87,213	750 gals. & 118,950 lbs.	1,071

NEW YORK

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE IN BARRELS.	# PARTIC
Broome County	S '82		Claudia Stallman	(607) 772-2114			\$ 1,200	11 barrels	98
Niagara	S '83	SCA/CECOS	"	"					
Broome County	S '83		Claudia Stallman	(607) 772-2114				14 barrels	60
Oneida	S '83		"	"	SCA		\$ 2,300	18 barrels	128
Rockland	F '83		Barbara Porta	(914) 354-0200				38 barrels	200
Oneida	S '84		Hans Arnold	(315) 798-5713	GSK Services		\$ 2,500	20 barrels	
Columbia	S '84		Roland Vosburgh	(518) 628-3375	SCA		\$23,300	105 barrels	35
Tompkins	F '84		"	"	GSK Services		\$ 4,660	10 barrels	169
Orondaga	S '85		Dave Coburn	(315) 425-2640	GSK Services				
Cesego	S '85		Bob Shearer	(315) 349-3270	GSK Services				
Schenectady	S '85		Denise Casnere	(516) 382-3286				24 barrels	154
(2) Islip	S '85		"	"					
Broome County	6/1/85	Cnty Env Council	Claudia Stallman	(607) 772-2114			\$ 5,800	2,450 lbs.	147
Westchester	S '85	County	Liz Hendrick	(914) 285-5044	Chem Poll Control			20 barrels	
Rockland Cnty	F '85	County	Barbara Porta	(914) 354-0200	GSK Services				
(4) Long Island	F '85		"	"					
(3) Long Island	S '86		"	"					
Broome County	5/17/86	County	Claudia Stallman	(607) 772-2114	GSK Services		\$ 9,000	1,590 lbs.	167
Dutchess	S '86		Bonnie McLeod	(914) 677-3488					
Westchester Cnty	F '86		"	"	GSK Services				

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

NORTH CAROLINA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS.	# PARTICLES
Reidsville	April '85	GSK Services, Inc.	Ken Webb	(800) 334-5953	GSK Services, Inc.	same		3,850 lbs.	
Eden	April '85	GSK Services, Inc.	Ken Webb	(800) 334-5953	GSK Services, Inc.	same		2,720	

OHIO

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Cincinnati	F '84	CECOS, Inc.	Pete Kinikles	(513) 681-5738	CECOS, Inc.				
Canton		LWV of Ohio	Patricia Starr	(216) 499-3657					

OREGON

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Gresham	S '83	Fire Dept.	Lynn Malonquist	(503) 661-3000	Pegasus				
Gresham	S '84	Fire Dept.	Lynn Malonquist	(503) 661-3000	Pegasus				
Lane County	5/10/86	Sol. Waste District	Mike Turner	(503) 687-4119					
Portland	11/15-16/86	Metro Reg Serv Dist	Randi Wexler	(503) 221-1646					

PENNSYLVANIA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
York County	10/18-19/85	LW/Sol Waste Auth	Karen Hoyt-Stewart	(717) 246-3406	GSK Services, Inc.	(800) 630-4440	\$62,000	9,250	560
York County	10/9-11/86	LW/Sol Waste Auth	" " "	" " "	" " "	" " "	\$50,000	11,000	558

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

RHODE ISLAND (Sponsor, contact, & hauler are the same for all 1984-86 programs.)

<u>LOCATION</u>	<u>DATE</u>	<u>SPONSOR</u>	<u>CONTACT</u>	<u>PHONE</u>	<u>HAULER</u>	<u>PHONE</u>	<u>TOTAL COST \$</u>	<u>TOTAL WASTE COLLECTED GAL.</u>	<u># PARTICLES</u>
Cranston	9/22/84	State	Alicia Good	(481) 277-2797	McDonald & Watson				169
S. Kingston	9/29/84						125		
Umberland	10/13/84						183		
Portsmouth	10/28/84						124		
Providence	10/27/84						182		
McCoy	12/12/85						\$ 5,673	89	
Westerly	12/12/85	\$ 4,802	37						
Middletown	12/12/85	\$11,164	215						
Warwick	12/12/85	\$16,155	384						
TOTALS FOR 1985 PROGRAMS:							\$37,795	4,375 GALS.	645
								& 14,468 LBS.	
Providence	5/30/86							210	
N. Kingston	5/16/86							186	
Smithfield	5/19/86							187	
TOTALS FOR 1986 PROGRAMS:							\$26,665	3,952 GALS.	583

SOUTH CAROLINA

<u>LOCATION</u>	<u>DATE</u>	<u>SPONSOR</u>	<u>CONTACT</u>	<u>PHONE</u>	<u>HAULER</u>	<u>PHONE</u>	<u>TOTAL COST \$</u>	<u>TOTAL WASTE COLLECTED GAL.</u>	<u># PARTICLES</u>
(Planning)	5 '87		Dave Sprinkle	(803) 798-2993	GSK	(803) 798-2993			

TENNESSEE

<u>LOCATION</u>	<u>DATE</u>	<u>SPONSOR</u>	<u>CONTACT</u>	<u>PHONE</u>	<u>HAULER</u>	<u>PHONE</u>	<u>TOTAL COST \$</u>	<u>TOTAL WASTE COLLECTED GAL.</u>	<u># PARTICLES</u>
Robertson Cnty	5 '86	GSK Services, Inc.	Bill Clarke	(606) 251-1227	GSK Services, Inc.	(806) 251-1227			
(three locations)									

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

TEXAS

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS.	# PARTICLES
Austin	4/86	City	Liz Badger	(512) 499-2558	CECOS		\$64,588	154 drums	458
Brazosport	5/86	DOW Chemical	Marlies Goode	(489) 238-2805	Dow Chemical	same	\$7,888	1,700 lbs.	
Beaumont	18/4/86	Env Qual Cncl	Scott Nicholson	(409) 736-2821	Chem Waste Mgt	(409) 736-2821			
Mid-Jefferson	18/11/86	Env Qual Cncl	" "		Chem Waste Mgt				
Port Acres	18/18/86	Env Qual Cncl	" "		Chem Waste Mgt				
Orange	18/25/86	Env Qual Cncl	" "		Chem Waste Mgt				
TOTALS FOR FALL 1986 PROGRAMS:								75 DRUMS	225

Houston S '87 Sierra Club/LWW Mary Ellen Whitworth(713) 523-8835

VERMONT

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICLES
Hartford(w/NH)	11/3/84	Upper Valley Region	Victor Jas	(603) 643-5672	NE Marine Contr.	(602) 879-8860		1,100 gals.	109
Hanover(NH)	5/4/85	" "	" "		NE Marine Contr.		\$6,600	1,375	133
Middlebury	5/18/85	Town of Middlebury	Betty Wheeler	(862) 388-4641	NE Marine Contr.		\$5,800	1,886	98
Waitsfield	18/4/86	Town of Warren	Nancy Colby	(802) 496-2978	NE Marine Contr.				45
Springfield	5/17/86	S.Windsor Sol Waste Dist	Connie Leach	(603) 543-1201	NE Solvents				
Lyndonville/ St. Johnsbury	5/17/86	Town of Lyndon	Charles Browne	(802) 746-2372	NE Marine Contr.				
Rutland	5/18/86	Rutland Sol Waste Dist	James Dohman	(862) 775-6482	NE Solvents	(617) 683-1602	\$13,525	1,904	
Lebanon(NH)	5/3/86	Upper Valley RPC	Victor Jas	(603) 643-5672	NE Marine				

VIRGINIA

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED LBS.	# PARTICLES
Fairfax Cnty	18/26/85	County	Robin Bird	(703) 691-3381	GSX Services, Inc.	(919) 342-6166			
Fairfax Cnty	S '86	County							
Chesterfield Cnty	18/4/86	County	Susan Craik	(804) 746-5879	GSX Services, Inc.	(919) 342-6166		7,125 lbs.	

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

WASHINGTON

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED GAL.	# PARTICIPANTS
Seattle/King Cnty '82 (4 ongoing since then)			Cheri Zehner	(206) 587-4632	Chemical Processors			40 gals.	65
Tacoma/Pierce County		County Health Dept.	Doug Pierce	(206) 591-6571					
Bellingham/Whatcom Cnty (ongoing since 1983)		Hlth Dist	Tom McInery	(206) 676-6724	Crosby & Overton				
Spokane	6/1/85	City	David Barnes	(509) 456-2682	Chem-Safe				388
Thurston Cnty	10/5/85	Cnty Hlth Dept	Sue Davis	(206) 786-5461	Chemical Processors			248	37
Kent	9/14/85	City Fire Dept	Asst. Chief Berg	(206) 872-3368	Chemical Processors			188	66
Kent	S '86	City Fire Dept	" "	" "	Crosby & Overton			328	116
Thurston Cnty	5/3/86	Cnty Hlth Dept	Sue Davis	(206) 786-5461	Chemical Processors			1,218	225
Snohomish Cnty	5/17/86	Health Dist	Jeff Defenbach	(206) 259-8693	Chemical Processors			935	89
Bellevue	5/85	City	Sarah Hubbard-Gray	(206) 453-4895	Chemical Processors				180
Bellevue	5/86	City	" "	" "	" "		\$17,868	958	168
Spokane	S '86	City	David Barnes	(509) 456-2682	Chem-Safe		\$18,585	2,888	361
Vancouver	6/21/86	SW Wash Hlth Dept	Gary Bickett	(206) 695-9215	Chemical Processors			228	39
Jefferson Cnty	8/16/86	Public Works	Carter Breskin	(206) 385-3585	Chemical Processors				
Yakima Cnty	11/1/86		Mark Nadrow	(509) 595-4128	Chem-Safe				

WISCONSIN

LOCATION	DATE	SPONSOR	CONTACT	PHONE	HAULER	PHONE	TOTAL COST \$	TOTAL WASTE COLLECTED	# PARTICIPANTS
Madison	5/12/84	Dept of Public Hlth	Jill Schmidt	(608) 266-4843	Triangle Resources Inc.		\$12,066	3,400 lbs.	340
Manitowoc	5/18/85	EPA	" "	" "	GSX Services, Inc.	(800) 251-1227	\$19,505	2,620	
Kenosha	5/18/85	EPA	" "	" "	" "	" "	\$11,686	2,530	
Madison	9/7/85	EPA/Dept of Pub Hlth	Jill Schmidt	(608) 266-4843	" "	" "	\$15,918	6,695	556
Marathon Cnty	9/14/85	Marathon County	" "	" "	" "	" "			
Brown County	10/12/85	EPA	" "	" "	GSX Services, Inc.		\$ 9,433	1,765	
Outagamie Cnty	10/12/85	EPA	" "	" "	" "	" "			
Greenbay	'85	" "	" "	" "	" "	" "			
Madison	S '86	DNR	" "	" "	GSX Services, Inc.				
Vaukasha Cnty	5/10/86	DNR	" "	" "	" "	" "	\$33,743	6,168	
Portage Cnty	5/17/86	DNR	" "	" "	" "	" "			
Kenosha	5/18/86	DNR	" "	" "	GSX Services, Inc.		\$11,686	2,530 gals.	
Manitowoc	5/18/86	DNR	" "	" "	GSX Services, Inc.		\$19,505	3,685 gals.	
Eau Claire Cnty	9/28/86	DNR	" "	" "	" "	" "			
Dane County	9/6/86	DNR	" "	" "	" "	" "			

Appendix D

Community survey results: Guilford County, NC

Source: Edelman, M.B. and Hanson, M.E., 1987. Community Survey on Household Hazardous Waste in Guilford, NC. (unpublished report) Chapel Hill, NC: University of North Carolina, Institute for Environmental Studies.

**COMMUNITY SURVEY ON HOUSEHOLD HAZARDOUS WASTE
IN GUILFORD COUNTY, N.C.**

Introduction:

In August 1986, a community survey on attitudes toward household hazardous waste (HHW) was conducted in Guilford County, N.C. The purpose of the survey was to determine the extent to which county residents were aware of hazardous waste generated in the home, to determine the current disposal practices of county residents for hazardous household products, and to assess the willingness of county residents to participate in an organized HHW collection program.

Methods:

A randomized telephone survey of 332 Guilford County residents was conducted over a two week period. Staff members from the UNC Institute for Environmental Studies at Chapel Hill, faculty members from UNC-Greensboro's Center for Social Science Research, and a special committee comprised of members of the Guilford County Hazardous Waste Task Force, designed the instrument used to conduct the survey.

More than 25 volunteers were involved in the actual implementation of the survey. Volunteers were recruited from the Guilford County Hazardous Waste Task Force, the League of Women Voters, the Sierra Club, Guilford County Health Department, employees from three area hazardous waste management facilities, and other interested individuals. Two evening training sessions were conducted prior to the series of evenings in which the survey was conducted. Attendance at the training session was not mandatory, but encouraged. Approximately half of the volunteers attended a two-hour training session; the rest were briefed prior to telephoning. Phone calls for the survey were conducted at the Guilford County Health Department in the Environmental Health Division offices from 6:30 to 9:30 p.m. each evening.

In order to have an accurate representation of residents in all areas of the county, a predetermined number of phone calls (based upon recent population statistics) were made to the various urban and rural areas of the county. This weighted determination was made by selecting the three-digit exchange numbers for Greensboro, High Point (including Jamestown), and the remaining (unincorporated) areas of the county (Gibsonville, McLeansville, Monticello, Summerfield, and Julian). Phone numbers for each area were then generated by random digit-dialing.

Volunteers were instructed to restrict their questioning to residential numbers only and to individuals 18 years or older. If a working number was reached, but was busy or no one was home, the survey was put aside and attempted at a later time. Only after a working number had been attempted unsuccessfully for at least six times, was it discarded and a new number selected. To eliminate interviewer bias, volunteer callers were asked not to interview any

friends or acquaintances that they inadvertently reached through the random digit-dialing process.

Results:

A total of 332 individuals completed the telephone survey. One hundred fifty-nine calls were made to Greensboro residents, 72 calls to High Point and Jamestown residents, and 91 calls to county residents in the remaining unincorporated areas. Overall demographics revealed that the majority of the respondents were female (66%) between the ages of 25-44 years. Most respondents had completed a level of education of 9th-12th grade (36%), while 25% of the respondents had completed "some college or advanced education (25%)." The average size of respondents' households was 2-4 persons (78%).

In general, the results of the survey revealed that Guilford County residents were unaware of the presence and potential danger of hazardous substances in their homes. When asked the following question,

QUESTION #3: Do you have substances in your home, shed, or garage that you would consider potentially harmful to your family, pets, or the environment?

YES 141 (43%) NO 186 (57%)

less than half the respondents (43%) indicated that they had substances that they considered harmful. As a way of assessing the perceived need for household hazardous waste disposal, respondents who indicated that they did have potentially harmful substances were asked,

QUESTION #4: Are there harmful substances in your home, shed, or garage that you are not sure how to get rid of?

YES 17 (5%) NO 119 (36%)

Only 5% of the respondents indicated that they were not sure how to "get rid of" the potentially harmful substances. When informed that special collection programs had taken place in different areas of the country to collect hazardous wastes from households, however, and asked if they would be willing to participate in a special collection program, the response was overwhelmingly positive.

QUESTION #5: Many communities across the country have developed special programs to collect and dispose of potentially harmful materials from homes in a safe manner.

If there were a special disposal service available in your area, would you be willing to separate such materials from your regular trash?

YES 283 (85%) NO 31 (9%) DEPENDS 12 (4%)

Despite the overall lack of awareness about hazardous products, as demonstrated in questions #3 and #4, the majority of the individuals interviewed (85%) indicated that they would be willing to separate out the hazardous substances ("if I had any"), for collection and disposal

Those same individuals were then given two options for disposal of the potentially harmful materials; a drop-off point at a nearby collection center, and a phone-in special pickup service. Separate questions queried the respondents for the method of collection and disposal they would most prefer.

QUESTION #6a: Would you then be willing to drop off the separated wastes at a nearby collection center?

YES 239 (72%) NO 28 (8%)

QUESTION #7a If a special pickup service were available, would you be willing to phone in to have your separated wastes collected?

YES 271 (82%) NO 20 (6%)

Both questions were followed up by a second question that asked if they would be willing to pay for each of the services. Respondents indicated a preference of the phone-in program (82%) as opposed to the drop-off method (72%). Responses to the follow-up question, however, indicated that their participation would drop slightly if they were required to pay for either service (from 82% to 56% for the phone-in service, and from 72% to 50% for the drop-off method)

PERCENTAGE OF RESPONDENTS WILLING TO PARTICIPATE IN CERTAIN TYPES OF COLLECTION PROGRAMS

	Drop off at nearby collect. center	Pay for drop off	Call in for home pickup	Pay for pickup
YES	72%	50%	82%	56%
NO	10%	24%	7%	19%
DEPENDS	8%	15%	1%	13%

Knowledge of hazardous waste generation In order to assess their familiarity with the term hazardous waste, Guilford County residents were asked if they knew the meaning of the term hazardous waste.

QUESTION #9: Do you have a good idea of what is meant by the term hazardous waste? (Please respond "yes" or "no")

YES 245 (79%) NO 65 (20%)

Seventy-nine per cent said "yes", while 20% said "no", they didn't have a good idea of what the term meant. For those who did not know, a short paragraph was read to them by the telephone interviewer that provided EPA's definition of hazardous waste in lay terminology. The

79% that said "yes" were then given six examples of hazardous waste-producing entities and were asked their opinion of how much waste each generated.

QUESTION #10: I'm going to name several locations that generate hazardous waste. For each location would you please indicate if you think it generates a small amount, moderate amount or large amount of hazardous waste?

Possible responses: 1. SMALL 2. MODERATE 3. LARGE 4. UNSURE

Not surprisingly, respondents estimated that chemical companies produce a large amount of hazardous waste while households produce only a small portion of the waste.

RESPONDENTS ESTIMATION OF HAZARDOUS WASTE GENERATION

Hazardous waste generators	Estimated amount of waste generated			
	Small	Moderate	Large	Unsure
furniture co.	18%	31%	35%	17%
dry cleaners	20%	28%	30%	23%
households	66%	23%	5%	6%
chem. co.	3%	7%	83%	7%
farms	24%	44%	23%	10%
pharmaceuticals	13%	24%	42%	21%

We then asked the survey respondents their opinion on the effect of hazardous waste from households toward environmental contamination.

QUESTION #11: Do you consider the generation of hazardous waste from households a...?

1. major source of environmental contamination
2. moderate source of environmental contamination
3. minor source of environmental contamination
4. does not contribute to environmental contamination at all.

Sixty-four percent of survey respondents felt that HHW was either a minor source of environmental contamination or did not contribute to environmental contamination at all.

Household Trash Disposal As a means of estimating the way in which Guilford County residents disposed of their household wastes (and most

likely HHW) residents were asked to identify their usual method of disposal. The methods from which they could choose were burning, recycling, composting, pick-up by regular collection, pour on ground, pour down sink or toilet, dump down storm sewer, take to dumpster, store indefinitely, and other [means of disposal].

Survey results show that of the methods listed, disposal was most frequently accomplished by regular trash collection (82%), taking it to a dumpster (28%) was second, and pouring it down the sink or toilet (24%), third. A greater percentage of High Point residents (91%) utilized home collection than did Greensboro residents (84%) or the rest of the county (69%). Other significant findings reveal that rural residents of the county burn their waste more often than Greensboro or High Point residents (39% as opposed to 9% and 4%, respectively) and that rural residents recycle their household waste more than their urban counterparts.

Methods of disposal for HHW Survey respondents were then asked to indicate the method by which they disposed of the following categories of household hazardous waste: household cleaners, insecticides/herbicides, waste motor oil, and paints and paint products. For the household cleaners category, 41% said that they "use it up" and throw the "empty" container away. The second most frequent disposal method indicated was by home pick-up (i.e., regular collection), (38%). The next category of household waste listed was insecticides/herbicides (i.e., "bug spray or weed killer"). Respondents again favored "using it up" as their preferred and practiced method of disposal (40%) and similarly indicated home pick-up (37%) as the next most common disposal method. The third category of household waste was waste motor oil. Half of the respondents indicated that they used some disposal method other than the ten disposal methods listed on the survey. The response "other" was selected by 50% of the respondents while two other responses "home pickup" (13%) and "pour on ground" (12%) were relatively evenly indicated as regular disposal methods. It is interesting to note that approximately 8% of those who responded to this question indicated that they recycled their used motor oil. Unfortunately, there was no provision in the survey to determine where they recycled their waste motor oil. The last category of household waste listed was "old paints and paint thinners." Respondents reported that they most commonly disposed of wastes in this category through the regular home pick-up (39%) while nearly thirty percent (30%) of the respondents said they used some "other" (unspecified) method of disposal.

Discussion:

Although it is difficult to draw conclusions from only one research effort, this survey does benefit decisionmakers by providing a starting point for further discussion. As with any study, the presentation of relevant findings often raises additional questions. In an attempt to address issues and concerns regarding the results of the study, the following discussion is organized into three main subject areas: current disposal practices, awareness of household

hazardous waste generation, and willingness to participate in organized collection and disposal efforts.

Current disposal practices: A special effort was made in designing the survey questionnaire to avoid introducing the term **household hazardous waste** prematurely. This was done to minimize any bias the term alone would have on responses to the questions. However, by referring to household waste as "general garbage and trash," we may have inadvertently biased the responses to some of the disposal method questions. Another possible shortcoming of the questionnaire was in asking questions that required a response that could be viewed as an admission of wrongdoing (for example, disposing of waste by "pouring it down the sink", and "pouring it on the ground"). It is likely that these methods were under-reported as means of disposal. The fact that several respondents did answer affirmatively, however, may indicate that the respondent: 1) was unaware of the negative consequences of improper disposal of certain household products and felt free to answer truthfully; 2) was aware of the negative consequences, but only used those methods for products or wastes that could (with caution) be disposed of in a safe manner; or 3) was aware of the negative consequences and decided to admit to unsafe practices, regardless. In any case, there is good reason to assume that such disposal methods were under-reported.

The importance of determining the type of refuse disposal practices used in different parts of the county is that they may be helpful in selecting a type of HHW collection and disposal program that would best complement the existing waste disposal system. The information obtained on disposal practices in this survey, however, should be used cautiously for the following reason. The county's waste collection system is predicated on a system that allows as many as six different waste haulers to operate within its jurisdiction. Urban dwellers are normally required to utilize the city trash collection services while rural dwellers have more latitude in choosing the type of disposal they use. The survey results, therefore, suggest that one area of the county may recycle more or utilize home pick-up more than other areas of the county (see results section). The implication that this may have on a potential HHW program is that it may either help or hinder the program based upon the type of disposal service that county residents are accustomed to and how much (or little) effort is required of them to participate. For example, residents may object to transporting their **hazardous household wastes** if they normally have their household trash collected. Likewise, rural dwellers who are accustomed to transporting their trash may not be as opposed to doing the same for HHW. This point is relevant to other "alternative" waste disposal programs such as recycling efforts, and should be taken into consideration during program planning stages.

Fifty percent (50%) of Guilford County residents reported that they use a method of disposing of their waste motor oil "other" than the methods listed in the survey. It is difficult to determine what "other" disposal methods truly means. Does it mean that they take their waste motor oil to a gasoline station or garage for disposal? If so, which gas station(s) accept the oil and what is their policy

for accepting it? How much does it cost? Are there any other locations in the county where citizens can take their waste oil for recycling or disposal? This fact alone could have a direct bearing on a HHW collection program if waste motor oil was one of the wastes that the program accepted. For the 12% that indicated that they pour waste motor oil on the ground, are they aware of the legal implications and environmental consequences of doing so? An educated assumption would indicate that the general public is not aware of this fact and continues to "spray dirt roads" and "kill grass around fence posts" with their used motor oil.

Awareness of HHW generation: Sixty percent (60%) of Guilford County residents feel they don't have harmful substances in their homes. Of those who reported having substances in their homes that they felt were harmful, an overwhelming 88% said that they felt they did not have a problem getting rid of the harmful substances. The responses to these two questions alone may be indicative of an overall lack of awareness of the hazardous substances in homes and the need to properly dispose of them. Obviously, a strong public education campaign is in order for increasing citizen awareness of HHW in Guilford County.

Willingness to participate in organized collection and disposal efforts The encouraging aspect of the survey in regard to HHW collection is that county residents overwhelmingly indicated that they would be willing to separate their waste and participate in a HHW program if it were available. Although fewer respondents were willing to participate if they were required to pay for the service, the overall interest is substantial.

Summary

There are four major findings from the survey that suggest that a carefully planned household hazardous waste program would provide a needed service for Guilford County.

1. The general awareness level in Guilford county regarding household hazardous waste is quite low and deserves attention.
2. The survey responses indicate that waste disposal methods for hazardous wastes are being employed by Guilford County residents due to low awareness levels of the negative impacts of improper disposal of HHW.
3. A clear majority of county residents are willing to participate in a HHW collection and disposal program if it is not prohibitive in terms of cost and is relatively accessible to their place of residence.
4. There are enough differences in attitudes, disposal practices, and demographics from area to area within the county that results specific to the different areas need to be carefully examined before designing and implementing a HHW collection and disposal program for Guilford County.

Recommendations

The results of this survey are specific to the needs and concerns of a representative sample of Guilford County residents and should not be used as definitive data for other counties. The information presented here, however, is valuable in that it gives one an idea of how North Carolina citizens (in at least one geographical area of the state) respond to questions about HHW.

Conducting the survey had some other valuable outcomes that other counties or municipalities may want to consider. First, designing the questionnaire and conducting the survey with the backing and assistance of the Guilford County Hazardous Waste Task Force and the other volunteer organizations, proved to be an educational experience for all. Working closely with nearly 30 individuals who were well aware of household hazardous waste issues by the time the survey was complete helped educate local residents who may become involved in future program planning efforts. The more than 300 county residents who participated in the survey were also educated during the course of the survey and many expressed a curiosity at whether the county was actually planning a program; some residents even volunteered their assistance. Conducting a community survey, therefore, can be a starting point for program publicity, in addition to the obvious function of providing valuable data for program planning purposes.

The primary disadvantage of the survey was that the process was labor-intensive. The decision to conduct a survey prior to initiating a HHW program, therefore, is one that should be made based upon available resources, taking the benefits and costs into consideration. Based upon our experience in Guilford County, N.C., the educational benefits and the amount of information gained for future program planning purposes indicate that the benefits were well worth the effort.

Appendix E

HHW resources in North Carolina

HHW resources in North Carolina

- **Solid and Hazardous Waste Management Branch**

Contact: William Paige

306 N. Wilmington St.
P.O. Box 2091
Raleigh, NC 27602
(919) 733-2178

- **North Carolina Pollution Prevention Program**

Contact: Roger Schecter

512 N. Salisbury St.
P.O. Box 27687
Raleigh, NC 27611
(919) 733-7015

- **Governor's Waste Management Board**

Contact: Linda Little

325 N. Salisbury St.
Raleigh, NC 27611
(919) 733-9020

- **Institute for Environmental Studies**

Contact: Richard Andrews

311 Pittsboro St. 256-H
University of North Carolina
Chapel Hill, NC 27514
(919) 966-2358

Appendix F

Cost savings charts

Source: Purin, G., et.al., 1984. Household Hazardous Waste: Solving the Disposal Dilemma. Sacramento, CA: Golden Empire Health Planning Center.

SACRAMENTO, CA's HHW PROJECT

The following are some approximate costs/cost savings for some activities associated with the Sacramento, CA 1984 collection program.

<u>ITEM</u>	<u>REGULAR RATES</u>	<u>DISCOUNTED RATES</u>	<u>TOTAL PROGRAM COSTS*</u>
Personnel rates (from HHW firms conducting <u>packaging and transporting of waste</u>)	\$ 28.50/hr. (M-F)** \$ 42.75/hr. (Sat.)	No Change \$ 34.50	\$ 74.00 4,675.00
Drum Costs (17H)	\$ 28.00 each	\$ 18.25 (reconditioned)	3,364.00
Salvage Drum (over pack)	\$125.00 each	\$ 77.00	77.00
Zonite (packaging material)	\$ 10.00/30 lb. bag	\$ 6.85	2,317.00
Labels for drums	\$.50 each	\$.25	80.00
Use of truck	\$ 20.00/hr.	\$ 14.00	1,151.00
Disposal costs per drum	\$ 40.00 (extremely hazardous) \$ 20.00 (hazardous)	\$1,830 (total cost)	1,830.00 (included transport)
Storage of wastes by hw transfer station prior to transport for disposal	\$.25 (1-30 days) \$.30 (30-90 days) \$.35 (90+ days)	In-kind	--
Newspaper Advertisements	\$800.00 (3 ads total)	3 additional ads were contributed for a total of 6	800.00
267,000 utility bill inserts/ mailing costs	\$4,500	\$3,200	3,200.00
Collection site locations (state parking lots)	\$200	\$100	100.00
Color Poster on chemical hazards in the home (500)	\$739	No Change	739.00
Fliers (20,000)	\$320	No Change	320.00
			----- TOTAL \$18,727.00

*These costs do not include staff time or operational expenses (e.g., postage, xeroxing, etc.) involved in administering and coordinating the program.

**Some hours were spent collecting waste from the public during normal business hours when persons were unable to attend or simply missed the designated disposal days.

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM FUNDRAISING DRIVE
FROM BARNSTABLE COUNTY, MA

I. Waste Cleanup Fund

Public Donations Received

Town of Barnstable	\$1,200
Town of Yarmouth	1,000
Town of Mashpee	225
Town of Sandwich	400
Town of Orleans	300
Town of Truro	100
Town of Wellfleet	250
	<u>\$3,500</u>

Private Source Donations Received

Dow Chemical, U.S.A.	\$ 1,500
Chevron Chemical Company	
Orcho Products Division	1,000
Coca Cola Company	500
McDonald's	500
Hynnais Rotary Club	200
Packaging Industries	100
Bayside Disposal	100
Barbara Wylan	100
Christmas Tree Shops	100
Century 21 Cape Cod Assoc.	100
Angelo's Supermarket	25
Country Garden	25
	<u>\$ 4,250</u>

Public Source Pledges

Town of Dennis	\$1,000
Town of Harvich	500
Town of Provincetown	250
Town of Bourne	600
	<u>\$2,350</u>

Private Source Pledges

Cape Cod Contractors & Builders	\$ 100
Ocean Spray Cranberries	500
	<u>\$ 600</u>

Private Services Donated

The Cape Cod Times - Advertising	(\$400)	A-1 Instant Printing	(\$100)
The Register - Advertising	(200)	Crane Duplicating "	(100)
Falmouth Enterprise-Advertising	(100)	Zip Printing	(100)
von Storch Designs - Program T-Shirts	(300)		(\$300)
(66)			
Quick Service Press -	(40)		
Graphics	(30)		
Cape Cod Airport - Advertising	(80)		
	<u>\$1,150)</u>	Total	(\$1450)

II. Public Education Fund

Mass. Department of Environmental Management (DEM) \$1,000

III. Staff Support

Mass. Department of Environmental Quality Engineering - 205J Grant

Summary

Total cash (public and private) received to date	\$11,700
Total value of fundraising effort (cash total plus services donated)	\$13,150

Appendix G

Contract examples

Source: Purin, G., et.al., 1984. Household Hazardous Waste: Solving the Disposal Dilemma. Sacramento, CA: Golden Empire Health Planning Center.

D. W. MCKENZIE Director
DOUGLAS H. FRALEIGH Deputy Director
W. C. WANDERER, JR., Deputy Director



COUNTY OF SACRAMENTO

DEPARTMENT OF PUBLIC WORKS

COUNTY ADMINISTRATION BUILDING - ROOM 304 - 127 SEVENTH STREET
SACRAMENTO, CALIFORNIA 95814

October 25, 1983

APPROVED
BY RESOLUTION
BOARD OF SUPERVISORS

OCT 25 1983

Douglas H. Fraleigh
BY
Clerk of the Board

To: Board of Supervisors
From: Department of Public Works
Subject: SEPARATE MATTER: GRANT AGREEMENT WITH GOLDEN EMPIRE HEALTH
PLANNING CENTER (GEHPC) FOR HOUSEHOLD HAZARDOUS
WASTES DISPOSAL PROJECT

RECOMMENDATION

1. Adopt the attached Resolution authorizing the Chairman of your Board to sign the attached Grant Agreement with the Golden Empire Health Planning Center in the amount of \$19,438.
2. Direct the Clerk of the Board to retain the fully executed original and transmit two fully executed copies to the Director of Public Works.

The purpose of the attached Grant Agreement with the Golden Empire Health Planning Center (GEHPC) is to provide options for the disposal of household hazardous wastes to Sacramento City and County residents. The term of the Agreement will be from the date of execution to June 1, 1985.

Funding for the Agreement has been allocated in the Sacramento County Refuse Enterprise FY 1983-84 budget. The cost of the Agreement is \$19,438. The program budget and description of services are attached (Exhibit A).

It should be noted that the Agreement provides that (1) the full amount of the grant will be paid to GEHPC up front of services rendered before December 15, 1983 to allow GEHPC to meet Federal grant requirements, and (2) under the terms of the Agreement, the COUNTY agrees to add GEHPC as an additional insured under its liability insurance, including its self insured retention, but only as respects claims against this Agreement. However, the sub-contractor (American Environmental Management Corporation) shall be required to carry insurance as prescribed in Exhibit "B" of the Agreement, for all project field operations and sub-contractors shall hold County & GEHPC harmless. The Agreement has been approved as to form by County Counsel.

Respectfully submitted,

D. W. McKenzie
D. W. McKenzie

1 of 2

Board of Supervisors

October 25 1983

Page 2

APPROVAL RECOMMENDED:

Brian H. Richter
Brian H. Richter, County Executive

DWM:gal:dh
0522B
Attachments

cc: Director of Public Works
Director of Health
Auditor-Controller
County Executive
Solid Waste Management Division
Environmental Health
CEBSA
Bruce Risley

2 of 2

RESOLUTION NO. 83-1343

BE IT RESOLVED AND ORDERED that the Chairman of the Board of Supervisors be and is hereby authorized and directed to execute a grant agreement to administer a residential hazardous waste disposal project in the form hereto attached, on behalf of the COUNTY OF SACRAMENTO, a political subdivision of the State of California, with the GOLDEN EMPIRE HEALTH PLANNING CENTER

and to do and perform everything necessary to carry out the purpose of this Resolution.

On a motion by Supervisor BRYAN,
seconded by Supervisor JOHNSON, the foregoing
Resolution was passed and adopted by the Board of Supervisors of the County of Sacramento, State of California, this 25th day of October,
19 83, by the following vote, to wit:

AYES: Supervisors, BRYAN, COLLIN, JOHNSON, SMOLEY, SHEEDY
NOES: Supervisors, NONE
ABSENT: Supervisors, NONE

In accordance with Section 23622 of the Government Code of the State of California, a copy of this document has been delivered to the Clerk of the Board of Supervisors, County of Sacramento, on

OCT 25 1983

Sylvia Flora
Clerk, Board of Supervisors

W. A. Murphy
Chairman of the Board of Supervisors
of Sacramento County, California

ATTEST: Bernice G. Williams
Clerk of the Board of Supervisors

GEL:dh
0522B

1 of 1

FILED

OCT 25 1983

BOARD OF SUPERVISORS
BY Bernice G. Williams
CLERK OF THE BOARD

AGREEMENT

THIS AGREEMENT made and entered into as of this 25th day of October, 1983, by and between the COUNTY OF SACRAMENTO, a political subdivision of the State of California, hereinafter referred to as "COUNTY", and the GOLDEN EMPIRE HEALTH PLANNING CENTER, a California non-profit corporation, hereinafter referred to as "CONTRACTOR".

W I T N E S S E T H

WHEREAS, COUNTY desires to extend certain services to the residents of the County of Sacramento by contracting with CONTRACTOR; and

WHEREAS, CONTRACTOR is equipped, staffed and prepared to provide such services on the terms and conditions set forth in this Agreement and the exhibits which are part of this Agreement;

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

1. TERM. This Agreement shall be for the term beginning date of execution and ending June 1, 1985.
2. NOTICE. Notice shall be deemed to have been served when it is deposited in the United States Mail, postage prepaid, and addressed as follows:

TO COUNTY	TO CONTRACTOR
D. W. McKenzie, Director Department of Public Works 827 7th Street, Room 304 Sacramento, CA 95814	Rick Badger, Director Golden Empire Health Planning Center 827 7th Street, Room 441 Sacramento, CA 95814
3. DIRECTOR. As used in this Agreement, "DIRECTOR" shall mean the Director of Public Works of Sacramento County.
4. APPLICABLE LAWS. CONTRACTOR AND SUBCONTRACTOR (which SUBCONTRACTOR shall be American Environmental Management Corporation) shall provide services in accordance with applicable Federal and State statutes, regulations and directives, and any changes or amendments thereto, including those described in exhibits to this Agreement.

5. DESCRIPTION OF SERVICES. CONTRACTOR shall provide services in the type and manner described in Exhibit "A".

6. STATUS OF CONTRACTOR.

- a. It is understood and agreed that CONTRACTOR is an independent contractor and that no relationship of employer-employee exists between the parties hereto. CONTRACTOR shall not be entitled to any benefits payable to employees of COUNTY. CONTRACTOR shall be covered under COUNTY liability insurance program with respect to this project and this project only; however, the SUBCONTRACTOR-operator of the waste receiving and handling site shall be fully insured and hold CONTRACTOR and COUNTY harmless.
- b. It is further understood and agreed by the parties hereto that CONTRACTOR in the performance of its obligation hereunder is subject to the control or direction by COUNTY merely as to the result to be accomplished by the services hereunder agreed to be rendered and performed and not as to the means and methods for accomplishing the results.
- c. If, in the performance of this Agreement, any third persons are employed by CONTRACTOR, such persons shall be entirely and exclusively under direction, supervision and control of CONTRACTOR. All terms of employment, including hours, wages, working conditions, discipline, hiring and discharging or any other terms of employment or requirements of law, shall be determined by CONTRACTOR; and COUNTY shall have no right or authority over such persons or the terms of such employment.
- d. Any subcontract entered into pursuant to this agreement shall incorporate the terms of this agreement as required and shall be subject to the prior written approval of DIRECTOR.

7. CONFLICT OF INTEREST. CONTRACTOR and employees of CONTRACTOR shall have no interest, and shall not acquire any interest, direct or indirect, which will conflict in any manner or degree with the performance of services required under this Agreement.

8. NON-DISCRIMINATION IN EMPLOYMENT.

a. CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, creed, religion, national origin, sex, age, or physical or mental handicap. CONTRACTOR will take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, national origin, age, or physical or mental handicap. Such action shall include, but not be limited to the following: employment, upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by CONTRACTOR setting forth the provisions of this Equal Opportunity Clause.

b. CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, creed, religion, sex, national origin, age, or physical or mental handicap.

c. CONTRACTOR will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice, to be provided by CONTRACTOR, advising the labor union or workers' representative of commitments of CONTRACTOR under this Equal Opportunity Clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

9. NON-DISCRIMINATION IN SERVICES, BENEFITS, AND FACILITIES.

CONTRACTOR shall not discriminate in the provision of services because of color, race, creed, national origin, religion, sex, age, or physical or mental handicap in accordance with Title VI of the Civil Rights Act of 1964, 42 U.S.C. Section 2000d, rules and regulations promulgated pursuant thereto, or as otherwise provided by State and Federal Law. For the purpose of this Agreement, distinctions on the grounds of race, color, creed, or national origin include but are not limited to the following: denying any service or benefit to a participant which is different, or is provided in a different manner or at a different time from that provided to other participants under this Agreement; subjecting a participant to segregation or separate treatment in any matter related to his receipt of any service; restricting a participant in any way in the enjoyment of any advantage or privilege enjoyed by others receiving any service or benefit; treating a participant differently from others in determining whether he satisfied any admission, enrollment quota, eligibility, membership, or other requirement or condition which individuals must meet in order to be provided any service benefit; the assignment of time or places for the provision of services on the basis of race, color, creed, or national origin of the participants to be served. COUNTY and CONTRACTOR will take affirmative action to insure that intended beneficiaries are provided services without regard to race, color, creed, national origin, religion, sex, age, or physical or mental handicap.

10. INDEMNIFICATION. SUBCONTRACTOR shall indemnify, defend and hold harmless COUNTY and CONTRACTOR, their officers, agents and employees, from and against all claims, losses, liabilities or damages, including payment of reasonable attorneys' fees, arising out of or resulting from the performance of its subcontract entered into as a consequence of this Agreement, caused in whole or in part by any negligent act or omission of SUBCONTRACTOR or anyone directly or indirectly employed by SUBCONTRACTOR, regardless of whether caused in part by a party indemnified hereunder.

11. INSURANCE.

4. CONTRACTOR shall be named as an additional insured on the COUNTY'S liability insurance policies and under the COUNTY'S self insured program without requirement of contribution thereto by CONTRACTOR. CONTRACTOR shall not do anything which unnecessarily increases liability risk of COUNTY and shall not participate in field operations of SUBCONTRACTOR.

b. SUBCONTRACTOR shall maintain in full force at all times during the performance of this Agreement, insurance covering its operations. Types of insurance shall be subject to the conditions and specifications set forth in Exhibit "B". Certificates evidencing SUBCONTRACTOR insurance shall be filed with CONTRACTOR and COUNTY before the subcontract is signed.

12. REPORTS, RECORDS, AND ACCOUNTS. CONTRACTOR shall submit an interim financial and program report to the Board of Supervisors regarding the results and findings of the project through August 31, 1984 by November 30, 1984. Upon expiration or termination of this Agreement all service and financial records shall be retained by CONTRACTOR for a minimum period of four (4) years or until audit or service review findings are resolved, whichever is later. A final report shall be submitted to the Board of Supervisors no later than sixty days following termination or completion of the project or June 30, 1985 whichever is earlier.

13. GRANT LIMITATION. CONTRACTOR shall not be required and is not authorized to incur costs in excess of the grant limitations set forth in Exhibit "A" or as otherwise modified by DIRECTOR.

14. ASSIGNMENT. This Agreement is not assignable by CONTRACTOR in whole or in part, without the express written consent of DIRECTOR.

15. ALTERATION. Except as provided hereto, no alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by both parties.

16. SUCCESSORS. This Agreement shall bind the successors of COUNTY and CONTRACTOR in the same manner as if they were expressly named. Waiver by either party of any default, breach or condition precedent shall not be construed as a waiver of any other default, breach or condition precedent or any other right hereunder.

17. TIME. Time is of the essence of this Agreement.

18. INTERPRETATION. No interpretation or any provision of this Agreement shall be binding upon COUNTY unless agreed in writing by DIRECTOR and the County Counsel of COUNTY.

19. DISPUTES. Any dispute arising under this Agreement shall be decided by DIRECTOR who shall put his decision in writing and mail a copy thereof to the CONTRACTOR at the address specified for notices to CONTRACTOR. The decision of DIRECTOR shall be final unless within thirty (30) days from the date of mailing such copy CONTRACTOR appeals the decision in writing to the

Sacramento County Board of Supervisors. In connection with any appeal proceeding under this paragraph, CONTRACTOR shall be afforded the opportunity to be heard and offer evidence in support of its appeal. Pending a final decision of dispute hereunder CONTRACTOR shall proceed diligently with the performance of the Agreement and in accordance with DIRECTOR'S decision. The decision of the Board of Supervisors shall be final.

20. LICENSING AND STAFFING.

a. CONTRACTOR warrants that it and SUBCONTRACTOR and all their employees have all necessary licenses, or permits, or both required by the laws of the United States, the State, COUNTY and all other appropriate governmental agencies, and agrees to maintain these licenses, permits, or both, in effect for the duration of this Agreement. Failure to maintain the licenses, permits, or both shall be deemed a breach of this Agreement and constitutes grounds for the termination of this Agreement by COUNTY.

b. CONTRACTOR shall make available to COUNTY, on request of DIRECTOR, a list of the persons who will provide services under this Agreement. This list shall state the name, title, professional degree, and work experience of such persons.

21. PROGRAM REVIEW AND EVALUATION.

DIRECTOR or his designee shall represent COUNTY in all matters pertaining to services rendered pursuant to this Agreement.

22. TERMS.

CONTRACTOR shall perform the scope of work specified in Exhibit "A".

23. CLAIMS FOR PAYMENT.

a. COUNTY shall process a warrant for payment in the amount of \$19,438 grant money to CONTRACTOR immediately after the signing of this Agreement so that CONTRACTOR may meet Federal requirements of up front matching funds for the project. CONTRACTOR shall receive payment before December 15, 1983.

24. TERMINATION OF AGREEMENT.

This Agreement may be terminated as follows:

a. COUNTY may terminate this Agreement by giving notice to CONTRACTOR at the address specified herein in the basic Agreement no less than (5) days prior to the effective date of the termination;

b. If this Agreement is terminated, CONTRACTOR shall retain an amount proportional to the percentage of the total work completed by CONTRACTOR plus

any additional direct costs incurred by CONTRACTOR because of the termination, but no more than a total of \$19,438 together with the interest earned thereon by GEHPC prior to termination of Agreement. The amount not retained by CONTRACTOR shall be refunded to COUNTY.

25. PRIOR AGREEMENTS.

All prior agreements regarding this subject matter between COUNTY and CONTRACTOR are hereby terminated effective September 30 prior to the date of this Agreement.

26. EXTENT OF CONTRACTUAL DOCUMENTS. This Agreement shall consist of this basic document and Exhibits "A" and "B", and all laws and governing instruments previously referred to in this Agreement or in any of the exhibits made part of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

COUNTY OF SACRAMENTO, a political subdivision of the State of California

BY Red Murphy
Chairman, Board of Supervisors

APPROVAL AS TO FORM

[Signature]
County Counsel

By Rock [Signature]
CONTRACTOR

(SEAL)

ATTEST: [Signature]
Clerk of the Board of Supervisors

Agreement No. _____

EXHIBIT "A" TO AGREEMENT
Between the COUNTY OF SACRAMENTO

hereinafter referred to as "COUNTY" and

GOLDEN EMPIRE HEALTH PLANNING CENTER

hereinafter referred to as "CONTRACTOR"

PROGRAM & COSTS

CONTRACTOR shall administer and supervise the Household Hazardous Waste Disposal Project as specified in this exhibit.

TENTATIVE DESIGN: One urban hazardous materials collection site will be open four hours on each of not less than five consecutive Saturdays. Following the termination of the collection site service on the five or more designated days, a residential hazardous waste phone-in service would be made available on a year-round basis. The caller would be told how and where to dispose of the hazardous waste. If appropriate, the caller would be directed to bring the waste to American Environmental Management Corporation at an agreed-upon time.

TOTAL PROJECT COST	\$36,116	(\$36,572)**
COUNTY COST	\$18,982*	(\$19,438)**
IN-KIND	\$15,934	(Includes \$10,000 from the Mott Foundation)
CITY COST	\$1,200	(Inserts)

*Includes \$3,330 for printing and mailing of inserts and \$2,629 for administrative costs (15%).

**Increase reflects the use of one hazardous waste professional to log incoming materials at the site in lieu of a clerical support staff.

It is anticipated that a minimum of 300 households will use the collection site during the five designated time periods. Additionally, approximately 250 additional households are expected to utilize the call-in service throughout the year.

Based on last year's average generation of waste per household (28 pounds), it is expected that 550 households will generate 15,400 pounds of waste or over seven tons. This figure does not represent any waste oil that may be collected. Last year, 2,400 pounds of waste oil were collected from households.

The \$19,438 essentially represents a grant from the COUNTY to GEHPC so that it can implement a disposal project based on and as a followup to the previous COUNTY/GEHSA residential hazardous waste disposal project.

The grant money is being provided up front to comply with Federal grant requirements; and it is the intent of this Agreement to provide wide latitude to GEHPC in designing and implementing the project, with the understanding that GEHPC shall report back to the Board with a complete financial and program report at the conclusion of the project.

ROLES

COUNTY Risk Manager shall add GEHPC as an additional insured under COUNTY insurance programs with respect to this project and this project only.

COUNTY SOLID WASTE MANAGEMENT DIVISION will provide to GEHPC \$19,438 which includes the Solid Waste Management Division IBM advertisement billing insert.

GEHPC will enter into SUBCONTRACT with American Environmental for operation of the five day collection site field operations; will develop written material and coordinate development and advertisement for collection site project and for phone in service. GEHPC shall not participate in field operations.

COUNTY ENVIRONMENTAL HEALTH will receive and distribute information and otherwise handle the year long phone-in information service based on materials, policies and procedures developed by GEHPC in cooperation with Health.

SUBCONTRACTOR-AMERICAN ENVIRONMENTAL will provide all personnel and equipment and conduct all field operations and assume all liability for such operations during the collection site project.

NOTES

1. All roles above shall be carried out in strict accordance with the terms of this basic agreement and exhibits.

1 Urban Site, 4 Hours, 6 Saturdays and
Year-Round Phone-in Service

	<u>TOTAL COST</u>	<u>COUNTY COST</u>	<u>IN-KIND SERVICE</u>	<u>CITY COST</u>
<u>2 Hazardous Waste Professionals</u> \$25/hr. X 7 hrs./week X 6 Saturdays X 2 Professionals = \$2,100 (Collection Site) \$25/hr. X 50 hrs. = \$1,250 (Year-Round Phone-in)	\$ 3,350	\$ 3,350	--	--
<u>Support Staff</u> \$5/hr. X 4 hrs./week X 6 Saturdays (Collection Site) = \$144 \$9/hr. X 3 hrs. week X 46 weeks (Year-Round Phone-in) = \$1,242	\$ 1,386	\$ 1,386	--	--
<u>Drums for Shipment</u> \$26.80/Drum X 15 Drums week X 6 Saturdays (90 Drums) = \$2,412 \$26.80/Drum X 20 Drums for remainder of year = \$536	\$ 2,948	\$ 2,278	\$ 670 (Myra Drums donation of 25 Drums)	--
<u>Packaging Material</u> \$25/Drum X 15 Drums week X 6 Saturdays = \$1,800 \$20/Drum X 20 Drums for Remainder of Year = \$400	\$ 2,200	\$ 1,474	\$ 726 (CNS Donation)	--
<u>Disposal Costs (110 Drums)</u> \$18 X 87 Drums (Hazardous Waste) = \$1,566 \$40 X 20 Drums (Extremely Hazardous) = \$1,120	\$ 2,760	\$ 2,070 (\$15 Hazardous \$10 Extremely Hazardous)	\$ 690 (Cornelia)	--
<u>Transport Costs (Includes Applicable State Taxes)</u> Each Full Load of 75-88 Drums = \$800 30 Remaining Drums X \$7 = \$210 \$2 State Tax X 110 Drums = \$220	\$ 1,230	\$ 770 (\$7 X 110 Drums)	\$ 460 (Cornelia)	--
<u>Trucking Fee</u> \$40/hr. X 7 hrs. week X 6 Saturdays	\$ 2,520	\$ 1,090 (\$45 X 7 X 6)	\$ 630 (American Env.)	--
<u>Storage Costs</u> 80 Drums X \$.30 = \$24.00 30 Drums X \$.30 = \$9.00	\$ 33	\$ --	\$ 33	--
<u>IBM Inserts</u>	\$ 4,500	\$ 3,300	--	\$ 1,200
<u>Publicity Efforts</u>	\$10,000	--	\$10,000	--
<u>Administrative Costs at 150</u>	\$ 2,464	\$ 2,464	--	--
<u>GENSA Operational</u>	\$ 2,500	--	\$ 2,500	--
<u>GENSA Support Staff</u>	\$ 225	--	\$ 225	--
<u>COST TOTALS</u>	<u>\$16,116</u>	<u>\$10,902</u>	<u>\$15,934</u>	<u>\$ 1,200</u>

2. It is the intent of this Agreement that disposal shall be free to citizens at the collection site on all five days, and that for as long as the grant money holds out that disposal be free for those citizens using the phone in service during the following year.

3. It is understood that GENPC, in cooperation with COUNTY HEALTH and the SUBCONTRACTOR, will work out the details of collection site location, timing of collection days, details of the phone in service, and methods of implementation sometime after the signing of the contract; but that the collection site project shall take place sometime in late spring/early summer of 1984; with the phone-in service to commence immediately thereafter.

Agreement No. _____

**EXHIBIT "B" TO AGREEMENT
Between the COUNTY OF SACRAMENTO**

hereinafter referred to as "COUNTY", and

GOLDEN EMPIRE HEALTH PLANNING CENTER

hereinafter referred to as "CONTRACTOR"

INSURANCE REQUIREMENTS

The SUBCONTRACTOR (American Environmental Management Corporation) shall secure the type and amount of insurance specified in this Exhibit.

- I. **COMPREHENSIVE GENERAL LIABILITY.** Coverage provides protection against liability claims, arising out of the SUBCONTRACTOR'S use of leased, owned, and off-premises operations. Comprehensive General Liability includes Products Liability Insurance which is protection arising out of the use, handling, and consumption of a product. CONTRACTOR must have contractual liability coverage.

SUBCONTRACTOR shall carry Comprehensive General Liability in the amount of \$5,000,000.

- II. **ENVIRONMENTAL IMPAIRMENT.** SUBCONTRACTOR shall have \$5,000,000 in Environmental Impairment insurance.

- III. **COMPREHENSIVE AUTOMOBILE INSURANCE.** Loss against damage or destruction of automobiles, or due to claims for damages arising from the ownership, maintenance, or use of automobiles; also loss to persons injured in certain specific ways due to cost of medical, surgical, or hospital care incurred as a result of automobile accidents.

SUBCONTRACTOR shall carry \$5,000,000 Bodily Injury and Property Damage, combined single limits per occurrence.

- IV. **WORKERS' COMPENSATION.** SUBCONTRACTOR shall have Workers' Compensation Insurance.

ALL LIABILITY POLICIES SPECIFIED IN PARAGRAPHS I, II AND III ABOVE SHALL HAVE BOTH THE COUNTY OF SACRAMENTO AND THE GOLDEN EMPIRE HEALTH PLANNING CENTER AS ADDITIONAL INSURED ON A PRIMARY BASIS AND SHALL SPECIFY THAT NO OTHER INSURANCE CARRIER SHALL BE CALLED UPON FOR ANY PURPOSE WITHIN THE LIMITS OF THE PRIMARY POLICY.


ALL INSURANCE COVERAGE MUST INCLUDE A 30-DAY NOTIFICATION TO THE COUNTY IN THE EVENT OF CANCELLATION, MODIFICATION OR REDUCTION IN COVERAGE. SUBCONTRACTOR SHALL BE THE PRIMARY INSURED FOR ALL OPERATIONS THAT FALL UNDER HIS SUPERVISORY CONTROL.

See Sections (10) Indemnification and (11) Insurance of the basic Agreement.

GEL:dh
0522B

CERTIFICATE OF INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policies listed below. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which the certificate is issued, the insurance afforded by the policies listed on the certificate is subject to all the terms of such policies.

NAME AND ADDRESS OF AGENCY  Anderson and Anderson Insurance Brokers, Inc. 2408 CAMPUS DRIVE IRVINE, CA. 92718 (714) 782-2288	COMPANIES AFFORDING COVERAGES COMPANY LETTER A PROTECTIVE NATIONAL COMPANY LETTER B MISSION NATIONAL COMPANY LETTER C COMPANY LETTER D COMPANY LETTER E
NAME AND ADDRESS OF INSURED American Environmental Management Corp. DBA: American Waste Container Service 11855 White Rock Road Rancho Cordova, CA 95670	

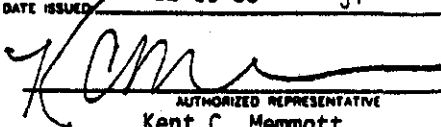
This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)		
					EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY	CGL 3472340	6-30-84	BODILY INJURY	\$	\$
	<input checked="" type="checkbox"/> COMPREHENSIVE FORM <input checked="" type="checkbox"/> PREMISES-OPERATIONS <input type="checkbox"/> EXPLOSION AND COLLAPSE HAZARD <input type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> CONTRACTUAL INSURANCE <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS <input checked="" type="checkbox"/> PERSONAL INJURY			PROPERTY DAMAGE	\$	\$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 500	\$ 500
				PERSONAL INJURY		\$ 500
A	AUTOMOBILE LIABILITY	CGL 3472340	6-30-84	BODILY INJURY (EACH PERSON)	\$	
	<input checked="" type="checkbox"/> COMPREHENSIVE FORM <input checked="" type="checkbox"/> OWNED <input checked="" type="checkbox"/> MIXED <input checked="" type="checkbox"/> NON-OWNED			BODILY INJURY (EACH OCCURRENCE)	\$	
				PROPERTY DAMAGE	\$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 600	
B	EXCESS LIABILITY	MN 012411	6-30-84	BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 9,000	\$ 9,000
	<input checked="" type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM					
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		Each Accident
A	OTHER Excess Umbrella	XUB 180-72-12	6-30-84			\$11,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES


Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 10 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

NAME AND ADDRESS OF CERTIFICATE HOLDER Golden Empire 2100 21st Street Sacramento, CA 95818 Attn: Gina Purin
--

DATE ISSUED	12-19-83	jff
 AUTHORIZED REPRESENTATIVE Kent C. Memmott		

CERTIFICATE OF INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverages afforded by the policies listed below. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which the certificate is issued, the insurance afforded by the policies listed on the certificate is subject to all the terms of such policies.

NAME AND ADDRESS OF AGENCY  Anderson and Anderson <small>INSURANCE BROKER, INC.</small> 2406 CAMPUS DRIVE IRVINE, CA. 92718 (714) 782-2298	COMPANIES AFFORDING COVERAGES COMPANY LETTER A PROTECTIVE NATIONAL COMPANY LETTER B MISSION NATIONAL COMPANY LETTER C COMPANY LETTER D COMPANY LETTER E
NAME AND ADDRESS OF INSURED American Environmental Management Corp. DBA: American Waste Container Service 11855 White Rock Road Rancho Cordova, CA 95670	

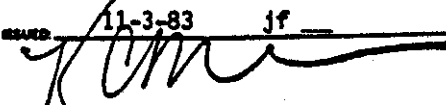
This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)		
					EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMPREHENSIVE FORM <input checked="" type="checkbox"/> PREMISES-OPERATIONS <input type="checkbox"/> EXPLOSION AND COLLAPSE HAZARD <input type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> CONTRACTUAL INSURANCE <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS <input checked="" type="checkbox"/> PERSONAL INJURY	CGL 3472340	6-30-84	BODILY INJURY	\$	\$
				PROPERTY DAMAGE	\$	\$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 500	\$ 500
				PERSONAL INJURY		\$ 500
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> COMPREHENSIVE FORM <input checked="" type="checkbox"/> OWNED <input checked="" type="checkbox"/> MIXED <input checked="" type="checkbox"/> NON-OWNED	CGL 3472340	6-30-84	BODILY INJURY (EACH PERSON)	\$	
				BODILY INJURY (EACH OCCURRENCE)	\$	
				PROPERTY DAMAGE	\$	
B	EXCESS LIABILITY <input checked="" type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM	MN 012411	6-30-84	BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 9,000	\$ 9,000
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		Each Accident
A	OTHER Excess Umbrella	XUB 180-72-12	6-30-84		\$11,000,000	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will ~~XXXXXXXXXX~~ mail 30 days written notice to the below named certificate holder. ~~XXXXXXXXXX~~

NAME AND ADDRESS OF CERTIFICATE HOLDER County of Sacramento Dept. of Public Works - George Lynch Solid Waste Management Division 960 Ecology Lane Sacramento, CA 95827
--

DATE ISSUED: 11-3-83 Jf

 AUTHORIZED REPRESENTATIVE
 2 of 2 **Kent C. Merritt**

Appendix H

Bid for proposal example

Source: Purin, G., et.al., 1984. Household Hazardous Waste: Solving the Disposal Dilemma. Sacramento, CA: Golden Empire Health Planning Center.

CITY OF PALO ALTO
NOTICE INVITING SEALED PROPOSALS

FOR
HAZARDOUS WASTE DISPOSAL

Project Manager: Peter A. Burnes

Phone: (415) 329-2117

Project Engineer: N/A

Phone: _____

Sealed proposals shall be delivered to the
Purchasing Division, 1st floor or mailed to:

Director of Purchasing Services
250 Hamilton Ave.
P.O. Box 10250
Palo Alto, CA 94303

by

3:00 P.M. Wed., October 10, 1984

and will be publicly opened on said day & hour in the

Council Conference Room
Civic Center
250 Hamilton Ave.
Palo Alto, CA

Revised 5/82

CITY OF PALO ALTO
NOTICE INVITING SEALED PROPOSALS

Proposals - Bids shall be in accordance with the following instructions to receive consideration.

- A. Bids shall be made upon the attached bidders proposal form with all items properly filled out; the signature of each person signing shall be in longhand. The completed form shall be without interlineations, alterations, or erasures.
- B. Bids shall not contain any modification of the work to be done. Alternative proposals will not be considered unless called for. No oral, telegraphic, or telephonic proposals or modifications will be considered.
- C. With each bid, the bidder shall furnish a statement of his financial responsibility and experience.
- D. Should any bidder contemplate subcontracting any part of the work covered by these specifications, he shall submit with bid, a description of the work to be done under such subcontracts together with the name of the proposed subcontractors who shall perform each part of the work. No other subcontract shall be made by the Contractor except as authorized by law.
- E. All bids shall be accompanied by either cash, a certificate of deposit or certified check or draft, of or on some responsible bank in the United States, in favor of and payable at sight to the City of Palo Alto, in an amount not less than ten per cent (10%) of the aggregate amount of the bid. If the bidder to whom the contract is awarded shall, for fifteen (15) days after posting of such contract, fail or neglect to enter into the contract and file the required bonds, the City Treasurer shall draw the money due on such certificate of deposit or check or draft and pay the same or any cash deposited into the Treasury, and under no circumstances shall it be returned to the defaulting bidder. In lieu of the foregoing, any bid may be accompanied by a surety bond in said amount furnished by a surety authorized to do a surety business in the State of California, guaranteeing that said bidder will enter into the contract and file the required bonds within said period. All checks or bonds will be returned to the respective bidders upon the execution of the contract with requisite bonds and insurance from the successful bidder. With the approval of the City Manager, prospective bidders may file annual surety bonds covering all bids made during a calendar year.
- F. Before submitting a bid, bidders shall carefully examine the plans, read the specifications or special provisions and other contract documents, shall visit the site of the work, shall fully inform themselves as to all existing conditions and limitations, and shall include in the bid a sum to cover the cost of all items included in the contract.

- G. Sealed proposals shall be identified on the outside of the envelope bearing the title of the work and the name of the bidder. It is the SOLE responsibility of the bidder to see that his bid is received in proper time. Any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened.

Bonds - The faithful performance of the contract including the guarantee required by the specifications of this Notice Inviting Sealed Proposals shall be secured by an undertaking in the amount of 100 percent of the amount so bid with sureties satisfactory to the City Council of said City.

Insurance - The successful bidder must provide a Certificate of Insurance in a form acceptable to the City's Risk Manager prior to commencing any work in accordance with the attached "City of Palo Alto Insurance Requirements for Contractors" form. Successful bidder shall also execute the Hold Harmless Clause on form furnished by City.

Withdrawal of bid - Any bidder may withdraw his bid, either personally or by telegraphic or written request, at any time prior to the scheduled closing time for receipt of bids. No bidder may withdraw his bid for a period of sixty (60) days after date set for opening thereof.

Interpretation - If any person contemplating submitting a bid for the proposed contract is in doubt as to the bidding procedures, he should contact the director of Purchasing Services. If he is in doubt as to the true meaning of any part of the plans, specifications, or other proposed contract documents, or finds discrepancies in, or omissions from the drawings or specifications, he should submit to the Project Manager a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the proposed documents will be made only by addendum duly issued and a copy of such addendum will be mailed or delivered to each person receiving a set of documents. The Council will not be responsible for any other explanations or interpretations of the proposed documents.

Bidders Interested in More Than One Bid - No person, firm or corporation shall be allowed to make or file or be interested in more than one bid for the same work unless alternative bids are called for. A person, firm, or corporation who has submitted a proposal to a bidder or who has quoted price on materials to a bidder is not thereby disqualified from submitting a subproposal or quoting process to other bidders.

Addendum - Any addendum issued during the time of bidding shall be covered in the bid and shall be made a part of the contract.

Opening of Bid - All bids, irrespective of any irregularities or informalities, will be opened and publicly read aloud at the time and place as set forth in this Notice.

In cases where only one bid is received for a contract, such bid will be publicly opened and read aloud. Bidders, or their representatives and other interested persons may be present at the opening and reading of bids.

The public reading of each bid will include at least the following:

1. Name of bidder.
2. The total amount bid.

If any bid or security furnished therewith is irregular or informal, the facts will be noted and publicly announced at the time or reading thereof.

Availability of Additional Data Regarding Bid Opening - Immediately following the bid opening, the bids will be reviewed and tabulated to determine who is the lowest single responsible bidder. Additional data, therefore, will be made available to those requesting same, only after this staff work is completed.

Award or Rejection of Bids - The contract will be awarded to the lowest responsible bidder; provided, however, the City Council may reject any and all bids if deemed excessive, and readvertise for bids or provide for the work to be done by the City. The City also reserves the right to waive any informality or irregularity in any bid and award bids on an item by item basis. The provisions of Public Contract Code §5100 et seq entitled "Relief to Bidders" are applicable to this, and those provisions are incorporated by reference and made a part hereof.

Disputes - In case of discrepancy between words and figures, the words shall prevail; provided, however, that the City Council reserves the right to construe any bid according to its true intent where it contains a patent mistake. All claims by Contractor regarding extra work, charges, delay or other disputes arising out of this Agreement must be submitted to City in writing within ten (10) working days after the claim arose, describing in detail the nature and value of the disputed work or claim.

Non-Discrimination & Affirmative Action

- A. Contractors and subcontractors will be required to comply with all procedures set forth in the Palo Alto Municipal Code regarding non-discrimination and affirmative action in employment and will be subject to all penalties provided for therein in the event of violation. Affirmative action guidelines and compliance report forms are available at the office of the Director of Purchasing.
- B. The successful bidder must complete for approval a Compliance Report for the Affirmative Action Minority Employment Program (M.E.P.). Subcontractors for the successful bidder shall be required to submit for approval, Compliance Reports within five (5) calendar days after bid opening, and all subcontractors must be qualified prior to award of the contract.

C. In accordance with Palo Alto Municipal Code Section 2.30.092 any contractor who shall be found in violation of the non-discrimination provisions of the State of California Fair Employment Practices Act or similar provisions of federal law or executive order in the performance of any contract with the City, thereby shall be found in material breach of such contract and thereupon the City shall have power to cancel or suspend the contract, in whole or in part, or to deduct from the amount payable to such contractor the sum of twenty-five dollars (\$25.00) for each person for each calendar day during which such person was discriminated against, as damages for said breach of contract, or both. Only a finding of the State of California Fair Employment Practices Commission or the equivalent federal agency or officer shall constitute evidence of a violation of contract under this section.

D. In accordance with Palo Alto Municipal Code Section 2.30.093 any contractor who shall be found by the City Manager to be in violation of his agreement to pursue an affirmative course of action or in violation of any provision of the affirmative action guidelines pertaining to his contract shall be found in material breach of such contract and thereupon the city shall have power to cancel or suspend the contract, in whole or in part, or to deduct from the amount payable to such contractor the sum of two hundred fifty dollars for each calendar day during which the contractor is found to have been in noncompliance, as damages for said breach of contract or both.

Payments - Payments will be made in cash or warrant by City to the Contractor on monthly progress estimates with ten (10) percent retention.

Standard Specifications & Special Provision

Reference is hereby made to the special provisions for further details, which special provisions, this notice, and if applicable, the City's Standard Specifications dated 1972 as amended, shall be considered a part of any contract made pursuant hereto.

Special provisions and other contract documents are available at the office of the Director of Purchasing Services without charge.

Copies of the City's Standard Specifications are available for purchase at the Cashier's Office, 1st floor, Civic Center.

Prevailing Wage Rates

This project involves City funds, therefore the prevailing wage requirements of the Labor Code do not apply.

Michael T. Kelly
Director of Purchasing Services

CITY OF PALO ALTO

BIDDERS PROPOSAL

To the City Council
City of Palo Alto
Palo Alto, CA

In response to the Notice Inviting Bids, the undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein, that this proposal is made without collusion with any other person, firm, or corporation; that he has carefully examined the location of the proposed work and the plans and specifications herein referred to; and he proposes and agrees, if this proposal is accepted, that he will contract with the City of Palo Alto, to provide all necessary tools and apparatus and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed and at the prices stated in the following proposal:

Provide all of the services as specified in the contractor specification attached as Exhibit A for the sum of \$_____.

Work will be completed on the same days as the projects are conducted.

Enclosed find _____ which is given as security that the undersigned will enter into the contract. If awarded the contract, the undersigned hereby agrees to sign said contract and furnish a Performance Bond in the amount of 100% of the contract, and a Certificate of Insurance (on City forms) in accordance with the City's Risk Manager's requirements. Failure to comply may cause this contract to be null and void.

Contractor's License No. _____ Classification _____

Liquidated damages of _____ per day will be imposed on the contractor for each day required project is delayed beyond the delivery schedule as shown in the bid. The damages of _____ per day will be deducted from the contractor's invoice prior to payment.

Following is a list of plant and equipment owned by the bidder, and which is definitely available for use on the proposed work as required.

<u>Quantity</u>	<u>Name, Type and Capacity</u>	<u>Condition</u>	<u>Location</u>

(Use extra sheets if necessary)

SUBCONTRACTORS

The following is the name and location of the mill, shop or office of each subcontractor who will perform work or labor or render service to the undersigned in or about the construction of the work or improvement contemplated by this proposal and the portion of the work which will be done by each subcontractor.

<u>Name</u>	<u>Location</u>	<u>Work</u>

EXPERIENCE AND FINANCIAL QUALIFICATIONS

The following statements as to experience and financial qualifications of the bidder as submitted in conjunction with the proposal, as a part thereof, and the truthfulness and accuracy of the information is guaranteed by the bidder.

The bidder has been engaged in the contracting business, under the present business name for _____ years. Experience in works of a nature similar to that covered in the proposal extends over a period of _____ years.

The bidder, as a contractor, has never failed to satisfactorily perform a contract awarded to him, except as follows: (Name any and all exceptions and reasons therefor.)

The following contracts have been satisfactorily completed in the last three (3) years for the person, firm or authority indicated, and to whom reference is made.

(Name five (5) contracts)

<u>Type of Work</u>	<u>Contract Amount</u>	<u>Location and for Whom Performed</u>

EXHIBIT A

**CONTRACTOR SPECIFICATIONS FOR THE CITY OF PALO ALTO
HOUSEHOLD HAZARDOUS WASTE DISPOSAL PROJECT**

The contractor shall:

1. Receive household hazardous wastes (excluding compressed gas cylinders, radioactive materials and explosives) from Palo Alto residents and employees only, for four five-hour periods during the 12-month period beginning July 1, 1984 at a location provided by the City of Palo Alto.

Note: The first two project days will be October 27 and November 3, 1984. The second two project days will be near the month of June, 1985.

2. Identify, categorize, package, label, mark, manifest, transport, and dispose of the collected hazardous wastes to the satisfaction and specifications of the California Department of Health Services and the United States Department of Transportation and any other pertinent federal, state and local codes or regulations.
3. Provide personnel trained to the satisfaction of the California Department of Health Services for the purposes stated in (1) and (2) above.
4. Carry out all interactions with the California Department of Health Services in satisfying that department's requirements for permits, variances, agreements or registrations for the purposes of this project only. City of Palo Alto staff will provide support to the contractor for this purpose.
5. Provide liability protection as additionally insured to the satisfaction of the California Department of Health Services and the City of Palo Alto for activities carried out under this project only. (Refer to Exhibit A.)
6. Provide all necessary materials.

NOTE: Funds cannot be expended beyond the sum of \$14,000.

In addition to the contractor providing the above scope of service as a minimum, the following selection criteria will be used in evaluating the bid proposals:

- A. **Personnel:** 1) At least one trained hazardous materials specialist with the equivalent of a Bachelor's degree in chemistry and three years experience in hazardous wastes handling and packaging should be on site at all times.
2) At least six trained hazardous waste technicians should be provided to handle, package, label, mark and manifest the wastes received.
- B. **Manifesting:** The proposal will be evaluated for the ability of the contractor to efficiently and adequately manifest the wastes to the satisfaction of the California Department of Health Services, the United States Department of Transportation and the disposal firm receiving the wastes for disposal.

C. **Prior Experience:** The bidder should have prior experience in "lab-packing" hazardous wastes in small quantities and of a wide variety as from laboratories or households.

D. **Location:** The bidder should be located in the Northern California area.

E. **Cost:** Total dollars estimated for expenditure will be considered in the evaluation.

**CITY OF PALO ALTO
BIDDERS PROPOSAL**

Bidder is a:

_____ California Corporation
 _____ Corporation under the laws of the State of _____
 with head offices located at _____
 and offices in California at _____
 _____ Sole Proprietorship
 _____ Partnership (List names of partners; state which partner or partners
 are manager partner(s) _____

Other (Specify, using separate sheet if necessary) _____

 Name of Bidder

Dated _____ 19__

By _____
 Signature of Officer

 Printed Name of Officer

 Title

 Address

 Telephone Number

ACKNOWLEDGEMENT OF ADDENDUM(S)

NOTE: Failure to execute the following may be considered as an irregularity in the bid. Receipt of the following addendum(s) issued during the time of bidding is acknowledged, and the information contained therein has been considered in the preparation of this bid.

Addendum No. (None), (1), (2), (3), (4), (5)

(Check appropriate space)

**City of Palo Alto
Insurance Requirements
for Contractors**

CONTRACTOR			
CONTRACT CO-ORDINATOR		PETER BURNS	
CONTRACT DESCRIPTION		Hazard Waste Disposal	
GENERAL TERMS AND INSTRUCTIONS			
<p>CONTRACTORS TO THE CITY OF PALO ALTO, AT THEIR SOLE EXPENSE, SHALL OBTAIN AND MAINTAIN INSURANCE FOR THE TERM OF THE CONTRACT. CONTRACTORS WILL BE REQUIRED TO PROVIDE A CERTIFICATE EVIDENCING THE INSURANCE AND NAMING THE CITY AS AN ADDITIONAL INSURED.</p> <p>THE CERTIFICATE OF INSURANCE MUST BE COMPLETED AND EXECUTED BY AN AUTHORIZED REPRESENTATIVE OF THE COMPANY PROVIDING INSURANCE, FILED WITH THE CITY, AND APPROVED BY THE CITY'S RISK MANAGER BEFORE THE CONTRACT WILL BE CONSIDERED COMPLETE AS RESPECTS INSURANCE.</p> <p>THIS INSTRUCTION SHEET SHOULD BE GIVEN TO YOUR INSURANCE AGENT/BROKER WITH THE REQUIRED CERTIFICATE FORM.</p> <p>RETURN THE COMPLETED CERTIFICATE TO THE CITY OF PALO ALTO PURCHASING DEPARTMENT. THE INSURANCE COVERAGES CHECKED BELOW ARE REQUIRED FOR THIS CONTRACT.</p>			
SHORT FORM AGREEMENT			
TYPE OF COVERAGE	MINIMUM LIMITS OF LIABILITY		
	STATUTORY	EXCESS RECURRING	AGGREGATE
<input checked="" type="checkbox"/> WORKER'S COMPENSATION			
<input checked="" type="checkbox"/> COMPREHENSIVE GENERAL LIABILITY INCLUDING: • PERSONAL INJURY • BROAD FORM PROPERTY DAMAGE • BLANKET CONTRACTUAL • FIRE LEGAL LIABILITY	BODILY INJURY PROPERTY DAMAGE	\$50,000 \$50,000	\$20,000 \$20,000
<input checked="" type="checkbox"/> COMPREHENSIVE AUTOMOBILE LIABILITY INCLUDING: • OWNED • HIRED • NON-OWNED	BODILY INJURY EACH PERSON BODILY INJURY Each Occurrence PROPERTY DAMAGE BODILY INJURY & PROPERTY DAMAGE COMBINED	\$50,000 \$50,000 \$50,000	
<input checked="" type="checkbox"/> PROFESSIONAL LIABILITY INCLUDING: • ERRORS AND OMISSIONS • MALPRACTICE (IF APPLICABLE) • NEGLIGENCE PERFORMANCE	ALL DAMAGES		\$50,000
<input checked="" type="checkbox"/> THE CITY OF PALO ALTO IS TO BE NAMED AS AN ADDITIONAL INSURED <input type="checkbox"/> NO INSURANCE CERTIFICATE REQUIRED			
LONG FORM CONTRACT			
TYPE OF COVERAGE	MINIMUM LIMITS OF LIABILITY		
	STATUTORY	EXCESS RECURRING	AGGREGATE
<input type="checkbox"/> WORKER'S COMPENSATION			
<input type="checkbox"/> COMPREHENSIVE GENERAL LIABILITY INCLUDING: • PERSONAL INJURY • BROAD FORM PROPERTY DAMAGE • BLANKET CONTRACTUAL • FIRE LEGAL LIABILITY	BODILY INJURY PROPERTY DAMAGE	\$	\$
<input type="checkbox"/> COMPREHENSIVE AUTOMOBILE LIABILITY INCLUDING: • OWNED • HIRED • NON-OWNED	BODILY INJURY EACH PERSON BODILY INJURY Each Occurrence PROPERTY DAMAGE BODILY INJURY & PROPERTY DAMAGE COMBINED	\$	\$
<input type="checkbox"/> PROFESSIONAL LIABILITY INCLUDING: • ERRORS AND OMISSIONS • MALPRACTICE (IF APPLICABLE) • NEGLIGENCE PERFORMANCE	ALL DAMAGES		\$
<input type="checkbox"/> THE CITY OF PALO ALTO IS TO BE NAMED AS AN ADDITIONAL INSURED <input type="checkbox"/> NO INSURANCE CERTIFICATE REQUIRED			

5/2/89 *[Signature]*
 DATE MANAGER, LOSS CONTROL

Appendix I

Publicity examples

Source: Albuquerque Environmental Health Department, 1986. Albuquerque Hazardous Waste Collection Project. Albuquerque, NM.

Source: Purin, G., et.al., 1984. Household Hazardous Waste: Solving the Disposal Dilemma. Sacramento, CA: Golden Empire Health Planning Center.



H₂HWG* PROJECT

Limited Time Only!

When:

October 18-22, 1985 - 9 a.m. to 6 p.m.

Where:

Rinchem Company, Inc.
6133 Edith N.E. (1 mile north of Montano)

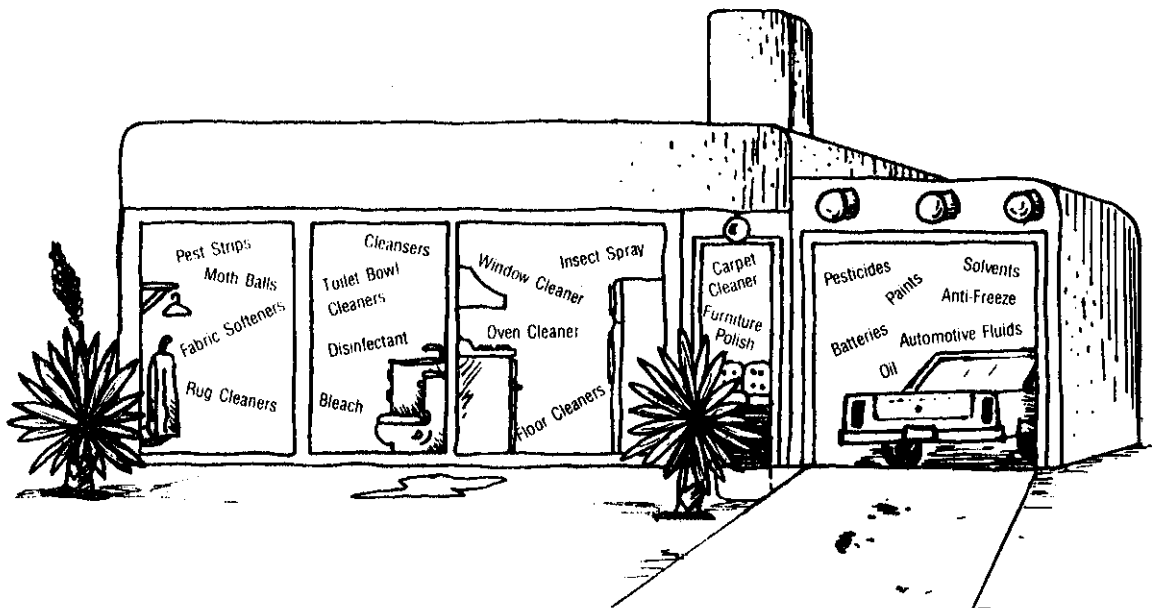
**FREE DISPOSAL OF
HOUSEHOLD HAZARDOUS WASTE**

Unsafe use and disposal of hazardous household products such as solvents, paints, and pesticides can injure humans and damage the environment. Now is the time to rid your house of old and unwanted hazardous products. Use this free collection project and keep your environment safe.

Information:

call Albuquerque Environmental Health & Energy Department

766-7434



*Household Hazardous Waste Collection

Logo Courtesy of Golden Empire Health Planning Center, Sacramento, California

**The League of Women Voters of Redlands and
San Bernardino County Environmental Health Services**
co-sponsors



TOXICS ROUND UP

**Household Hazardous
Wastes Collection**

Saturday, March 24

9 am - 3 pm

Old City Yard

Texas and Oriental Streets,

Redlands

At no charge, we will accept the following substances for collection:

Household Cleaners
Auto and Furniture Polish
Paints and Paint Thinner
Pesticides
Fertilizers
Chemical Drain Cleaners
Weed Killers
Wood Preservatives

*No Motor Oil or Anti-Freeze
(Contact your local Service Station)*

This project partially funded by a grant from the League of Women Voters Education Fund.

A chemist and other safety and technical
assistance will be available on site during the
Toxics Round Up.

For more information: SB County EHS 383-3498