

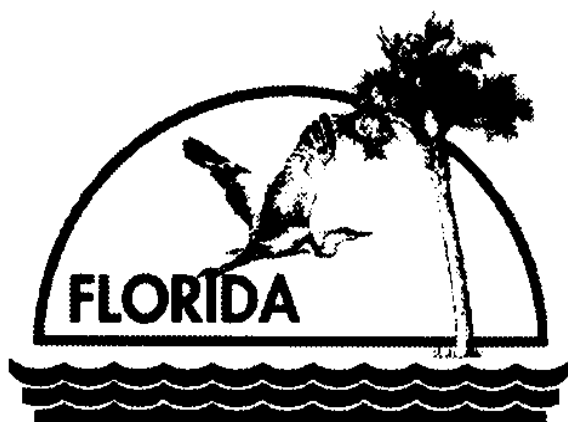
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Reporting Agency: Department of Environmental Protection
Recipient Agency: Governor and Florida Legislature
Subject: Hazardous Waste Management Needs Assessment Report
Report Due Date: Annual - January 1, 2000
Statutory Requirement: Section 403.7226(2), F.S.
Abstract:  <p>Section 403.7226(2), Florida Statutes, requires the Department to identify the short and long-term needs for hazardous waste facilities and services to properly manage hazardous waste generated in Florida. It also requires that an annual report be submitted to the Governor and Legislature giving an assessment of the State's hazardous waste management needs. This assessment is an ongoing process and is updated whenever new information on hazardous waste generation and management becomes available.</p> <p>This Hazardous Waste Management Needs Assessment Report reviews the activities of the State Hazardous Waste Management Programs in 1999. It covers the State Hazardous Waste Management Program's statutory framework; progress in the Local Assessment, Notification and Verification Program for small quantity generators of hazardous waste implemented by counties, Regional Planning Councils and the Department; the status of the Local Hazardous Waste Collection Center Grant Program; the Mercury, Cadmium and Lead Reduction and Management Programs; Florida's Pollution Prevention Program; the Used Oil Management and Recycling Programs; and an update to Florida's Need for Hazardous Waste Management Capacity.</p> <p>Copy: Executive Office of the Governor Office of Planning and Budgeting (3 copies)</p>



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REPORT TO THE GOVERNOR AND LEGISLATURE  
NEEDS ASSESSMENT REPORT  
FOR HAZARDOUS WASTE MANAGEMENT



January, 2000

Florida Department of Environmental Protection  
Division of Waste Management  
Hazardous Waste Management Section



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REPORT TO THE GOVERNOR AND LEGISLATURE  
NEEDS ASSESSMENT REPORT  
FOR HAZARDOUS WASTE MANAGEMENT

January, 2000

## INTRODUCTION

In order to protect Florida's water supply, the Legislature has established local, regional, and state responsibilities for proper hazardous waste management. One of the Department's responsibilities is to estimate the amounts and types of hazardous waste generated by large and small businesses, government facilities, and households and to assess the need for proper collection, storage, treatment, and disposal of these wastes. A report to the Governor and the Legislature on the State's hazardous waste management facility needs is required annually as indicated in Section 403.7226(2), Florida Statutes (F.S.).

This report summarizes the progress of each of the Department's programs that address hazardous waste generation and the need for proper management of these wastes. Included in this year's report is a discussion of the management of mercury, lead and cadmium-containing wastes such as fluorescent lamps and rechargeable batteries that were addressed by the 1993 Legislature. It also reviews the Department's most recent collection and analysis of the 1997 Biennial Hazardous Waste Report data submission to the United States Environmental Protection Agency (EPA) as required by the federal Resource Conservation and Recovery Act (RCRA). To begin this report, however, an overview of the history of Florida's statutory requirements is given.

## OVERVIEW OF FLORIDA'S STATUTORY REQUIREMENTS

The Water Quality Assurance Act of 1983 required the Department of Environmental Protection to coordinate with the Regional Planning Councils (RPCs) and county governments in conducting county and regional hazardous waste management assessments (403.7225, F.S.). The Legislature appropriated 2.16 million dollars for this program. The assessments were phased in

over a three-year period. Work was completed on all the counties' initial assessments on July 31, 1987.

The 1985 Legislature, recognizing the need for the local collection and temporary storage of small quantities of hazardous waste, established the Local Hazardous Waste Collection Center Grant Program (403.7265, F.S.), as a strategy for setting up a local hazardous waste collection center network statewide.

The 1986 Legislature amended Section 403.7234, F.S., and authorized the Department to regulate small quantity generators (SQGs) to ensure proper hazardous waste management in a manner consistent with federal requirements. The counties were given authority to collect fines from any small quantity generator that did not disclose information to the counties as to the types of, quantities of, and management practices of hazardous waste generated. Fines collected are to be used for the annual verification process and for local hazardous and solid waste management programs.

The 1987 Legislature amended Section 403.7265, F.S., to direct the Department to recommend a site for a state multipurpose hazardous waste treatment facility by May 1, 1988. An assessment of the suitability of the storage facility sites selected by the Regional Planning Councils was also required.

The 1988 Legislature initiated new programs for waste elimination and reduction of hazardous waste (403.7223, F.S.); the establishment of used oil recycling centers (403.763, F.S.); and reauthorized the local hazardous waste collection center grant program by providing up to \$100,000 to each grant recipient (403.7265, F.S.).

The 1989 Legislature expanded the use of the 3% tax on the gross receipts of a privately owned hazardous waste facility by the host local government (403.7215, F.S.). It also recognized the designation of the Union County site for constructing and operating a multipurpose hazardous waste facility. In order to establish a centralized and coordinated permitting process for the siting, construction, and operation of a multipurpose hazardous waste facility, the Legislature passed the "Statewide Multipurpose Hazardous Waste Facility Siting Act" (Chapter 89-285, Laws of Florida, codified as Sections 403.78-403.7893, F.S.). In addition, during the 1989 Legislative Session, Senate Concurrent Resolution No. 1146 was passed. The Resolution, in summary, states that there is a need for a comprehensive waste management system including a multipurpose hazardous waste treatment facility; that the Legislature has not and does not intend to enact barriers to the movement of hazardous waste or the siting of hazardous waste facilities for the proper storage, treatment and disposal of hazardous waste; and that the State will work diligently and expeditiously with the private sector toward the siting, construction and operation of such a facility. The 1989 Legislature also amended the strict prohibition on hazardous waste landfills. Untreated hazardous waste is still prohibited from being landfilled in Florida, but if the hazardous waste has undergone treatment, it may be disposed of in a permitted hazardous waste landfill.

The 1990 and 1991 Legislatures again appropriated 1 million dollars to continue the household hazardous waste collection center grant program. The 1991 Legislature also provided for additional uses of the 3% tax levied on the gross receipts of certain hazardous waste facilities (403.7215, F.S.) to strengthen local environmental programs. An amendment was also made to 403.7225, F.S., which authorized counties to impose a small quantity generator notification and verification surcharge (up to \$50.00) on the business or occupational license or license renewal of any firm that is identified as a small quantity generator of hazardous waste.

The 1992 Legislature again appropriated 1 million dollars to continue the Local Hazardous Waste Collection Center Grant Program.

The 1993 Legislature directed the Department to conduct a Hazardous Waste Needs and Capacity Study under 403.7895(5), F.S., to evaluate the current and future need for hazardous waste incineration capacity, including boilers and industrial furnaces burning hazardous waste fuel, in Florida.

In 1993, the Florida Legislature adopted provisions for the environmentally sound management of mercury-containing lamps, such as fluorescent lamps, and mercury-containing devices, such as mercury thermostats and thermometers (403.7186, F.S.). Incineration of such lamps from commercial and institutional sources was prohibited after July 1, 1994, and both incineration and landfill disposal of devices were prohibited after January 1, 1996. Additionally, the Department was directed to develop rules to provide criteria for the permitting of mercury reclamation facilities and to set standards for such facilities and associated collection centers. The Department was further directed to conduct demonstration projects to study the collection and recycling of these mercury-containing materials. The Department was also directed (403.7061, F.S.) to fund a pilot project, to be conducted in a local government jurisdiction served by a waste-to-energy facility, that would include: the design, implementation and evaluation of programs for removing toxic materials from the waste stream prior to incineration; and an evaluation of the effectiveness of the pilot program including analyses of air emissions from the waste-to-energy facility. A letter report on this study was submitted to the Governor and the Legislature on December 1, 1995 and additional information was submitted on July 22, 1998.

In addition, the 1993 Legislature enacted new requirements for consumers, manufacturers, and sellers of batteries (403.7192, F.S.). The principal provisions were aimed at reducing mercury and cadmium in municipal solid waste (MSW). They included mercury content limitations on household alkaline-manganese and zinc-carbon batteries sold in Florida as verified through annual mercury content certifications from manufacturers and importers of those types of batteries, a sales ban for mercuric-oxide button cell batteries, and mandatory unit management programs sponsored by marketers for the collection and proper disposal of larger mercuric-oxide batteries sold or distributed in Florida. Other provisions included design, labeling, and unit management (collection) program requirements for nickel-cadmium and non-vehicular sealed lead acid rechargeable batteries and/or the products containing these batteries which are sold in Florida.

The 1993 Legislature amended 403.7265, F.S., giving the Department authority to use grant funds to assist local governments in carrying out the responsibilities of the SQG Assessment, Notification and Verification Program and to promote the continued development of the local government hazardous waste management programs.

The 1994 and 1995 Legislature appropriated 2.8 million dollars to continue the Local Hazardous Waste Collection Center Grant Program and to initiate the use of grant funds to assist local governments through the SQG Assessment, Notification and Verification Program Grant and the Expanded Local Hazardous Waste Management Programs Grant.

The 1996, 1997, 1998 and 1999 Legislatures appropriated 600 thousand dollars for each of the following state fiscal years to continue the Local Hazardous Waste Collection Center Grant Program and assist local governments through the SQG Assessment, Notification and Verification Program Grant and the Expanded Local Hazardous Waste Management Grant.

The 1999 Legislature appropriated \$400,000 for research, innovative technologies and equipment and infrastructure development for the reuse, recycling and proper management of lead-containing materials, including cathode ray tubes in TVs and computer monitors (403.71851 and 403.71852, Florida Statutes).

Work conducted under previous Legislative mandates are summarized in the body of the report.

# ASSESSMENT, NOTIFICATION AND VERIFICATION PROGRAM

## BACKGROUND

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Sections 403.7225 and 403.7234, F.S., established the Small Quantity Generator Assessment, Notification, and Verification Program (SQG Program). A small quantity generator (SQG) is defined in the federal regulations (40 CFR Part 260.10) as a generator that produces less than 1,000 kilograms (or approximately 2,200 pounds or about 275 gallons) of hazardous waste in any calendar month. Since the end of 1986, SQGs are in one of two hazardous waste generation categories: 100 - 1,000 kilograms (220 - 2,200 pounds) per month, or 100 kilograms or less of hazardous waste per month. The latter category is referred to as a conditionally exempt SQG (or CESQG).

The goals of the SQG Program are for local governments to inform SQGs of their legal responsibilities in properly managing their hazardous wastes, to protect public health and the environment (e.g., drinking water resources), and to update the original information submitted to the Department in each county's hazardous waste assessment as required in 403.7225, F.S. A county may have additional uses for this program. Knowledge of hazardous materials and wastes stored at a business location can be useful for county departments with responsibility for comprehensive planning, emergency management, fire and police protection, health care, and water quality management.

## TYPES OF FUNDING

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After the initial funding for conducting assessments under the Water Quality Assurance Act had run out, local SQG programs had to develop local funding sources to continue the program. In 1991, the Legislature amended 403.7225, F.S., allowing counties to impose up to a \$50 surcharge on the occupational license fee of a business classified as a SQG. Recognizing the need for increased participation by local governments, the Legislature in 1993 amended Section 403.7265, F.S., giving the Department authority to use grant funds to assist local governments in carrying out the responsibilities of this program. Available money is used for grants to assist smaller counties temporarily in developing their local SQG Programs while they establish permanent funding sources at the local level. The total amount for this one-time grant is \$30,000 per county.

Additionally, the Legislature established the "Expanded Local Hazardous Waste Management Grant Program" (403.7238, F.S.). The Department was directed to establish a grant program to promote the continued development of local government hazardous waste management programs. The objective of this grant is to assist local governments in developing enhanced local hazardous waste management programs and to help establish local pollution prevention programs. The total amount for this one-time grant is \$50,000 per county. A summary of current and proposed SQG grant projects can be found in Appendix 1.

## LOCAL GOVERNMENT ACTIVITIES

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In fiscal year 1998-99, 57 counties in Florida submitted data to the Department (Appendix 2). Approximately 95,000 small businesses were reported in the county's assessment rolls as potential or active small quantity generators of hazardous waste. These businesses were notified by mail or through renewal of their occupational or business license of their legal waste management responsibilities. They were also provided options to properly manage their wastes. County and Regional Planning Council (R.P.C.) SQG coordinators, through mostly on-site visits, verified approximately 19,500 businesses on the assessment roll. Additional educational and pollution prevention assistance in the form of fact sheets and consultation were provided to small businesses during these site visits.

County and R.P.C. SQG coordinators within each of the DEP District boundaries meet on a quarterly basis. There are currently five regional county/R.P.C. groups. The main purpose of these groups is to foster better communication and cooperation between state, regional and local hazardous waste programs, exchange ideas and share information relative to the SQG Program. A representative from the corresponding District office is present at each meeting.

## ENHANCEMENTS TO THE SQG DATABASE MANAGEMENT SYSTEM

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The database software program used by each County SQG program coordinator has been completely revised and has been distributed to all the county program coordinators. New screens have been added to capture compliance assistance, pollution prevention and county specific efforts during on-site visits. Three orientation-training programs were provided around the state to properly train local coordinators in the use of the new program. Feedback from the counties has been very positive on the software's usefulness in meeting both the statutory requirements and county specific needs of this program. This software update is part of an ongoing effort to improve the quality of data provided to the Department by each county and to make the database program easier and more flexible.

Additionally, a "lite" version of the SQG Database program has been integrated into the Department of Health's Centrax Database System used by local environmental health units in their inspection programs. The version of the program was developed by Department of Health staff at the request of county environmental health units and the DEP as a way to avoid redundant data entry.

## ADDITIONAL PROJECT FUNDED BY EPA GRANTS

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The USEPA Pollution Prevention Incentives for States grant has awarded a grant to the DEP Pollution Prevention Program to partner with the Hazardous Waste Management Section to develop a training program that builds on the knowledge and experience of both programs.

The focus of the training program will be to integrate pollution prevention into the SQG program by developing an introductory training course for field staff conducting the county and regional hazardous waste management program. The goal is to teach county staff how to conduct

multi-media compliance assistance visits to small businesses. Training sessions will emphasize integrating multimedia pollution prevention into the compliance site visits.

#### SUMMARY OF SQG WASTE MANAGEMENT IN FLORIDA

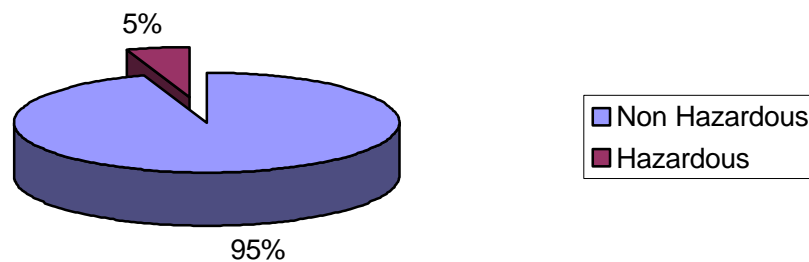
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Based on the 1997 County Business Patterns for Florida, there are approximately 417,522 businesses in Florida. Approximately 95,000 (22.8%) businesses may produce some form of hazardous waste. This estimate was derived from data collected by local governments as part of the SQG Assessment, Notification, and Verification Program.

Based on county reports, just over 19,500 potential generators of hazardous waste have been evaluated for their waste management practices in fiscal year 1998-1999. The vast majority of the evaluations came from on-site visits. Evaluation of county submitted data show that seventy-eight percent of the SQGs that were verified by an on-site visit or a telephone call were classified as conditionally exempt small quantity generators (CESQGs) generating less than 220 pounds of hazardous waste per month. These CESQGs account for 45% of the hazardous waste generated. Fifty-five percent of the hazardous waste generated are by the remaining regulated SQGs (220-2,200 lb./month).

These businesses reported generating 165,454 tons of both hazardous and non-hazardous waste. Approximately 95% of all waste generated is considered non-hazardous waste and is exempt from regulation when managed separately as specified by federal and state law (i.e. used oil, car batteries). The remaining 5% of the waste reported are considered hazardous waste (Figure 1).

Figure 1 Hazardous and Non-Hazardous Waste Reported for 1998-99



Table's 1 and 2 show how small quantity generators of hazardous and non-hazardous waste reported managing their waste. These tables represent only businesses that were verified through on-site visits. The vast majority of non-hazardous wastes reported in Table 1 are from exempted waste such as used oil that is recycled and lead acid batteries that are reclaimed. Upon further analysis of Table 2, as much as 17% of the hazardous waste reported may have been improperly stored or disposed and was flagged for further review by the county.

Table 1: Non-Hazardous Waste Disposal Summary for Verified<sup>1</sup> Facilities generating less than 26,400 Pounds

Disposal Method	Amount (lbs.)	%	No. Facilities
On-site Fuel Burn/Blend	5,614	0.0	7
On-site Open Burn	680	0.0	5
On-site Land Disposal	5,505	0.0	2
On-site Disposal To Sewer	259,634	0.1	96
On-site Disposal To Surface Water	84	0.0	2
On-site Disposal To Septic Tank	601	0.0	2
On-site Recycle/Reuse	171,206,810	54.9	3,287
On-site Wastewater Treatment To Evaporation	10,509	0.0	3
On-site Wastewater Treated To Other Disposal	50,535	0.0	3
Off-site Exempt, Commercial Laundry (Rags)	525,339	0.2	1,167
Off-site Exempt, Universal Waste (Lamp, Etc)	14,783	0.0	12
Off-site Exempt Recycle (Battery, Etc)	5,665,382	1.8	475
Off-site Exempt, Used Oil Recycling	127,521,900	40.7	4,532
Off-site, Hazardous Waste Management	2,223,180	0.7	352
Off-site, CESQG HW Collection Center	10,385	0.0	42
Off-site, Questionable HW Mgt	547	0.0	6
Off-site Solid Waste Mgt., Solid Waste Incinerator (WTE)	78,028	0.0	85
Off-site Solid Waste Mgt., Solid Waste Lined Landfill	165,124	0.1	181
<b>Non-Hazardous Waste Disposal Total</b>	<b>307,744,640</b>		

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<sup>1</sup> Verified means businesses that received an on-site visit by the county to verify their waste management practices.

Table 2: Hazardous Waste Disposal Summary for Verified<sup>1</sup> Facilities generating less than 26,400 Pounds

Disposal Method	Amount (lbs.)	%	No. facilities	Amount (lbs.)	%	No. facilities
				Questionable Management Practices		
On-site Evaporation Only	24,763	0.1	24	23,177	1.2	20
On-site Fuel Burn/Blend	1,231	0.0	7	88	0.0	1
On-site Open Burn	5,821	0.0	6	5,821	0.3	6
On-site Land Disposal	14,442	0.1	9	13,684	0.7	6
On-site Disposal To Sewer	133,259	0.8	60	36,681	1.9	15
On-site Disposal To Surface Water	1,387	0.0	5	1,387	0.1	5
On-site Disposal To Septic Tank	15,428	0.1	12	15,193	0.8	10
On-site Other	33,148	0.2	28	30,814	1.6	22
On-site Permitted Hazardous Waste Treatment	12,003	0.1	6	*	*	*
On-site Recycle/Reuse	491,942	2.8	213	34,749	1.8	34
On-site Wastewater Treatment To Evaporation	15,970	0.1	65	11,526	0.6	46
On-site Wastewater Treated Other Disposal	42,735	0.2	20	330	0.0	2
On-site Wastewater Treated To Sewer	1,273	0.0	3	*	*	*
Off-site Exempt, Commercial Laundry (Rags)	106,236	0.6	95	36,174	1.9	63
Off-site Exempt, Universal Waste (Lamp, Etc)	348	0.0	2	228	0.0	1
Off-site Exempt Recycle (Battery, Etc)	26,138	0.1	12	11	0.0	2
Off-site Exempt, Used Oil Recycling	1,535,435	8.6	410	1,404,452	72.4	230
Off-site, Hazardous Waste Management	8,449,982	47.6	3,996	103,007	5.3	63
Off-site CESQG HW Collection Center	4,444	0.0	27	1,922	0.1	8
Off-site Questionable HW Mgt	100,414	0.6	77	99,412	5.1	68
Off-site, Hazardous Waste Recycling	228,681	1.3	255	22,529	1.2	22
Off-site Solid Waste Mgt., Solid Waste Incinerator (WTE)	46,255	0.3	377	125	0.0	37
Off-site Solid Waste Mgt., Solid Waste Lined Landfill	102,847	0.6	255	68,159	3.5	129
<b>Hazardous Waste Disposal Total</b>	<b>11,394,182</b>			<b>1,909,469</b>		

A complete summary of waste generation and disposal by small quantity generators for 1998-1999 reporting year can be found in Appendix 3.

<sup>1</sup> Verified means businesses that received an on-site visit by the county to verify their waste management practices.

# LOCAL HAZARDOUS WASTE COLLECTION CENTER GRANT PROGRAM

## BACKGROUND

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The Local Hazardous Waste Collection Center Grant Program was established in 1985 to encourage the development of a statewide network of local hazardous waste collection centers. The Legislature initially appropriated \$500,000 to establish local or regional hazardous waste collection centers in Florida. These facilities are intended to provide free collections of non-regulated hazardous waste from households and to provide short-term storage of hazardous waste generated by very small businesses. Also, the public awareness component of a collection not only helps citizens to better understand and manage their household hazardous waste (HHW), but also may help them to explore ways to reduce the volume they generate.

Generally, the level of service and technical expertise at permanent collection centers has tended to increase each year the facility is in operation. Centers are being enlarged and upgraded with equipment such as paint can crushers, aerosol can puncturing/draining devices, and antifreeze recycling machines. More counties are hiring chemists to staff the facilities which are open 5-6 days per week and are establishing transfer facilities, open 3-5 days per week for collections. As on-site chemists are able to sort, bulk, or pack the wastes into drums and sub-contract out various waste streams such as used motor oil or lead-acid batteries, the cost of operation has decreased.

Recycling is an important component of operation at collection centers. Several programs have “swap shops” where reusable products such as aerosols, polishes, waxes, paints, lawn care and pool products are given away. Antifreeze is recycled and reused in county vehicles. One county sells old car batteries collected at the center to a recycler for annual revenues of \$10,000. County Departments also use automotive, lawn care and paint products when possible.

Paint, the most prolific waste stream collected, is being recycled in a variety of ways. Most of the oil-based products are bulked and shipped off-site to be used for fuel blending. One center blends latex paint and has given as much as 2,000 gallons back to the community within a month. Another mixes the latex it cannot give away with cement to make “paintcrete” in the form of containment slabs, sidewalks, and driveways. Six counties send their paint to three different Florida paint companies where the paint is mixed, re-manufactured and packaged as a post-consumer product containing as much as 95% recycled paint.

Unique Activities and Innovative Projects funded from grants have included establishing the following: mobile collection units in several counties; pilot collections for end-of-life electronic equipment and for banned and restricted pesticides; and collection and recycling programs for fluorescent lamps, freon, used motor oil and oil filters. A home fuel oil restoration/pumping program was established to manage the numerous abandoned and potentially leaking home fuel

oil tanks that were no longer necessary because of conversion to electric or natural gas home heating. A plan was implemented to reuse old latex paint by substituting it for water when mixing concrete, producing “paintcrete” slabs that were used in building containment areas at solid waste facilities. The grant has funded several public awareness and educational programs promoting both the proper management of HHW and the reduction of hazardous waste generation. Newsletters, brochures and bilingual public awareness pamphlets have been developed and distributed. Local programs have also coordinated efforts with the Florida Poison Control Center and the local public school system in an effort to educate children.

In an effort to divert heavy metals from the municipal waste stream, fluorescent lights and other mercury-containing devices are being collected for proper management. Several counties have expressed interest in conducting pilot programs to collect and demanufacture televisions, computers and other electronics in order to recycle lead, mercury and their other components.

Nine Florida counties (Martin, Lake, Monroe, Marion, Leon, Volusia, Polk, Okaloosa and Broward) are complimenting their permanent collection center operation and periodic Amnesty Days-type collection events with mobile unit collections. The vehicles being used are trucks, large vans or ambulances that have been customized for the safe collection and transportation of HHW. In addition to providing HHW collections at convenient locations, the vehicles’ eye-catching side murals and lettering provide advertising for county HHW management programs.

#### TYPES OF FUNDING

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- **Hazardous Waste Collection Center Grant**  
Up to \$100,000 per county for constructing one or more safe, secure operational hazardous waste collection centers.
- **Cooperative Collection Center Arrangement Grant**  
Up to \$35,000 per grant to reimburse 75% (with a \$25,000 limit) of a smaller county’s collection event. The host County, experienced in hazardous waste collections, is reimbursed up to \$10,000 for assisting the neighboring county in holding its collection.
- **Unique or Innovative Project Grant**  
Up to \$50,000 per grant with the county providing a 100% match. Funding is only available to counties that are operating permanent hazardous waste collection centers and is in addition to Hazardous Waste Collection Center Grants and Cooperative Collection Center Arrangement Grants.
- **Grants to reimburse expenses associated with local hazardous waste management**  
Available to counties that has established operational permanent facilities under the Hazardous Waste Collection Center Grant but have received funding less than their \$100,000 limit.

## REQUIREMENTS FOR THE HAZARDOUS WASTE COLLECTION CENTER GRANT

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- Contracting with a licensed, insured private hazardous waste management company that will be responsible for collecting hazardous waste and assuring the delivery of that waste to permitted recycling, storage, treatment or disposal facilities.
- Guaranteeing operation of the collection center for two years after the facility is constructed, including at least two days per year when HHW will be accepted from private citizens (non-business) at no charge. These “free collection days” will be well advertised to encourage private citizen participation.
- Offering at least two advertised collections per year when conditionally exempt small quantity generators can bring their hazardous waste to the collection center in order to obtain a reduced fee for proper management of the waste at permitted facilities.
- Working with a hazardous waste management company to establish expanded collection route services such as a “milk run” pickup service for small quantity generators of hazardous waste.

## HISTORY AND AWARDS

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- 1986            The Legislature appropriated \$500,000 to establish local or regional hazardous waste collection centers in Florida. The grant limit per county for capital outlay expenses was \$50,000. In 1987, the following 7 counties took advantage of this opportunity to establish one facility in each county: Brevard, Citrus, Escambia, Indian River, Lake, Marion, and Volusia.
- 1988            The Legislature reauthorized the Hazardous Waste Collection Center Grant Program and appropriated \$1,000,000 funding. The grant limit per county, again primarily for capital outlay for collection center construction, was raised to \$100,000. Requests for funding exceeded the appropriation and awards were made to the following 11 counties: Alachua, Broward, Charlotte, Collier, Highlands, Hillsborough, Monroe, Orange, Palm Beach, Sarasota, and Seminole. Several of these counties have established multiple collection centers.
- 1989            The Legislature again appropriated \$1,000,000 for the Grant Program with the limit remaining at \$100,000 per county. Awards for funding were made to the following 9 counties: Clay, Dade, DeSoto, Duval, Lee, Leon, Martin, Pasco, and St. Lucie.
- 1990            The \$1,000,000 appropriation was used to award grants of \$100,000 each to Hamilton, Manatee, Osceola, Pinellas, Putnam, St. Johns, and Suwannee Counties.
- 1991            The Legislature again appropriated funding for the Grant Program. Awards of \$100,000 each were made to the following 6 counties: Hardee, Hendry, Hernando, Madison, Okaloosa, and Polk. The Grant Program was amended to include the Cooperative Collection Center Arrangement Grant to provide some financial incentive for a county with a permanent collection center to assist a smaller county

in holding a State-subsidized collection event. Eleven counties were awarded these cooperative grants.

- 1992 Funding from this appropriation was used to establish a local hazardous waste collection center in Jefferson County and upgrade permanent facilities in several other counties.
- 1993 Three counties: Bradford, Okeechobee, and Taylor received grants for permanent collection center construction. The legislature also provided an additional funding opportunity from the appropriation for the Unique or Innovative Project Grant. This grant is intended for programs or activities that are designed to decrease the generation of household and conditionally exempt small quantity generator hazardous waste and increase the proper management of such wastes.
- 1994 The appropriation was used to fund grants for permanent collection center construction in Flagler, Levy, and Liberty counties. Ten counties were awarded funding for Unique or Innovative Projects and funding was provided for collections in 14 counties under the Cooperative Collection Center Arrangement Grant.
- 1995 Franklin and Gadsden Counties received grants for permanent collection center construction. Eight grants provided funding for Unique or Innovative Projects and 13 counties held collection events under the Cooperative Collection Center Arrangement Grants. Four counties received grants to reimburse expenses associated with local hazardous waste management.
- 1996-97 The appropriation was used for 14 grants each year to fund both Cooperative Collection Center Arrangements and Unique or Innovative Projects.
- 1998 Fourteen smaller counties received collections funded in part from Cooperative Collection Center Arrangement Grants and three counties were recipients of grants for Unique or Innovative Projects.
- 1999 It is anticipated that the current appropriation for state fiscal year 1999-2000 will be used to fund 16 to 18 grants. Unique or Innovative Projects include establishing a safety flare management program, clean marina program and a collection of end-of-life electronic equipment that will either be refurbished or demanufactured.

# THE COLLECTION AND MANAGEMENT OF BATTERIES, MERCURY-CONTAINING LAMPS AND DEVICES, OTHER WASTE STREAMS CONTAINING HEAVY METALS, AND PESTICIDES

## DIVERSION OF MERCURY, LEAD AND CADMIUM FROM FLORIDA'S MSW

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As part of the Department's 1995 Agency Strategic Plan, a goal of reducing the amount of mercury, lead and cadmium entering Florida's municipal solid waste (MSW) stream by 50 percent was undertaken. Many of the primary waste sources for these heavy metals have been discussed in the previous section and include batteries, mercury-containing devices and lamps, and CRTs. The Department has estimated the amounts of these heavy metals from these discarded materials potentially entering Florida's MSW in 1995 in Appendix 5, and then the estimated disposal amounts that are thought to have occurred in 1996 through 1998.

These reductions or diversion of heavy metals from Florida's MSW are not only the result of collection and recycling programs, but in some cases are primarily the outcome of source reduction activities on the part of the manufacturers as a result of them decreasing the use of these heavy metals in these types of products.

## BATTERIES

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### Dry Cell Battery Mercury Content and Mercuric-Oxide Battery Prohibitions

From October 1993 through October 1997, the Department annually required mercury analyses and content certifications from all known manufacturers and importers of alkaline-manganese and zinc-carbon batteries as required in Section 403.7192, F.S. Based upon the analyses and certifications received by the Department from 1993 through 1997, it appears that most manufacturers, importers and distributors are complying with the statutory mercury ceilings. As a result, the Department had predicted that this battery waste stream would be essentially mercury-free by 2000. However, some declining quantity of mercury is expected in this alkaline-manganese and zinc-carbon battery waste stream through 2008 based upon annual detailed and ongoing studies of discarded batteries in 3 U.S. counties, including Lee County, Florida. This was due to the discovered disposal of significant quantities of older, higher-mercury content alkaline and zinc-carbon batteries long past their predicted lives (i.e. supposedly two years after their manufacture).

Two other significant parts of Florida's battery legislation were the sales and disposal restrictions placed on mercuric-oxide batteries. Effective October 1, 1993, the sale of mercuric-oxide button

cell batteries was prohibited. These batteries were commonly used in hearing aids, cameras and watches. In addition, a sales prohibition was placed on larger mercuric-oxide cells unless the manufacturer or distributor set up a “unit management program” to provide for the collection and proper disposal of these batteries when they were discarded. These two provisions, along with the appearance of acceptable substitute batteries, have led to the virtual disappearance of these batteries from Florida’s municipal solid waste (MSW) stream.

Recently, the single remaining U.S. manufacturer of larger mercuric-oxide cells announced plans to step up the marketing of these batteries to Florida medical facilities in response to some performance shortfalls of alternate battery chemistries (e.g., zinc air). However, since this manufacturer has implemented a unit management program consistent with Florida law and since the DEP continues to work with medical facilities to properly manage mercury-bearing wastes, this is not expected to significantly increase mercury from batteries discarded into MSW or regulated biomedical waste.

#### Rechargeable Dry Cell Batteries

The effective dates of the legislative requirements for nickel-cadmium (ni-cd) and small sealed lead acid (SSLA) rechargeable battery manufacturers and marketers to initiate unit management collection programs have been phased in as a result of the Department’s adoption of the Universal Waste Rule (UWR). The UWR streamlines regulations governing the collection and management of certain widely generated hazardous wastes (now defined as “universal wastes”). Universal wastes include hazardous waste batteries (including ni-cds and SSLAs), thermostats and certain pesticides.

Under Florida’s battery legislation, pilot unit management programs had to be in place for covered rechargeable batteries in Florida by September of 1996. In October of 1997, a report was due to the Department on the results of these pilot programs and on plans to implement permanent unit management programs. In April of 1998, these permanent programs began. Annual reporting of the results of these permanent programs was required, starting in October of 1998 and ending in October of 2000.

The Rechargeable Battery Recycling Corporation (RBRC) is the first organization representing battery manufacturers and marketers. It was established, in part, to set up a pilot unit management program in Florida. The Portable Rechargeable Battery Association (PRBA) and RBRC have cooperated with the Department in recent years to help Florida enact legislation and implement unit management programs for rechargeable batteries. On March 16, 1995, RBRC proposed implementing its National Management Program for ni-cd Batteries in Florida as a pilot. On May 24, 1995, the Department accepted RBRC’s proposal and designated staff to assist in the implementation details. The RBRC program is now permanent in Florida, and internationally,

with reported recycling rates in the 20-25% range through 1998 and a 1999 rate expected to exceed 30%. As of September 1999, there were 1,510 collection sites (including many county household hazardous waste and solid waste facilities) in 64 counties in Florida. Most of these facilities are battery and electronics wholesale and retail outlets.

The Department is working with PRBA to implement a similar industry stewardship program in Florida for SSLAs in the near future. Some battery manufacturers and marketers are initiating or have initiated pilot unit management programs as individual companies rather than as part of an RBRC-type trade group organizational structure. The Department encourages an RBRC-type approach to battery unit management since it appears to improve cost effectiveness especially for smaller manufacturers and marketers. The Department has also received conceptual approval from PRBA to link information on various battery chemistry unit management programs (e.g., ni-cd and SSLA) so that a purchaser can receive information on various unit management programs for all their battery discards from one phone call or contact point.

Passage of the Federal “Mercury-Containing and Rechargeable Battery Management Act”, Public Law 104-142, by the U.S. Congress on May 13, 1996 allowed for the immediate management of rechargeable batteries under the streamlined requirements of the UWR nationwide rather than waiting on individual states to adopt the UWR. Based upon feedback from rechargeable battery industry representatives, this federal law appears to have facilitated the implementation of rechargeable battery unit management programs in Florida and nationwide, since the recycling infrastructure usually involves interstate transportation.

#### MERCURY-CONTAINING LAMPS AND DEVICES

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With the ongoing decline of mercury content in batteries and other products and based on estimates by the DEP, mercury-containing lamps and devices will be the largest source of mercury being discarded into Florida’s municipal solid waste by the year 2000. See Appendix 5 for the estimated amounts of mercury being discarded into Florida’s municipal solid waste stream by product category. Additional information may be found at the FDEP Mercury Waste Management web site at <http://www.dep.state.fl.us/dwm/programs/mercury>.

On May 20, 1998, the Department modified Chapter 62-737, F.A.C., to correlate with EPA’s Universal Waste Rule (UWR), Title 40 of the Code of Federal Regulations, Part 273 (40 CFR 273) as adopted by Florida on September 7, 1995 as Rule 62-730.185, F.A.C. Chapter 62-737, F.A.C., contains standards for mercury reclamation facilities and the handling of mercury-containing lamps and devices at collection centers. Six facilities have been granted permits under this Chapter. Based on throughput capacity as listed in their permits, the six permitted facilities have the capability to process every mercury-containing lamp discarded in Florida.

Based upon reports from mercury recovery and reclamation facilities received in 1998, the percentage of lamps processed is estimated to be about 16% for commercial mercury-containing lamps in the State of Florida, down from an estimated 23% in 1997. This is the first year since

tracking began in 1995 that the recycling rate has declined. The reason for the decline in the 1998 recycling rate is not known. The percentage estimated for 1996 was about 25% but was not adjusted to exclude lamps from out-of-state sources since reporting requirements did not require this information. On the basis of new reporting requirements, the post-1996 percentages were adjusted to exclude these out-of-state lamps.

The streamlined regulatory structure of the UWR and Chapter 62-737, F.A.C., has also spawned a product stewardship program funded by mercury thermostat manufacturers. Following a cooperative effort between the DEP and the thermostat manufacturers, the Thermostat Recycling Corporation (TRC) announced in November 1997 the beginning of a reverse distribution (“take back”) program for all brands of mercury thermostats. The TRC is a corporation set up by thermostat manufacturers specifically to collect and recycle mercury thermostats. The program uses the existing new mercury thermostat distribution network of wholesalers and heating, ventilation, and air conditioning (HVAC) contractors to collect thermostats taken out of service. Currently in Florida, there are at least 11 wholesaler companies participating in the TRC program with at least 17 and perhaps as many as 30 collection locations. The cost of this program is built into the cost of the product. The mercury reclaimed from old thermostats is used in the production of new mercury thermostats and other products. Without the streamlined regulatory structure provided by the UWR and Chapter 62-737, F.A.C., the manufacturers would not have been able to set up and fund such a program. The TRC program for mercury thermostats, like the Rechargeable Battery Recycling Corporation (RBRC) program for nickel-cadmium batteries, provides a good working model for other manufacturers who wish to establish product stewardship programs for proper disposal or recycling of their products.

#### RESEARCH AND DEMONSTRATION PROJECTS

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Funds appropriated by the Florida Legislature in Fiscal Year 1998-1999 were used to fund two research and demonstration projects to follow up on research needs relating to mercury-containing devices and other products in Florida’s municipal solid waste that were identified during previous research.

Researchers from the Florida Center for Solid and Hazardous Waste Management continued a previous investigation into the uses of mercury-containing devices and other products in medical facilities and the existing waste management practices for those products when they were no longer useful. Previous research sponsored by the Department had shown medical waste incinerators to be one of the largest sources of mercury air emissions in Florida. This project continued the field-testing of recommended Best Management Practices (BMPs) to ensure the proper management of mercury-containing wastes (e.g., keeping them out of the medical/red bag waste stream) and to reduce the amount of mercury in products and materials used in hospitals by such methods as identifying and purchasing alternative products with less or no mercury. Under this and the 1997-1998 projects, field-testing was conducted at a total of 20 Florida hospitals. Additionally, in cooperation with the Florida Dental Association, researchers, and the Department of Health, the development of BMPs for management of dental amalgam continued.

Upon final approval by the various regulatory agencies involved, these BMPs will be distributed to Florida dentists.

The second project, again continuing previous research, was performed by a joint research team from the Oak Ridge National Laboratory (Tennessee) and the University of Central Florida. Mercury emissions, perhaps as a result of disposed mercury-containing devices and other wastes, from landfill gas and through surfaces of municipal solid waste landfill sites in Orange County were quantified. In addition, mercury emissions from municipal solid waste collection containers (dumpsters), transfer station operations and transport vehicles were characterized. Waste composition studies on the solid waste from these collection containers and the landfill working face were carried out to identify the particular items producing the mercury emissions.

Funds appropriated by the Florida Legislature in future fiscal years are planned to be used to fund additional research and demonstration projects to follow up on research needs identified in the areas of mercury in medical waste, the collection and proper management of mercury-containing devices, and mercury emissions during solid waste collection, transport and landfilling.

#### CATHODE RAY TUBES AND ELECTRONIC EQUIPMENT

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In 1998, the Department began to focus on the proper management of discarded cathode ray tubes (CRTs) from televisions and computer monitors as well as other electronic equipment normally discarded along with CRTs, e.g., computers and computer peripheral equipment like printers and keyboards. CRTs are estimated by the Department to be the second largest source of lead in Florida's MSW, exceeded only by the combined category of wet cell vehicular and small sealed lead acid batteries. Some studies suggest that much of this obsolete equipment is being stored pending the clarification of its regulatory status and the development of recycling or other cost effective waste management options.

Most Florida counties currently accept these product discards at their landfills but estimates of the quantities vary widely. On October 2, 1999 the Department issued its strategy paper for end-of-life management of CRTs and other electronic equipment. The objective is to encourage cost effective reuse and recycling. First, the regulatory framework was specified to streamline electronics reuse and recycling. Second, various public (e.g., counties) and private partners (e.g., Solid Waste Information Exchange (SWIX); TV repair shops; thrift stores) will pilot and evaluate various collection programs. Third, a statewide contract for recycling end-of-life electronics will be developed and will be accessible to all state and other governmental entities. Finally, time limited funding will be provided for research and development of recycling processes and to promote the recycling collection infrastructure. Although much of this funding was specifically appropriated by the 1999 Legislature as part of Senate Bill 1434, additional monies from the Household Hazardous Waste Unique and Innovative Collection Center Grant and the Recycling and Education Grant may be used. It is believed that this approach will accelerate the development of the reuse and recycling infrastructure and phase in county development and funding of sustainable management programs for these products.

## OPERATION CLEANSWEEP

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Operation Cleansweep began in 1996 as a survey of the types and quantities of canceled, suspended and unusable pesticides (CSUP) stored by pesticide users in Florida. Based upon the need to reduce the potential for public health and environmental damage from these stored materials, 5 pilot collections in 4 counties (Alachua, Dade, Hillsborough and Okaloosa) were conducted in 1996 and 1997. A brochure was developed and distributed to potential CSUP generators. Meetings were held before each collection for potential participants in order to survey the wastes they were storing, advertise the collection events with instructions for the safe transportation of the CSUP to the collection sites, and to provide education on best management practices for the future purchase, storage, use and disposal of pesticides. These pilot collections, available free of charge to farmers, golf courses, nurseries, pest control operators and other such generators, was a huge success. Over 25,000 pounds of CSUP, including Chlordane, Zineb, Alachlor, Lead Arsenate, DDT and 2,4-D were collected for proper management at a cost of \$40,000.

Operation Cleansweep, funded jointly by a partnership between the Department and United Agri Products, and directed by the Florida Department of Agriculture & Consumer Services, has been an outstanding example of public-private cooperation. Additional partners include the Florida Department of Community Affairs, Florida Farm Bureau, Florida Fruit & Vegetable Association, Florida Fertilizer & Agrichemical Association and staff from Alachua, Dade, Hillsborough and Okaloosa County Cooperative Extension Service offices and Hazardous Waste Management Departments. Since there has been no funding and hence no collections since the 5 pilots in 1996 and 1997, the need to reduce stored stocks of CSUP remains and a variety of funding scenarios continue to be pursued.

# UPDATE TO FLORIDA'S NEED FOR HAZARDOUS WASTE MANAGEMENT CAPACITY

## EPA CAPACITY ASSURANCE PLANS

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Florida submitted its first Capacity Assurance Plan (CAP) to the EPA on October 17, 1989. All states are required to submit the CAP by the federal Superfund Amendments and Reauthorization Act of 1986 (SARA). The 1989 CAP was followed by a Capacity Assurance Status Report on February 14, 1992.

On May 19, 1994, the Department transmitted to the EPA a completely revised CAP. The source of this CAP was the 1991 Hazardous Waste Biennial Reports received from all large quantity generators (LQGs) and treatment, storage, disposal and recycling (TSDR) facilities handling hazardous waste in Florida. One of the major differences between the 1989 and 1994 CAPs was there was no longer an emphasis on regional agreements to satisfy needed hazardous waste management capacity on a regional basis. Instead, the EPA focused on whether there was enough commercial capacity at the national level to properly treat and dispose of all the hazardous waste requiring off-site management across the country.

The EPA aggregated all of the recurrent waste demand and commercial capacity data from all of the states to come up with national aggregation tables. They show that there is adequate capacity in all categories for recurrent waste demand. On January 15, 1997, the EPA made a final determination that national capacity existed in all hazardous waste management categories and that all states had met the CAP requirements under the federal law of assuring capacity for all hazardous waste being generated.

Of particular interest to the capacity needs study are the estimated national capacities for energy recovery and incineration facilities. Energy recovery facilities provide about 2% of the total capacity projected for 1999. Incineration facilities also provide about 2% of the total projected capacity for 1999. Again, according to the EPA's preliminary determination, there is no shortage of national capacity for hazardous waste demand, from both recurrent and one-time hazardous waste generation, at energy recovery or incineration facilities.

## FLORIDA'S INCINERATION NEEDS AND CAPACITY STUDY

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The 1993 Legislature directed the Department to do a Hazardous Waste Incineration Needs and Capacity Study under 403.7895(5), F.S., to evaluate the current and future need for hazardous waste incineration capacity, including that at boilers and industrial furnaces burning hazardous waste fuel, in Florida. In addition to using the 1994 CAP projections for LQG commercial hazardous waste demand and in-state TSDR capacity, this study also considered the potential effects of economic growth, waste reduction, public health and environmental risks, and the generation of incinerable hazardous wastes by Florida's small quantity generators. An interim

report submitted on November 1, 1994 indicated that there was no justification for additional hazardous waste incineration capacity in Florida.

#### ANALYSES OF AND COMPARISONS BETWEEN THE 1991, 1993, 1995 AND 1997 HAZARDOUS WASTE BIENNIAL REPORTS

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Over the last seven years, much has been learned about hazardous waste (HW) management and generation in Florida based on the implementation of the Hazardous Waste Biennial Reporting System (BRS) as required under federal and state laws for large quantity hazardous waste generators (LQGs) and for permitted hazardous waste treatment, storage, disposal and recycling facilities (TSDRs). However, due to the unforeseen complexities that first appeared with the initial implementation of the 1991 BRS report, and the gradual evolution of better data quality control measures and electronic reporting, for which Florida has been a national leader, it has taken some time to get a firmer grasp on these complex data sets and to make clearer comparisons over the reporting years.

Even though a better understanding of the data now exists, the reader is cautioned to not too narrowly interpret the numbers presented here. Since the data sets are very complex and there is much variability in components such as one-time and exempt HW generation, including contaminated media derived from the improper disposal of hazardous chemicals, one should be cautious in order to avoid making erroneous interpretations. In addition, the data's cleanup component (i.e. one-time hazardous waste generation) does not include all the hazardous waste that was generated, treated and disposed of on-site (i.e. in place) as a result of the federal Superfund or state cleanup programs.

Finally, even though extensive quality control efforts were made, the data in this report are only as good as the data provided to the Department by the LQGs and TSDRs. Although great efforts were made to provide training to these regulated entities on properly completing the BRS reports and using electronic reporting, there is always the possibility of incorrect reporting.

#### HW Managed On-site (Tables 3. through 5)

As displayed in Table 3, HW managed on-site (i.e. on-site HW) makes up most of the HW managed in Florida and typically includes large amounts of wastewaters. This on-site HW has been divided into two subcategories: regulated vs. exempt. The regulated on-site HW subcategory includes all HW that is regulated as a generated HW under federal and state laws and that is treated in a permitted HW treatment, disposal or recycling unit, or that is accumulated in a regulated manner before treatment or disposal in an exempt unit. The exempt on-site HW sub-category includes all HW that has not been accumulated in a regulated manner before discharge to an exempt treatment unit, and which treatment effluent is then disposed of in ways regulated under the federal Clean Water Act (e.g., publicly owned

waste water treatment works (POTWs)) or Safe Drinking Water Act (i.e. an underground injection control well (UIC)). It also includes much of the contaminated media (e.g., contaminated ground water) that does not count as generated HW and is the result of chemical spills or other mismanagement (See Table 9). Because it is exempt, it was only reported by generators that generated other regulated HW and were required to report to the Department on all their HW generation. Therefore, the exempt HW amounts included here don't include exempt HW generated by completely exempt generator sites.

The regulated and exempt on-site HW amounts are further subdivided into recurrent and one-time groups, that are also defined in the footnotes to Table 3. Recurrent HW results from manufacturing and service, waste treatment (e.g., fuel blending and solvent recovery activities), and pollution control activities. One-time on-site HW results from cleanup activities at generator facilities and includes any contaminated media. Since the regulated, recurrent on-site HW has typically been a focus of past attention and until 1997 had accounted for the majority of regulated on-site HW, Table 4 provides some additional information about its management.

Table 4 shows how the regulated, recurrent on-site HW is managed in the on-site treatment, disposal and/or recycling units at the generator facilities. As shown in this table, most (an average of 68% over the four reporting years) of this HW type is deep well injected. An important fact attached to this number is that this management takes place at just one generator facility in Florida. After deep well injection, the other predominant on-site management types performed on this HW category are waste water treatment (an average of 15% over the four reporting years), recycling/recovery (an average of 12.5% over the four reporting years), and energy recovery (an average of 3.5% over the four reporting years).

Table 5 shows how the exempt, recurrent HW is disposed of after it has been treated to remove its HW characteristics. This usually includes discharge to a POTW or to surface waters under a NPDES permit that are both regulated under the Clean Water Act and not RCRA, or discharge to an underground injection control (UIC) well permitted under the Safe Drinking Water Act. As displayed, these exempt HW wastewater streams are generated in very large quantities.

Table 3: Overview of Hazardous Waste (HW) Managed “On-Site” (RCRA-Regulated vs. Exempt), In Tons

Year	REGULATED HW		EXEMPT HW <sup>1</sup>	
	Recurrent <sup>2</sup>	One-Time <sup>3</sup>	Recurrent <sup>2</sup>	One-time <sup>3</sup>
1991	112,529	0	463,987	0.5
1993	97,267	24	1,198,125	289
1995	127,449	0	950,588	73,389
1997	189,497	197,850	897,192	1,387,511

Table 4: Management of Regulated, Recurrent “On-Site” HW by Year, In Tons

Management Type	1991	1993	1995	1997
Recycling and Recovery	16,955	1,198	28,241	23,655
Energy Recovery	8,219	2,947	0	7,512
Incineration	15	4	0	0
Waste Water Treatment	18,889	21,477	1,496	37,483
Stabilization	12	143	889	754
Deepwell/Underground Injection (Disposal)	68,264	71,342	96,494	120,009
Other Treatment/Disposal	172	154	329	83

<sup>1</sup> Exempt HW is not regulated as HW generation under the federal or state HW regulations due to the specific exclusion language incorporated into these laws (see narrative for further explanation). Since it is not regulated, only that exempt HW being generated by generators of other regulated HW and that are required to report are reflected in these numbers.

<sup>2</sup> Recurrent HW includes HW generated as a result of the manufacturing of goods or performance of services, from pollution control activities, and residuals from the treatment of HW.

<sup>3</sup> One-time HW generation may vary greatly from year to year due to unplanned cleanup activities and to the planning, permitting and construction of the necessary treatment facilities, and includes contaminated media.

Table 5: Disposal Type<sup>1</sup> and Amounts for Exempt, Recurrent HW after “On-Site” Treatment, In Tons

<b>Year</b>	<b>Public Sewer (POTW)</b>	<b>Permitted Surface Water Discharge (NPDES)</b>	<b>Underground Injection Control Well (UIC)</b>
1991	171,077	292,847	64
1993	514,469	399,573	284,083
1995	535,170	103,003	312,416
1997	566,273	155,841	175,078

Off-Site HW Generation (Tables 6 Through 8)

Tables 6 through 8 focus on the generation and management of HW that is shipped off-site for treatment, disposal and/or recycling. Due to the limited number of commercial treatment facilities in Florida, much of this HW is shipped to storage or transfer facilities at HW transporter sites before final management. Ultimately, most of the HW shipped off-site goes to out-of-state, permitted treatment, disposal and recycling facilities (i.e. is exported). As was done for on-site HW, off-site HW is also divided into recurrent and one-time subcategories.

Table 6: Overview of Regulated Hazardous Waste (HW) Shipped “Off-Site” (or “Off-Site HW”) for Management, In Tons

<b>Year</b>	<b>Recurrent HW</b>	<b>One-Time HW (e.g., Cleanup)</b>
1991	72,912	5,289
1993	59,587	16,891
1995	57,659	8,031
1997	50,672	26,992

Tables 7 and 8 focus on the management of recurrent HW, since this usually makes up most of the HW generation shipped off-site. These tables summarize how regulated, recurrent HW shipped off-site has been managed during the report years and how much of this management has been performed at in-state versus out-of-state facilities (i.e. exports).

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<sup>1</sup> After this exempt, recurrent HW has been treated for its hazardous constituents, the resulting waste water treatment effluent is disposed of in one of these three manners.

Although this is not shown, one-time off-site HW also tends to be exported to out-of-state facilities for final management and disposal. As shown in Table 7, most of this HW goes to off-site recycling/recovery facilities (an average of 33.5% over the four reporting years) or energy recovery/fuel blending facilities (an average of 30% over the four reporting years). An average of fourteen percent over these report years ends up at land disposal facilities (stabilization/landfill). Finally, an average of about two and one-half percent of this HW over the report years go to off-site (and out-of-state) incineration facilities.

Table 7: Regulated, Recurrent HW Shipped “Off-Site” by Management Type by Year, In Tons

<b>Management Type</b>	<b>1991</b>	<b>1993</b>	<b>1995</b>	<b>1997</b>
Recycling/Recovery	38,828	18,212	17,145	10,009
Energy Recovery/Fuel Blending	18,284	12,674	20,620	18,542
Incineration	1,230	1,755	809	1,867
Waste Water/Sludge Treatment	2,216	9,573	3,393	4,261
Stabilization/Landfill	8,748	9,630	6,937	8,481
Deepwell/Underground Injection	631	1,886	822	456
Other Treatment/Disposal	91	2,624	180	90
Transfer Facility Storage	2,884	3,216	7,752	6,967

Table 8 shows the location (in-state vs. out-of-state) of the initial HW management facilities receiving the regulated, recurrent HW shipped off-site. As can be seen, most of this HW goes to out-of-state treatment or disposal facilities. In addition, as mentioned in the footnote to this table, most of the HW shown as going to in-state transfer facilities will probably be transferred to out-of-state facilities for final management. HW going to in-state fuel blenders in 1995 would also have been shipped to out-of-state energy recovery facilities, since Florida did not have any energy recovery capacity in those years (see Table 11).

Table 8: In-State vs. Out-of-State (Exports) Shipments of Regulated, Recurrent HW, In Tons

<b>Year</b>	<b>In-State Management</b>		<b>Out-of-State Management</b>
	<b>(Treatment)</b>	<b>(Transfer)<sup>1</sup></b>	<b>(Exports)</b>
1991	29,654	1,990	41,268
1993	15,914	2,279	41,376
1995	11,435	4,484	41,740
1997	1,782	3,843	44,948

Total HW Management & Generation (Tables 9 and 10)

The total amounts of hazardous waste management and generation for each of the report years from 1991 through 1997 are based on the data received from all LQGs and TSDRs that submitted BRS reports (see Table 10) to the Department for those years. The Department has broken down this HW management and generation into two components: that which is managed on-site at the generator’s facility (i.e. on-site HW) and that which is shipped off-site for management (i.e. off-site HW). As seen for each of these components in the tables that preceded, they subdivided into other categories upon further analyses. However, in this table they are reported as a whole except for the exempt contaminated media. Finally, since not all of the HW generated in a calendar year is treated or disposed of in that calendar year, a storage factor is displayed that shows the end-of-year inventory for HW generated in that reporting year, if the number is positive (+), or the management of HW end-of-year inventory generated in the previous calendar year if the number is negative (-).

In Table 9, the HW managed on-site is divided into three subcategories: exempt, contaminated media, other exempt recurrent or one-time HW managed on-site, and regulated recurrent and one-time HW managed on-site. For the “Regulated HW” managed on-site and the “Regulated HW” shipped off-site columns, both recurrent and one-time HWs are included in these amounts. Finally, the “Regulated HW Generation Total” is the sum of the regulated HW managed on-site, the regulated HW shipped off-site, and the storage factor amount.

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<sup>1</sup> Based on past analyses, after this initial in-state transfer it is believed that most of this HW would have been delivered to out-of-state facilities for final management. In addition, any HW that was treated by an in-state fuel blender in 1995 and 1997 would have been shipped out of Florida for final energy recovery use. Therefore, these numbers only represent initial management of this HW and not final management.

Table 9: Total HW (Recurrent & One-Time) Management and Reported Generation by Reporting Year, In Tons

Year	HW Managed On-Site		HW Shipped Off-Site			Regulated HW
	Contaminated Media - Exempt <sup>1</sup>	Exempt Treatment	Regulated HW	Regulated HW	Storage Factor <sup>2</sup>	Generation Total
1991	0	463,988	112,529	78,201	+ 10,478	201,208
1993	289	1,198,125	97,291	76,478	-442	173,327
1995	73,378	950,599	127,449	65,690	+ 145	193,284
1997	1,385,683	899,020	387,347	77,664	-122	464,889

Table 10: Total Number of Generator Reporters by Report Year

Year	Managing HW On-Site	Shipping HW Off-Site	Total # of Reporters By Year <sup>3</sup>
1991	85	427	434
1993	102	453	455
1995	100	435	439
1997	91	385	387

Summary of Commercial In-State HW Management Capacity (Tables 11 through 12)

Table 11 shows reported HW management capacities for in-state commercial HW management facilities operating during the report years. Since this information wasn't reported for the 1997 BRS report year, capacity totals have not been included for 1997. From these numbers, it can be seen that fuel blending, solvent recovery and other organics recovery have been the primary HW management methods employed by commercial HW

<sup>1</sup> RCRA-contaminated cleanup media is usually not counted as HW generation (depending on the type of HW mishandled), but its management is required to be reported.

<sup>2</sup> The Storage Factor = RCRA Generation Total - (Regulated On-Site + Shipped Off-Site). If positive, it indicates end-of-year inventory. If negative, it indicates use of the previous calendar year's end-of-year inventory.

<sup>3</sup> Many generators manage HW on-site and also ship some HW off-site. In this case they will be counted under each of the on-site and off-site columns, but not in the total # of reporters, and so the number in the total number of reporters column is not equal to the sum of the numbers in the on-site and off-site columns.

management facilities in Florida. The one commercial facility that burned HW fuel for energy recovery as shown in 1991 and 1993 closed in 1994.

Table 11: Types of HW Management Capacities at Permitted Commercial HW Facilities in Florida by Year, In Tons

<b>Management Type</b>	<b>1991</b>	<b>1993</b>	<b>1995</b>	<b>1997<sup>1</sup></b>
Metals Recovery	210	840	1,430	-
Solvents Recovery	9,890	21,580	10,080	-
Organics (e.g., Fuels) Recovery	218,440	210,450	180,350	-
Energy Recovery - liquids	39,350	39,350	0	-
Fuel Blending	49,910	49,910	66,150	-
<b>Totals By Year</b>	<b>317,800</b>	<b>322,130</b>	<b>258,010</b>	-

Table 12 shows the amounts of HW imported from other states (and to a limited extent from outside the US) to Florida's commercial HW facilities for management. As above, these numbers reflect the predominate HW management capacities reported for Florida's commercial HW facilities in Table 11.

Table 12: Imports of HW to Florida's Commercial HW Management Facilities by Year, In Tons

<b>Management Type</b>	<b>1991</b>	<b>1993</b>	<b>1995</b>	<b>1997</b>
Metals Recovery	0	0	130	330
Solvents Recovery	4,934	3,248	1,181	259
Other (e.g., Fuels) Recovery	12,876	8,601	6,616	0
Energy Recovery	10,276	0	0	0
Fuel Blending	5,425	4,776	4,521	3,288
Transfer Facility Storage	3,601	3,494	4,601	3,402
<b>Totals By Year</b>	<b>37,110</b>	<b>20,120</b>	<b>17,045</b>	<b>7,280</b>

<sup>1</sup> Facility capacities were not required to be reported for the 1997 report year. The 1991 capacity numbers were modified by using Florida's "1993 Hazardous Waste Capacity Assurance Planning Submission" of May 1994.

# FLORIDA'S POLLUTION PREVENTION PROGRAM

## DEFINITION OF POLLUTION PREVENTION

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Pollution Prevention is a process improvement that eliminates, conserves or reuses materials that are the source of pollution. It achieves positive financial, environmental and worker health results.

Pollution prevention increases efficiency of business operations and results in lower raw material and labor costs. It eliminates long-term cradle-to-grave liabilities, hazardous waste management fees, and expenses associated with pollution control. Pollution prevention can also decrease worker exposure to toxins and clean-up costs resulting from improper disposal of hazardous substances.

## LEGISLATIVE BACKGROUND

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The 1988 Legislature established an assistance program designed to aid in reducing the amount and toxicity of hazardous waste generated in the State. In 1991, the Florida Pollution Prevention Act expanded the original legislation to encourage source reduction (preventing and reducing pollution at its source), waste reduction, resource conservation, and energy efficiency. It also expanded the Department's technical assistance activities, directed all state and local agencies to pursue prevention strategies, and allowed financial and proprietary data collected during on-site technical assistance visits to be kept confidential.

## POLLUTION PREVENTION PROGRAM

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The Pollution Prevention (P2) Program offers non-regulatory technical guidance and education to Florida citizens, businesses, and industries. Since its inception, P2 Program engineers have assisted over 400 Florida businesses in eliminating or reducing the generation of hazardous waste and toxic releases to Florida's environment. Most efforts focus on small businesses because they have fewer resources to research and implement pollution prevention options.

The P2 Program's many services include on-site pollution prevention assessments, local government training, and participation in government workshops and trade association forums. Publications include the *P2 Links* newsletter, industry tip sheets, and trade journal articles. A Statewide Pollution Prevention Conference, which features speakers from large industry, small businesses, the military and government, is held annually.

## STATEWIDE P2 ENGINEERS

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Florida's P2 Program currently employs three full-time and three part-time engineers with extensive industrial experience. They provide pollution prevention technical assistance to Florida businesses and citizens around the state.

## POLLUTION PREVENTION RESOURCE CENTER

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The Resource Center contains tip sheets, industry articles and case studies that illustrate economic and environmental benefits of pollution prevention. Documents can be obtained by direct request at 850-488-0300, by message at 1-800--741-4337, or through the P2 Program's web site at <http://www.dep.state.fl.us/dwm/programs/p2>.

## DISTRICT P2 COORDINATORS

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The P2 Program continues to hold quarterly meetings with the district Pollution Prevention Coordinators to facilitate the flow of information between offices. This year, the P2 Program staff will provide training sessions to the P2 teams being formed to make recommendations within each district.

## ADDITIONAL PROJECTS FUNDED BY EPA GRANTS

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The USEPA Pollution Prevention Incentives for States grants fund many additional ongoing and special P2 projects. These include:

- A database containing measurements of pollution prevention successes. These findings will assist the P2 Program to quantitatively evaluate the success of services offered to Florida businesses, and to identify industries in need of assistance.
- An initiative to identify pollution prevention incentives for industries through the environmental regulatory structure.
- A project to identify industrial parks and to provide technical assistance and P2 training to the industries.
- Expanded partnerships with private industry and government agencies, including: the Florida Manufacturing Technology Centers, the John F. Kennedy Space Center, NAS Whiting Field, the Florida Small Business Development Centers and the FDEP Small Business Assistance Program.
- A supplemental project allows the P2 Program to assist the Florida Pollution Prevention Roundtable, a group composed of local government representatives, with travel, funding, and staff time. The Roundtable has set up a web site at <http://flppr.org>, which contains their current workplan. The workplan provides more specific information on how the group will meet its goals, which are to coordinate pollution prevention efforts in the state, improve the transfer of information, and maximize local efforts.
- Partner with the Hazardous Waste Management Section to develop a training program to integrate pollution prevention into the SQG program by developing an introductory training course for field staff conducting the county and regional hazardous waste management program. The goal is to teach county staff how to conduct multi-media compliance assistance visits to small businesses. Training sessions will emphasize integrating multimedia pollution prevention into the compliance site visits.

# USED OIL PROGRAM

## BACKGROUND

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Florida's comprehensive, statewide Used Oil Recycling Program is recognized as one of the most successful in the United States and serves as a national and international model. The Florida Department of Environmental Protection (DEP) has implemented a used oil management program under Sections 403.75 through 403.769, Florida Statutes (F.S.), since 1984. The program consists of a registration and record keeping program for used oil handlers and technical assistance to the public and regulated community. The 1988 Solid Waste Management Act substantially changed public policy toward solid waste management and used oil collection, management, transportation and recycling. New initiatives included a 5% price preference for the purchase of recycled and rerefined used oil by state and local governments, as well as some limited liability exemptions for businesses which accept used oil from the public. The 1988 Legislature approved a one-time appropriation of funds amounting to \$1 million for local government grants for establishing public used oil collection centers and \$1.5 million for statewide incentive/awareness and educational programs aimed at Do-It-Yourself (DIY) oil changers and school students. These funds have been expended and follow-up measures are being taken. The Department continues its regulatory program and, though the number of regulated parties remains relatively stable, the amount of used oil recycled per capita continues to grow.

Florida law contains several bans on the disposal of used oil. As of October 1, 1988, used oil may not be discarded into sewers, drainage systems, septic tanks, surface or ground waters, watercourses, or marine waters. It cannot be mixed or commingled with solid waste to be disposed of in landfills, except for those instances wherein the disposal occurs unknowingly, or is approved by the Department (such as in the case of emergency clean-up of accidental oil spills). Used oil cannot be mixed with hazardous substances or hazardous wastes that make it unsuitable for recycling or beneficial use. It cannot be used for road oiling, dust control, weed abatement, or other similar uses that may release used oil into the environment.

The used oil statutes were amended by the 1993 Legislature. The majority of these amendments were made to make Florida law consistent with the federal used oil regulations, especially in the use of terms and definitions. A major change requires retailers who sell over 500 gallons of oil annually to post signs which display the State's toll free number 1-800-741-4DEP (4337). This number uses a voice mail system to provide the locations of all public used oil collection centers in Florida, indexed by post office zip code.

Chapter 62-710 of the Florida Administrative Code (F.A.C.), addresses used oil management and implements the provisions of state law. It establishes a program for registration, record keeping and reporting by handlers of used oil; certification of used oil transporters; and permitting of used oil processing facilities. The federal used oil management standards which are found in Chapter 40, Part 279 of the Code of Federal Regulations (CFR) are adopted by reference in Rule 62-

710.210, F.A.C., effective June 8, 1995. The definitions and forms used in this program are found in Chapter 62-701, F.A.C. (Solid Waste Management).

Section 403.756, F.S., requires the Department to “submit an annual report to the Legislature which summarizes information on used oil collection and recycling, analyzes the effectiveness of this act, and makes recommendations for any necessary changes.” This report addresses the status of Florida’s Used Oil Recycling Program using data collected during 1998.

#### PUBLIC USED OIL COLLECTION CENTERS

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As of December 1999, Florida had a statewide network of 1,125 PUOCCs. The Department has worked closely with all county Used Oil Coordinators, the Florida Petroleum Council, the Florida Petroleum Marketers Association, and others in the quick-lube oil-change business in establishing this network. As a result of this effort, all but four (rural) counties have more than one location where used oil can be taken for recycling. Major oil companies and hundreds of independent service stations, auto repair shops, quick-lube shops and auto parts retailers have volunteered to become public used oil collection centers.

The number of PUOCCs participating in this program seems to be stabilizing. This past year, some municipalities have consolidated collection sites or initiated curbside recycling programs. At the same time, new businesses continue to register as PUOCCs, taking the place of withdrawn sites. Operators of used oil collection sites who maintain compliance with all applicable management standards are granted certain liability exemptions under Section 114 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund), are granted protection against enforcement penalties related to a release of used oil under Florida Statutes, Section 403.760, but must still assume the significant costs associated with a clean-up. Despite the slight fluctuations in the number of PUOCCs, the quantity of used oil collected from household Do-It-Yourselfers (DIYers) continues to increase annually.

PUOCCs accepted 2,564,982 gallons of used oil in calendar year 1998, which continues the trend of an average annual increase of about 3%. It is difficult to estimate the number of DIYers in Florida. This year, the Department is applying a strict estimate value of 4 oil changes per year per DIYer. The Department feels that in Florida, because of the size of its retirement age population, the booming quick lube service business, and large lease fleets, the number of DIYers is probably close to 15%. Consequently, FDEP estimates that Florida DIYers generate approximately 7.6 million gallons of used oil. This means that Florida is now collecting about 34% of the used oil generated by DIYers.

The Department maintains a toll-free number (1-800-741-4DEP) which uses voice mail to index PUOCCs by post office zip code. Anyone calling this number is prompted to enter his or her zip code. The system then either reports a listing of PUOCCs in that zip code, or directs the caller to leave a taped message for a prompt reply from a Department representative.

## ANNUAL REPORTS FOR CALENDAR YEAR 1998

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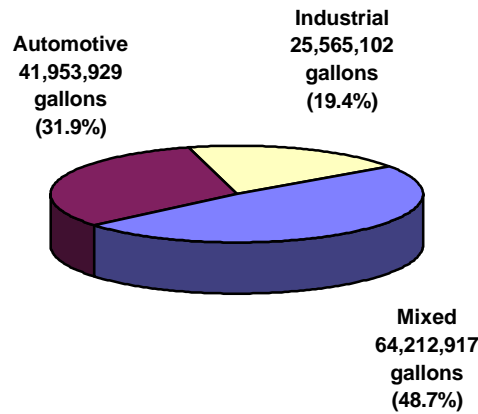
As of December 1999, 129 individual private and public businesses were included in the registration database, 11 of which are based outside of Florida. This is less than the 143 handlers registered in 1998 and is attributed to falling prices in the virgin petroleum market which has a direct, negative impact on those businesses involved in used oil recycling. The high cost of transporting and processing used oil for recycling makes it difficult to compete with virgin crude which was priced at its lowest level since the mid-1980s. Most of the handlers are registered for more than one activity and these 129 businesses now occupy 168 sites.

Effective June 8, 1995, Used Oil Filter (UOF) Handlers were required to register with the Department's Used Oil Recycling Program. Many used oil handlers now also manage UOFs to meet customer demand. As of December 1999, the DEP database includes 104 UOF Transporters, 75 UOF Transfer Facilities, 28 UOF Processors and 5 UOF End-Users (metal foundries and Waste-To-Energy facilities [WTEs] that accept segregated loads of UOFs from non-registered persons). As a WTE facility will burn the oil contained within a filter for energy recovery and recycle the metal casing, the Rule allows generators of used oil filters who live in one of the 14 counties serviced by a WTE facility to commingle their used oil filters with the rest of their solid waste. The WTE facility, in turn, need not register with the Department to manage commingled filters. Because such a large portion of UOF generators in the state are in areas served by WTE facilities, the reporting requirement for UOF Handlers was made optional within the Rule. As reporting is optional, data regarding UOF management is destined to remain an approximation.

### Types and Quantities of Used Oil Generated by Source

In calendar year 1998, 131,731,948 gallons of used oil and oily wastes were reported to have been collected. Automotive used oil and oily waste made up 31.9% of the total amount collected, including 2,564,982 gallons collected from nearly 1125 Public Used Oil Collection Centers (Figure 2). Approximately 19.4% of the total were industrial oil collected from bulk petroleum and various industrial facilities, and other sources. The remaining 48.7% of the total was of the mixed type generated by commercial sources (i.e. a combination of automotive and industrial oils). Compared to last year's data, more oil is reported as Mixed, compared to last year's data. This seems to indicate a consolidation of loads by handlers to address the previously described tight market conditions.

Figure 2: Amount of Used Oil and Oily Wastes Collected in Florida, 1998



#### Disposition of Used Oil

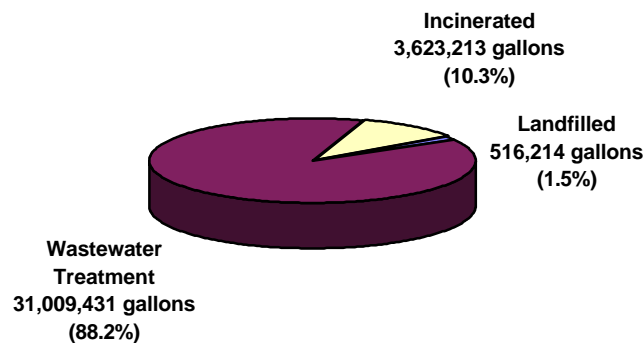
Of the 131,731,948 gallons of used oil reported to have been collected in Florida during 1998, about 41,795,767 gallons represent a duplication of data which occurs when used oil transporters report their collections to the Department when the oil is not end-used but rather is transferred to a another facility. The receiving facility then also reports this same quantity as having been collected at that site. When the on-hand inventory is included and the transferred quantity is removed from the data, a total of 93,714,159 gallons of used oil and oily wastes were reported as collected for management. On the other end, 94,624,851 gallons of used oil are reported as being managed (recycled or disposed). This leaves a difference of 910,417 gallons. According to information provided by industry, there is always a degree of error in tracking used oil because of differences in measuring loads of used oil which are intrinsic to the used oil industry. Most transporters use dip sticks to estimate volume during pick-up and transit. Processors use a more sophisticated measure, using actual weight from certified scales in determining a price per load. It is not uncommon for transporter estimates to differ by 6-12% from the final measured volume, with the mean falling around 7%. The error in this year's annual report calculates to less than 1% of the total quantity reported as collected and carried over previous inventory. This error is the lowest in the program's history and reflects well on the Department's efforts to increase the accuracy of its data collection and management.

Of the 94,624,851, gallons of used oil and oily waste reported as managed, 53,147,873 gallons (56.5%) were recycled as follows:

- 40,710,477 gallons (68.4%) were marketed as an on-specification used oil fuel
- 1,330,706, gallons (2.2%) were marketed as an off-specification used oil fuel
- 11,106,690 gallons (18.7%) were marketed for other industrial uses (e.g. phosphate beneficiation)
- 6,328,120 (10.7%) gallons was counted as end of year, on-site inventory

The remaining 35,148,858 gallons (43.5% of the total amount of used oil reported managed) ended up as oily wastes. These oily wastes were managed as follows (Figure 3):

Figure 3: Treatment and Disposal of Oily Wastes in Florida



### Used Oil Filters (UOFs)

This is the fourth year that data on UOF management have been collected. The Department feels that this year's report is the most comprehensive yet, due to refinements in the database and thorough quality control checks of all reports submitted to DEP.

There are a number of difficulties in deriving conclusions with a high degree of confidence from UOF data. First, as the Department's authority to regulate UOFs extends only to the oil trapped within the filter, the reporting of such data was made optional under the rule. Second, UOFs are

collected in a number of different ways (e.g. barrels, drums, roll-offs or bins of crushed, uncrushed or shredded filters) and the data are reported using barrel equivalents (1 barrel equals a certain number of filters) and tonnage conversions (converting weight to numbers of filters). Hence, the numbers generated can only be approximations. Furthermore, staff has been unable to obtain sales figures of new oil filters in Florida as the companies consider this proprietary information involved in this business. As a result, staff can only estimate the number of filters generated in the state. Finally, data on filters generated in areas of the state serviced by Waste-to-Energy facilities are not reported at all. This is assumed to be a significant number of filters as approximately 30% of all solid waste generated in Florida is burned for energy recovery.

Even though the actual reporting mechanisms are weak, the Department continues to use a very liberal estimate of UOF generation in Florida (assuming four filter changes per year for the 12.7 million vehicles registrations estimated for 1998 by the Florida Department of Highway Safety and Motor Vehicles). Based on this assumption, FDEP now estimates that approximately 52 million UOFs are generated in Florida per year.

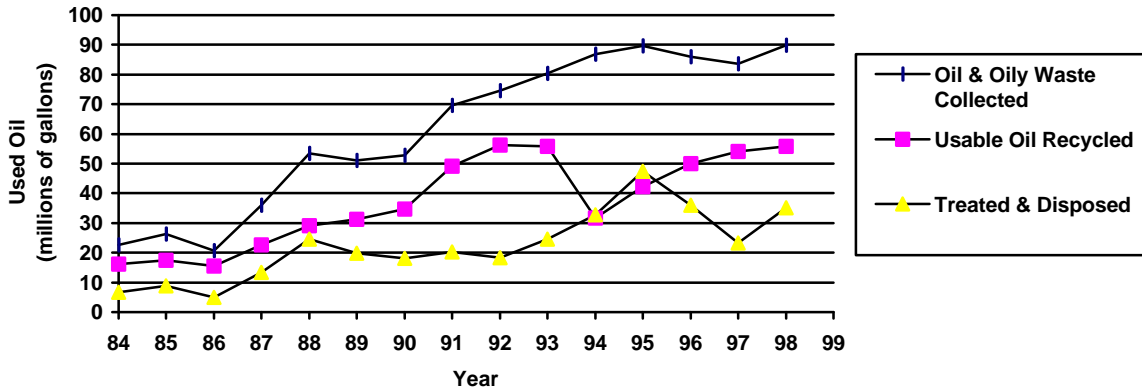
From the data reported, approximately 18,544,657 UOFs were collected (diverted from landfill disposal). This accounts for approximately 36% of the UOFs generated in Florida. It can be assumed that persons served by a WTE facility manage a majority of the unreported filters. Most of the filters reported to have been collected were sent to U.S. Foundry in Dade County, which are recycled into gray steel to produce street drain covers and similar products. The prohibition against the landfill disposal of used oil filters has resulted in the recycling, rather than disposal, of approximately 9,272 tons of steel in 1998. About 427,430 gallons of used oil, trapped within the filter, were collected during the management of these filters and handled under the used oil management standards. Approximately 985,478 UOFs were reported as end of year, on-site inventory. It is very common for filter handlers to store large quantities of filters on-site until a large bulk load can be shipped to a final end user. This practice minimizes transportation costs, allows for thorough draining of used oil from the filters and ensures a maximum value for the clean metal. A slight degree of error can be assumed, based on the variables mentioned at the start of this section. The degree of error in this year's report is around 1.8%.

### Trends

Figure 4 shows the trends of used oil management in Florida from 1984 to present. Overall, the trends (collection, recycling and disposal) show a steady increase in volume over time. This is to be expected, given Florida's steady population growth.

It is difficult to correlate increased rates of used oil recycling to population growth due to many variables. Variables resulting in reduced oil changes include extended vehicle service schedules for newer cars (significant in Florida's large rental fleets) and for those consumers using the new,

Figure 4: Used Oil Management in Florida, 1984-1998



synthetic oils which have a longer life, the use of on-board, in-line oil filtration systems by truck fleets, and the growth of on-site used oil reconditioning and recycling technologies increasingly employed by industry. Nonetheless, the rate of growth in the volume of used oil collected seems to at least keep pace with the population growth rate.

A significant adjustment is evident in the period between 1993 and 1995. It was during this time that DEP promulgated amendments to both the Used Oil Management standards and, at the same, adopted standards for the management of Petroleum Contact Water. The changes in definitions of used oil, oily wastes, and petroleum contact water (PCW), along with the fine tuning of the data collected by DEP regarding these activities, resulted in a major data shift. The trend since the shift during rulemaking is interpreted by DEP to be very positive in that the amount of oil actually recycled continues to increase.

The Department is continuing to refine the data gathered in assessing the effectiveness of this program for this annual report through explanatory letters, quality control screening of all incoming reports and monthly contributions to the "Oil Drop", the trade publication of the United Association of Used Oil Services (UAUOS), which has a mailing list of over 500 entities involved in the management of used oil.

The Department also continues to work with the UAUOS in setting standards within the industry. These include standards for the management of used oil such as an industry-wide sampling and analysis procedure for screening oil prior to transport and minimum spill control standards. The UAUOS continues to support the Department in fine tuning the standards used

to measure the effectiveness of the program and is committed to assist the Department during upcoming rulemaking.

## RECOMMENDATIONS

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Florida's statewide Used Oil Recycling Program, one of the most comprehensive, extensive, and successful in the United States, continues to grow as it continues to receive national recognition. There is, however, always room for improvement.

The Department is currently preparing to initiate rulemaking to upgrade the used oil management standards. The purpose of this rulemaking is fourfold: 1) to correct technical errors caused by a flurry of rule amendments under Governor Chiles' Executive Orders Number 95-74 (2/17/95) and 95-256 (7/12/95); 2) to upgrade the minimal insurance requirement for Certified Used Oil Transporters which has not changed since it was set at \$100,000 in 1990; 3) to revise the tank standards to reflect changes in the Department's tank rules; and 4) to clarify the regulation of non-oil related solid waste management at Used Oil Processing facilities. The Department is working closely with industry and does not expect this rulemaking to be contentious.

Additional funding is needed to enhance the educational initiatives developed and implemented in 1989-90. During those years, complete formal education curriculum kits were introduced into every public K-1, secondary and post secondary school in the State. The interest, need and demand for such materials continue to grow as these one-time production materials become outdated and the supply is exhausted.

It has also been over ten years since the Department quantified the DIY segment of the used oil universe. While statutes, rules and data collection have kept pace with the changing nature of both used oil management and population trends, the tools used to measure the effectiveness of the DIY segment are woefully outdated and in need of refinement.

Florida's Used Oil Recycling Program remains on the cutting edge of change as environmental management and regulation evolves into the next century. The focus of both the regulators and the regulated community is shifting steadily towards management schemes that are multi-media (encompassing a number of heretofore separately regulated waste streams) by nature and increasingly incorporate pollution prevention (P2) goals. The object of P2 is to consider all wastes and to generate as little waste as possible. As over 80% of the used oil in Florida is automotive or mixed with automotive, the automotive service industry has been a major stakeholder in this program. More and more of these businesses are moving towards P2 management schemes. Used oil is not so much a stand-alone program as it once was. To address this change of focus, Florida's Used Oil Recycling Program has been enhancing its relationship with the Department's P2 staff. Both sections are striving to coordinate and strengthen their communication efforts. Joint efforts in regulatory and education initiatives have begun as these programs position themselves to assume a proactive role in the changing world of environmental regulation.

A critical step in keeping the Used Oil Recycling Program up to date and at the cutting edge of technology occurred in March 1998 when the program established a presence on the World Wide Web at the Department's internet site. The full text of the Used Oil Report and all fact sheets and forms used in this program are available for downloading at this site. Various education materials are being added to the site. The Used Oil Recycling has recently begun to incorporate its data into Geographic Information System (GIS) software which will be used to enhance the information available on its website. The internet address for Florida's Used Oil Recycling Program is [http://www.dep.state.fl.us/dwm/programs/used\\_oil/](http://www.dep.state.fl.us/dwm/programs/used_oil/).

# SUMMARY OF FLORIDA'S HAZARDOUS WASTE MANAGEMENT PROGRAMS

After more than twelve years of working with local governments, Regional Planning Councils and private industry, the Department has identified a number of constraints and opportunities that affect the status of hazardous waste management needs in Florida.

## LOCAL HAZARDOUS WASTE ASSESSMENT, NOTIFICATION AND VERIFICATION PROGRAM

The Local Hazardous Waste Assessment data and reports submitted to the Department from 1986 through 1999 indicate substantial room for improvement in the management and disposal methods used for hazardous waste. Much of the hazardous waste from small quantity generators was reportedly sent to public landfills or discharged into sewer systems or septic tanks. This waste could have been managed in a more environmentally sensitive manner. These studies show a need for more compliance assistance and pollution prevention activities, and consolidation of these hazardous waste streams through local and regional collection and transfer facilities. In addition, this emphasizes the importance of partnering with local government and industry through the Assessment, Notification and Verification Program in its educational outreach to, and the collection of data from, small quantity generators of hazardous waste. Current partnerships are being strengthened to help provide common sense solutions to environmental management problems.

## LOCAL HAZARDOUS WASTE COLLECTION CENTER GRANT PROGRAM

In 1985, the Legislature initiated a grant program designed to establish a statewide network to collect and properly manage household hazardous wastes at the local level.

Hazardous Waste Collection Center Grants, awarded to 49 counties, have helped fund the construction of 79 permanent, operational collection centers and establish a network of such facilities in 73% of Florida's counties. Grantees have indicated that their permanent hazardous waste collection centers would probably not have been built, nor would they have hazardous waste collections, had it not been for the incentive of the grant. Contracts for funding collection center construction only require the centers to operate for a limited time. However, the centers have generally not only continued to operate, but local hazardous waste management programs have evolved, becoming more comprehensive, efficient and sophisticated as counties have supported them with funding and technical staff.

Cooperative Collection Center Arrangement Grants (Co-op Grants) have helped fund 1-day collection events in 22 counties. This grant provides a hazardous waste management opportunity for a smaller county that is not ready to construct and operate a permanent facility. So far, 9 counties (Flagler, Franklin, Gadsden, Hardee, Hendry, Jefferson, Levy, Liberty and Okeechobee) that opted to initially participate in the Co-op Grant went on to

secure state funding for permanent collection center construction. They used their co-op experience as a bridge between their state Amnesty Days collections and establishing their own permanent programs.

Although no grants for funding permanent collection center construction have been awarded since 1996, there still are counties without centers that have expressed interest in the grant. These counties have been encouraged to continue participation in the Co-op Grant for two reasons. First, some smaller counties are at risk as far as continuing operation of their facilities after funding from their grant is depleted. Second, the annual legislative appropriation has diminished to the point where it is not adequate to fund grants for collection center construction in addition to the other grants. If there were adequate grant funding to construct permanent collection centers in the 14 counties currently participating in co-op programs and the two additional counties recently expressing interest, then 97% of the counties in Florida would be managing their hazardous waste with local programs.

Unique and Innovative Project Grants have provided counties the incentive and funding to expand local hazardous waste management operations with new programs, some of which have received national recognition.

#### MERCURY-CONTAINING LAMPS AND DEVICES MANAGEMENT PROGRAM

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As a result of the 1993 solid waste legislation and the subsequent development of streamlined waste management regulations, a solid infrastructure for recycling mercury-containing lamps and devices has developed resulting in a significant and growing recycling rate for these discarded products. These streamlined regulations have spawned an industry funded product stewardship (“take back”) program for mercury-containing thermostats in Florida and about 10 other states. Ongoing research and demonstration projects are improving the management of these discarded products from medical facilities and from building demolitions and are seeking to quantify mercury emissions and the emission sources during the collection, handling and landfilling of municipal solid waste.

#### BATTERY MANAGEMENT PROGRAM

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The Department’s proposed battery bill passed in the 1993 Legislature along with the provisions for mercury-containing lamps and devices. This law set standards for reducing heavy metals in these products to reduce their concentration in the municipal solid waste stream. It prohibited the use of mercuric-oxide button cell batteries that were commonly used in hearing aides and set up mandatory collection and recycling programs for nickel-cadmium and small sealed lead acid rechargeable batteries and commercial/industrial mercuric-oxide batteries. As a result, the state has been a leader in the initiation of a successful private corporation, the Rechargeable Battery Recycling Corporation, which collects and recycles nickel-cadmium batteries throughout Florida and the nation. This model is being used to develop a similar program for small sealed lead-acid rechargeable batteries.

## PESTICIDE COLLECTION PROGRAM

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In 1996 and 1997, the Department worked with the Department of Agriculture and Consumer Affairs, a private pesticide supplier and a variety of other governmental agencies and trade organizations to develop Operation Cleansweep. This program was set up to collect stored stocks of canceled, suspended and unused pesticides from agricultural and other commercial users for proper disposal. Since there has been no funding and hence no collections since the 5 pilot collections carried out in 1996 and 1997, the need to reduce the stored stocks of these pesticides remains and a variety of funding scenarios, including appropriations from the Legislature, continue to be pursued.

## CATHODE RAY TUBES

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Since cathode ray tubes, an integral part of computer monitors and televisions, are estimated to be the second largest source of lead in the municipal solid waste stream, the Department is developing strategies to foster the recycling or other proper management of these products. Possible strategies include regulations along the Universal Waste Rule model and time-limited funding for county programs in order to develop a sustainable collection system and recycling infrastructure.

## POLLUTION PREVENTION PROGRAM

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The implementation of the Pollution Prevention (P2) Program is an essential element in Florida's hierarchy of hazardous waste management programs. An effective P2 program must be based on accurate and current information which can be provided by the hazardous waste biennial reports and the ongoing Small Quantity Generator (SQG) Assessment, Notification and Verification Program. Cost effective P2 technologies are being identified and implemented as an established part of a company's management and operation practices. By avoiding the creation of wastes, costs are substantially reduced. Chemical product substitutions, modification of production processes, volume reduction, better housekeeping and inventory management methods, recycling, reuse, and energy recovery are all methods which can be used to reduce the costs of waste management while achieving economic efficiency and environmental protection.

The P2 Program with funding from EPA grants is laying the groundwork for establishing P2 Programs on a local government level. Through the SQG Assessment, Notification and Verification Program, interested local governments are developing P2 plans that will be instituted at county operated facilities. Local government P2 programs will serve as demonstration projects that can be copied by area businesses. Additionally, the P2 Program is developing measurement tools to track the effectiveness of pollution prevention activities.

The Hazardous Waste Management Section in the Department's Division of Waste Management is currently seeking to work more closely with the Department's P2 Program and its other compliance assistance programs. The SQG Assessment, Notification and Verification Program, through its' relationship with local government programs, can provide a unique opportunity to provide further P2 assistance to SQGs and other small businesses.

## USED OIL MANAGEMENT PROGRAM

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Florida's Used Oil Recycling Program remains on the cutting edge of change as environmental management and regulation evolves into the next century. The focus of both the regulators and the regulated community is shifting steadily towards management schemes that are multi-media (encompassing a number of heretofore separately regulated waste streams) by nature and increasingly incorporate pollution prevention (P2) goals. To address this change of focus, Florida's Used Oil Recycling Program has been enhancing its relationship with the Department's P2 staff. Both sections are striving to coordinate and strengthen their communication efforts. Joint efforts in regulatory and education initiatives have begun as these programs position themselves to assume a proactive role in the changing world of environmental regulation.

## HAZARDOUS WASTE MANAGEMENT CAPACITY ASSURANCE PLAN

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In 1983, the Legislature believed there was a need for a facility to store and treat hazardous waste in Florida. In 1988 and 1989, state-owned land near the Union Correctional Institution in Union County was recommended and designated as a site for a multipurpose hazardous waste treatment facility. Also, in 1989 and 1991, two private companies applied for permits to construct commercial hazardous waste incineration facilities. However, the 1994 Capacity Assurance Plan and the Department's Hazardous Waste Incineration Needs and Capacity Study demonstrated that there is more than enough commercial capacity at the national level to handle Florida's off-site demand, and that the need for new commercial incineration facilities in Florida could not be justified.

## ANNUAL WORKSHOP AND TRAINING ON HAZARDOUS WASTE MANAGEMENT

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Each spring the Hazardous Waste Management Section sponsors a 5-day workshop for local government staff managing hazardous waste programs. Ideas and information are exchanged on pollution prevention, personal and site safety, cost-saving and efficient waste management strategies, and on new legislative mandates.



# APPENDICES



# Appendix 1: SQG Grant Program Funding Summary

FY95/96

Citrus County (HW299)	Base SQG Grant for \$30,000
Gadsden County (HW325)	Base SQG Grant for \$30,000
Gulf County (HW324)	Base SQG Grant for \$30,000
Hillsborough County (HW326)	Expanded SQG Grant for \$50,000
<b>Total</b>	<b>\$140,000.00</b>

FY96/97

North Central Florida RPC (HW327) (for Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, and Union Counties)	Base SQG Grant for \$54,000
West Florida RPC (HW352)(for Santa Rosa, Okaloosa and Holmes Counties)	Base SQG Grant for \$18,000
Leon County (HW354)	Base SQG Grant for \$30,000
Dade County (HW351)	Expanded SQG Grant for \$18,000
<b>Total</b>	<b>\$120,000.00</b>

FY97/98

Nassau County (HW381)	Base SQG Grant for \$6,000
Desoto County	Base SQG Grant for \$6,000
Washington County (HW380)	Base SQG Grant for \$6,000
Charlotte County (HW382)	Base SQG Grant for \$6,000
North Central Florida RPC (HW327)(for Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, and Union Counties)	Base SQG Grant for \$54,000
West Florida RPC (HW352)(for Santa Rosa, Okaloosa and Holmes Counties)	Base SQG Grant for \$18,000
Dade County (HW351)	Expanded SQG Grant for \$18,000
Escambia County	Expanded SQG Grant for \$25,000
<b>Total</b>	<b>\$139,000.00</b>

FY98/99

Nassau County (HW381)	Base SQG Grant for \$6,000
Desoto County	Base SQG Grant for \$6,000
Washington County (HW380)	Base SQG Grant for \$6,000
Hernando County (HW394)	Base SQG Grant for \$6,000
Flagler County (HW410)	Base SQG Grant for \$6,000
West Florida RPC (HW352)(for Santa Rosa, Okaloosa and Holmes Counties)	Base SQG Grant for \$18,000
Charlotte County (HW382)	Base SQG Grant for \$6,000
North Central Florida RPC (HW327)(for Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette,	Base SQG Grant for \$49,700

## Appendix 1: SQG Grant Program Funding Summary

Madison, Suwannee, and Union Counties)	
Pasco County (HW393)	Expanded SQG Grant for \$50,000
Dade County (HW351)	Expanded SQG Grant for \$23,400
Escambia County	Expanded SQG Grant for \$25,000
<b>Total</b>	<b>\$202,100.00</b>

FY99/2000

Nassau County (HW381)	Base SQG Grant for \$6,000
Desoto County	Base SQG Grant for \$6,000
Hernando County (HW394)	Base SQG Grant for \$6,000
Flagler County (HW410)	Base SQG Grant for \$6,000
West Florida RPC (HW352)(for Santa Rosa, Okaloosa, Washington and Holmes Counties)	Base SQG Grant for \$24,000
Charlotte County (HW382)	Base SQG Grant for \$6,000
North Central Florida RPC (HW327)(for Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, and Union Counties)	Base SQG Grant for \$54,000
Putnam County	Base SQG Grant for \$6,000
Broward County	Expanded SQG Grant for \$25,000
Southwest Florida RPC (HWxxx)(for Hendry and Glades Counties)	Base SQG Grant for \$12,000
Bay County (HWxxx)	Base SQG Grant for \$6,000
<b>Total</b>	<b>\$157,000.00</b>

## Appendix 2: Summary of SQG Program Verifications (FY98/99)

County	Assessment Roll	Verification	% Verified
ALACHUA	1188	679	57.2
BAKER	0	0	0
BAY	0	0	0
BRADFORD	173	35	20.2
BREVARD	4874	183	3.8
BROWARD	5097	1101	21.6
CALHOUN	87	18	20.7
CHARLOTTE	1200	34	2.8
CITRUS	1230	299	24.3
CLAY	497	45	9.1
COLLIER	5102	867	17
COLUMBIA	394	83	21.1
DADE	7061	1804	25.5
DESOTO	283	62	21.9
DIXIE	131	27	20.6
DUVAL	2884	422	14.6
ESCAMBIA	887	105	11.8
FLAGLER	37	11	29.7
FRANKLIN	54	11	20.4
GADSDEN	247	42	17
GILCHRIST	101	21	20.8
GLADES	0	0	0
GULF	67	11	16.4
HAMILTON	94	19	20.2
HARDEE	380	83	21.8
HENDRY	142	64	45.1
HERNANDO	320	36	11.3
HIGHLANDS	1039	239	23
HILLSBOROUGH	14196	2914	20.5
HOLMES	151	34	22.5
INDIAN RIVER	473	291	61.5
JACKSON	152	31	20.4
JEFFERSON	79	16	20.3
LAFAYETTE	75	15	20.0
LAKE	772	84	10.9
LEE	13236	4181	31.6
LEON	1277	290	22.7
LEVY	239	48	20.1
LIBERTY	23	5	21.7
MADISON	158	32	20.3
MANATEE	2285	459	20.1
MARION	1413	315	22.3
MARTIN	1688	347	20.6
MONROE	893	180	20.2
NASSAU	94	24	25.5
OKALOOSA	1463	129	8.8
OKEECHOBEE	437	109	24.9
ORANGE	6874	1563	22.7

## Appendix 2: Summary of SQG Program Verifications (FY98/99)

County	Assessment Roll	Verification	% Verified
OSCEOLA	714	454	63.6
PALM BEACH	0	0	0.0
PASCO	892	172	19.3
PINELLAS	0	0	0.0
POLK	1765	146	8.3
PUTNAM	0	0	0
ST JOHNS	0	0	0
ST LUCIE	562	113	20.1
SANTA ROSA	1205	51	0
SARASOTA	5069	215	4.2
SEMINOLE	3317	666	20.1
SUMTER	245	64	26.1
SUWANNEE	292	59	20.2
TAYLOR	0	0	0
UNION	66	14	21.2
VOLUSIA	1390	207	14.9
WAKULLA	56	12	21.4
WALTON	0	0	0
WASHINGTON	0	0	0
<b>Total</b>	<b>95117</b>	<b>19541</b>	<b>20.5%</b>

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## SMALL QUANTITY GENERATOR WASTE TOTALS REPORT 1998-1999 SUMMARY

Verified 07/01/1998-12/31/1999/Thru Lbs=0000026400

Waste Generation Summary - Facilities Generating Less Than 26400 Lbs

Code and Description	Facilities	Pounds	Percent
(EX) >>NO OLD WASTE CODE FOUND	17	78,939	0.0%
(HW) >>NO OLD WASTE CODE FOUND	16	30,210	0.0%
A0 (HW) TOXIC PESTICIDE WASTES D,U LIST	4	194	0.0%
A1 (HW) ACUTE PESTICIDE WASTES P LIST	1	5,680	0.0%
B0 (HW) PESTICIDE WASTE MIXTURES/WATERS	14	22,531	0.0%
C0 (EX) EMPTY PESTICIDE CONTAINERS D,U LIST	45	100,527	0.0%
C1 (EX) EMPTY PESTICIDE CONTAINER 2.5 GAL SIZE	13	1,061	0.0%
D0 (HW) WASTEWATERS WITH TC ORGANICS - E.G. BENZENE	53	279,668	0.0%
D1 (HW) CONDENSATE H2O FROM DRY CLEANERS	58	205,653	0.0%
D2 (EX) PETROLEUM CONTACT WATERS- PCW	13	142,839	0.0%
D2 (HW) PETROLEUM CONTACT WATERS- PCW	21	35,072	0.0%
E0 (HW) SLUDGES & SOLIDS WITH TC ORGANICS -ALSO SOILS	17	23,322	0.0%
F0 (HW) DUST AND SOLIDS WITH HEAVY METALS	44	36,420	0.0%
F1 (EX) SOLIDS - SCRAP METALS, SOLDER, CIRCUIT BOARDS	1	50	0.0%
F1 (HW) SOLIDS - SCRAP METALS, SOLDER, CIRCUIT BOARDS	3	1,690	0.0%
F2 (HW) FILTERS WITH HEAVY METALS (NOT S1,K0,Y2,Y6)	6	515	0.0%
G0 (HW) WASH, RINSE & OTHER WASTEWATER W HEAVY METALS	148	1,348,235	0.4%
G1 (EX) SPENT ANTI-FREEZE W/ LOW LEAD (< 5 PPM)	993	4,565,857	1.4%
G1 (HW) SPENT ANTI-FREEZE W/ LOW LEAD (< 5 PPM)	25	21,329	0.0%
G2 (EX) SPENT ANTI-FREEZE WITH LEAD/METALS (>= 5ppm)	26	60,329	0.0%
G2 (HW) SPENT ANTI-FREEZE WITH LEAD/METALS (>= 5ppm)	30	54,295	0.0%
H0 (HW) SLUDGES WITH HEAVY METALS	19	184,316	0.0%
I0 (HW) WASTE INK-FLASHPOINT<140 F AND HEAVY METALS	20	26,188	0.0%
I1 (HW) WASTE INKS - FLASHPOINT < 140 F	22	22,010	0.0%
I2 (HW) WASTE INKS - CONTAINS HEAVY METALS	5	10,622	0.0%
J0 (HW) IGNITABLE PAINT WASTES - FLASHPOINT < 140 F	309	442,663	0.1%
J1 (HW) USED PAINT THINNER	394	963,200	0.3%
K0 (HW) OTHER PAINT WASTES W/HEAVY METALS	41	73,432	0.0%
K1 (HW) PAINT STRIPPER- > 10 % METHYLENE CHLORIDE	14	24,144	0.0%
L0 (HW) SPENT SOLVENTS (MIX/OTHER)	162	236,328	0.0%
L1 (HW) HALOGENATED SOLVENTS-CONTAINS CHLORINE OR FLU	30	19,955	0.0%
L2 (HW) NON-HALOGENATED SOLVENTS-E.G. MINERAL SPIRITS	160	168,345	0.0%
L3 (HW) MINERAL SPIRITS-PARTS CLEANER	1,653	2,480,156	0.7%
L4 (HW) SPENT ACETONE	45	107,009	0.0%
L5 (HW) SPENT METHYL ETHYL KETONE(MEK)	8	12,159	0.0%
L6 (HW) 1,1,1 TRICHLOROETHANE OR METHYLENE CHLORIDE	20	11,994	0.0%
L7 (HW) SPENT TRICHLOROETHYLENE	3	6,368	0.0%
L8 (HW) SPENT FREON-113	90	26,025	0.0%
L9 (HW) SPENT IMMERSION CLEANER - HALOGENATED	26	22,749	0.0%
M0 (HW) SOLVENT DISTILLATION BOTTOMS	5	9,777	0.0%
M1 (HW) DIST. BOTTOMS-HALOGENATED	7	7,120	0.0%
M2 (HW) DIST. BOTTOMS-NON-HALOGENATED	5	2,951	0.0%
M3 (HW) PERCHLOROETHYLENE STILL BOTTOMS (DRY CLEAN)	148	287,223	0.0%
M4 (EX) ABSORBENTS WITH HALOGENATED SOLVENTS	34	16,506	0.0%
M4 (HW) ABSORBENTS WITH HALOGENATED SOLVENTS	33	6,815	0.0%
M5 (EX) ABSORBENTS WITH LISTED NONHALOGENATED SOLVENT	183	192,275	0.0%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Generation Summary - Facilities Generating Less Than 26400 Lbs

Code and Description	Facilities	Pounds	Percent
M6 (HW) ABSORBENTS WITH LISTED NONHALOGENATED SOLVENT	116	48,036	0.0%
M6 (EX) ABSORBENTS CONTAMINATED W/OIL	1,045	3,346,953	1.0%
M6 (HW) ABSORBENTS CONTAMINATED W/OIL	64	53,426	0.0%
M7 (EX) ABSORBENTS W/IGNITABLE ONLY SOLVENT	263	34,626	0.0%
M7 (HW) ABSORBENTS W/IGNITABLE ONLY SOLVENT	159	21,003	0.0%
N0 (HW) DRY CLEANING FILTERS	169	199,777	0.0%
N1 (HW) USED PERCHLOROETHYLENE	33	201,607	0.0%
O0 (HW) REACTIVE WASTES - WITH CYANIDES OR SULFIDES	4	86	0.0%
O1 (HW) CYANIDE WASTES	3	255	0.0%
P0 (EX) ACIDIC OR ALKALINE WASTES - PH<2 OR PH>12.5	6	24,679	0.0%
P0 (HW) ACIDIC OR ALKALINE WASTES - PH<2 OR PH>12.5	85	192,781	0.0%
Q0 (HW) SPENT PLATING WASTES-FROM METAL-PLATING, ETC.	17	56,829	0.0%
R0 (EX) DISCARDED GASOLINE, DIESEL OR OTHER FUELS	57	81,381	0.0%
R0 (HW) DISCARDED GASOLINE, DIESEL OR OTHER FUELS	45	27,888	0.0%
S0 (EX) PHOTOGRAPHIC WSTES-PRIM.FIXANT SOLUTION	163	761,973	0.2%
S0 (HW) PHOTOGRAPHIC WSTES-PRIM.FIXANT SOLUTION	473	1,285,359	0.4%
S1 (EX) PHOTOGRAPHIC SILVER RECOVERY CANNISTER	14	1,022	0.0%
S1 (HW) PHOTOGRAPHIC SILVER RECOVERY CANNISTER	55	60,080	0.0%
S2 (EX) NON-HAZ EFFLUENT FROM PHOTO. SILVER RECOVERY	22	153,914	0.0%
T0 (HW) OTHER IGNITABLE WASTES - NOT I0,J0,L0 OR R0	48	133,706	0.0%
U0 (HW) WOOD-PRESERVING WASTES	2	5,315	0.0%
V0 (HW) DISCARDED UNUSED OR OFF-SPEC COMMERCIAL CHEM	21	30,911	0.0%
V2 (HW) ACUTE CHEMICAL SPILL CLEANUP - P LIST	1	220	0.0%
W0 (EX) LEAD-ACID BATTERIES	1,948	88,358,304	28.0%
W0 (HW) LEAD-ACID BATTERIES	213	835,677	0.2%
W1 (HW) MERCURY OXIDE BATTERIES	11	1,603	0.0%
W2 (EX) RECHARGEABLE BATTERIES: Pb-ACID OR NiCADs	6	26,202	0.0%
W2 (HW) RECHARGEABLE BATTERIES: Pb-ACID OR NiCADs	8	3,028	0.0%
W3 (EX) FLUORESCENT LAMPS	226	149,320	0.0%
W3 (HW) FLUORESCENT LAMPS	403	36,733	0.0%
W4 (EX) MERCURY CONTAINING DEVICES (THERMOSTATS,ETC.)	8	70	0.0%
W4 (HW) MERCURY CONTAINING DEVICES (THERMOSTATS,ETC.)	13	289	0.0%
Y0 (EX) USED OILS & OTHER LUBRICANTS	2,667	130,512,186	41.4%
Y0 (HW) USED OILS & OTHER LUBRICANTS	575	2,569,002	0.8%
Y1 (EX) METALWORKING (CUTTING) OILS	8	3,250	0.0%
Y1 (HW) METALWORKING (CUTTING) OILS	2	1,418	0.0%
Y2 (EX) CRUSHED OIL FILTERS	249	40,907,852	12.9%
Y2 (HW) CRUSHED OIL FILTERS	67	85,674	0.0%
Y3 (EX) HYDRAULIC OIL	44	210,020	0.0%
Y3 (HW) HYDRAULIC OIL	3	205	0.0%
Y4 (HW) USED OIL CONTAMINATED W/ HALOGENATED HAZ WAST	7	23,374	0.0%
Y5 (EX) UNCRUSHED OIL FILTERS	1,448	31,644,097	10.0%
Y5 (HW) UNCRUSHED OIL FILTERS	341	239,177	0.0%
Y6 (EX) NON-HAZ (HIGH FLASH/AQUEOUS) SOLVENT	5	901	0.0%
Z1 (HW) CARBURETOR CLEANER	66	22,773	0.0%
Z2 (HW) BENZENE, TOLUENE, OR XYLENE - SPENT	23	61,315	0.0%
<b>Total for all Wastes:</b>		<b>314,792,566</b>	

The Facilities count is actually a count of Waste Streams, which may be slightly greater in some cases.

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

<b>SMALL QUANTITY GENERATOR WASTE DISPOSAL TOTALS</b>				
<b>1998-1999 SUMMARY</b>				
<b>Verified 07/01/1998-12/31/1999/Thru Lbs=0000026400</b>				
Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds				
Code and Description	Facilities	Pounds	Percent	
Disposal Codes and Descriptions				
<b>(EX) &gt;&gt;NO OLD WASTE CODE FOUND</b>				
EC COMMERCIAL LAUNDRY (RAGS)	2	22,704	28.7%	
ER EXEMPT RECYCLE (BATTERY, ETC)	4	19,858	25.1%	
EU USED OIL RECYCLING	7	15,935	20.1%	
HH HW RCRA TREATMENT	1	200	0.2%	
HR RCRA REUSE/RECYCLE	3	20,242	25.6%	
		Total Pounds For This Waste Code:		78,939
<b>(HW) &gt;&gt;NO OLD WASTE CODE FOUND</b>				
EC COMMERCIAL LAUNDRY (RAGS)	1	1,584	5.2%	
ER EXEMPT RECYCLE (BATTERY, ETC)	1	1	0.0%	
HH HW RCRA TREATMENT	8	26,044	86.2%	
HO CESQG HW COLLECTION	3	147	0.4%	
HR RCRA REUSE/RECYCLE	2	2,422	8.0%	
OR ONSITE RECYCLE/REUSE	1	12	0.0%	
		Total Pounds For This Waste Code:		30,210
<b>A0 (HW) TOXIC PESTICIDE WASTES D,U LIST</b>				
HH HW RCRA TREATMENT	3	83	42.7%	
SL SOLID WASTE LINED LANDFILL	1	111	57.2%	
		Total Pounds For This Waste Code:		194
<b>A1 (HW) ACUTE PESTICIDE WASTES P LIST</b>				
TO WW TREATED OTHER DISPOSAL	1	5,680	100.0%	
<b>B0 (HW) PESTICIDE WASTE MIXTURES/WATERS</b>				
DP DISPOSAL TO SEWER	4	4,553	20.2%	
DT DISPOSAL TO SEPTIC TANK	2	4,570	20.2%	
HH HW RCRA TREATMENT	2	3,837	17.0%	
HR RCRA REUSE/RECYCLE	1	901	3.9%	
OR ONSITE RECYCLE/REUSE	3	8,240	36.5%	
SL SOLID WASTE LINED LANDFILL	1	429	1.9%	
TE WW TREATMENT TO EVAPORATION	1	1	0.0%	
		Total Pounds For This Waste Code:		22,531
<b>C0 (EX) EMPTY PESTICIDE CONTAINERS D,U LIST</b>				
BO OPEN BURN	2	260	0.2%	
HH HW RCRA TREATMENT	3	54	0.0%	
HR RCRA REUSE/RECYCLE	4	417	0.4%	
SL SOLID WASTE LINED LANDFILL	34	99,769	99.2%	
TO WW TREATED OTHER DISPOSAL	1	15	0.0%	
		Total Pounds For This Waste Code:		100,527
<b>C1 (EX) EMPTY PESTICIDE CONTAINER 2.5 GAL SIZE</b>				
BO OPEN BURN	1	300	28.2%	
DD ONSITE LAND DISPOSAL	1	1	0.0%	
SL SOLID WASTE LINED LANDFILL	11	760	71.6%	
		Total Pounds For This Waste Code:		1,061
<b>D0 (HW) WASTEWATERS WITH TC ORGANICS - E.G. BENZENE</b>				
DP DISPOSAL TO SEWER	1	25	0.0%	

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description		Facilities	Pounds	Percent
Disposal Codes and Descriptions				
DS	DISPOSAL TO SURFACE WATER	1	200	0.0%
EU	USED OIL RECYCLING	37	249,994	89.3%
HH	HW RCRA TREATMENT	14	29,449	10.5%
Total Pounds For This Waste Code:			279,668	
<b>D1 (HW) CONDENSATE H2O FROM DRY CLEANERS</b>				
BE	EVAPORATION ONLY	6	10,626	5.1%
DP	DISPOSAL TO SEWER	3	4,604	2.2%
EU	USED OIL RECYCLING	1	1,001	0.4%
HH	HW RCRA TREATMENT	40	154,198	74.9%
OO	OTHER ONSITE TDR	2	19,516	9.4%
TE	WW TREATMENT TO EVAPORATION	2	10,300	5.0%
TO	WW TREATED OTHER DISPOSAL	2	4,206	2.0%
TP	WW TREATED TO POTW	1	1,201	0.5%
Total Pounds For This Waste Code:			205,653	
<b>D2 (EX) PETROLEUM CONTACT WATERS- PCW</b>				
EU	USED OIL RECYCLING	3	3,336	2.3%
HH	HW RCRA TREATMENT	4	93,391	65.3%
HR	RCRA REUSE/RECYCLE	6	46,112	32.2%
Total Pounds For This Waste Code:			142,839	
<b>D2 (HW) PETROLEUM CONTACT WATERS- PCW</b>				
EU	USED OIL RECYCLING	10	22,646	64.5%
HH	HW RCRA TREATMENT	11	12,426	35.4%
Total Pounds For This Waste Code:			35,072	
<b>E0 (HW) SLUDGES &amp; SOLIDS WITH TC ORGANICS -ALSO SOILS</b>				
EU	USED OIL RECYCLING	6	218	0.9%
HH	HW RCRA TREATMENT	8	21,882	93.8%
OO	OTHER ONSITE TDR	1	1,200	5.1%
SL	SOLID WASTE LINED LANDFILL	2	22	0.0%
Total Pounds For This Waste Code:			23,322	
<b>F0 (HW) DUST AND SOLIDS WITH HEAVY METALS</b>				
ER	EXEMPT RECYCLE (BATTERY, ETC)	6	522	1.4%
HH	HW RCRA TREATMENT	22	29,073	79.8%
HR	RCRA REUSE/RECYCLE	12	6,716	18.4%
OO	OTHER ONSITE TDR	1	5	0.0%
OR	ONSITE RECYCLE/REUSE	1	24	0.0%
SL	SOLID WASTE LINED LANDFILL	2	80	0.2%
Total Pounds For This Waste Code:			36,420	
<b>F1 (EX) SOLIDS - SCRAP METALS, SOLDER, CIRCUIT BOARDS</b>				
HR	RCRA REUSE/RECYCLE	1	50	100.0%
<b>F1 (HW) SOLIDS - SCRAP METALS, SOLDER, CIRCUIT BOARDS</b>				
ER	EXEMPT RECYCLE (BATTERY, ETC)	1	30	1.7%
HR	RCRA REUSE/RECYCLE	1	1,600	94.6%
SF	SOLID WASTE INCINERATOR (WTE)	1	60	3.5%
Total Pounds For This Waste Code:			1,690	
<b>F2 (HW) FILTERS WITH HEAVY METALS (NOT S1,K0,Y2,Y5)</b>				
HH	HW RCRA TREATMENT	1	264	51.2%
HQ	QUESTIONABLE HW MGMT	3	136	26.4%
SL	SOLID WASTE LINED LANDFILL	2	115	22.3%
Total Pounds For This Waste Code:			515	

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
Disposal Codes and Descriptions			
<b>G0 (HW) WASH, RINSE &amp; OTHER WASTEWATER W HEAVY METALS</b>			
DP DISPOSAL TO SEWER	3	93,694	6.9%
DS DISPOSAL TO SURFACE WATER	1	1,001	0.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	1	25,040	1.8%
EU USED OIL RECYCLING	88	973,988	72.2%
HH HW RCRA TREATMENT	29	140,416	10.4%
HQ QUESTIONABLE HW MGMT	3	12,519	0.9%
HR RCRA REUSE/RECYCLE	6	42,529	3.1%
OR ONSITE RECYCLE/REUSE	7	56,408	4.1%
SL SOLID WASTE LINED LANDFILL	1	5	0.0%
Total Pounds For This Waste Code:		1,348,235	
<b>G1 (EX) SPENT ANTI-FREEZE W/ LOW LEAD (&lt; 5 PPM)</b>			
AN ACCUMULATION - NO MANAGEMENT PLAN	1	100	0.0%
DD ONSITE LAND DISPOSAL	1	5,504	0.1%
DP DISPOSAL TO SEWER	3	109,254	2.3%
DS DISPOSAL TO SURFACE WATER	1	1	0.0%
EE UNIVERSAL WASTE (LAMP, ETC)	1	1,501	0.0%
EU USED OIL RECYCLING	234	1,719,325	37.6%
HH HW RCRA TREATMENT	204	732,848	16.0%
HO CESQG HW COLLECTION	2	1,109	0.0%
HQ QUESTIONABLE HW MGMT	2	729	0.0%
HR RCRA REUSE/RECYCLE	241	743,907	16.2%
OR ONSITE RECYCLE/REUSE	257	1,022,612	22.3%
SL SOLID WASTE LINED LANDFILL	4	924	0.0%
TE WW TREATMENT TO EVAPORATION	1	209	0.0%
TO WW TREATED OTHER DISPOSAL	1	50,080	1.0%
TP WW TREATED TO POTW	1	600	0.0%
Total Pounds For This Waste Code:		4,565,857	
<b>G1 (HW) SPENT ANTI-FREEZE W/ LOW LEAD (&lt; 5 PPM)</b>			
DS DISPOSAL TO SURFACE WATER	1	83	0.3%
EU USED OIL RECYCLING	2	567	2.6%
HR RCRA REUSE/RECYCLE	11	6,863	32.1%
OR ONSITE RECYCLE/REUSE	11	13,816	64.7%
Total Pounds For This Waste Code:		21,329	
<b>G2 (EX) SPENT ANTI-FREEZE WITH LEAD/METALS (&gt;= 5ppm)</b>			
HR RCRA REUSE/RECYCLE	20	51,996	86.1%
OR ONSITE RECYCLE/REUSE	5	7,874	13.0%
Total Pounds For This Waste Code:		60,329	
<b>G2 (HW) SPENT ANTI-FREEZE WITH LEAD/METALS (&gt;= 5ppm)</b>			
EU USED OIL RECYCLING	10	14,756	27.1%
HH HW RCRA TREATMENT	13	31,929	58.8%
HR RCRA REUSE/RECYCLE	7	7,610	14.0%
Total Pounds For This Waste Code:		54,295	
<b>H0 (HW) SLUDGES WITH HEAVY METALS</b>			
DT DISPOSAL TO SEPTIC TANK	1	5,000	2.7%
ER EXEMPT RECYCLE (BATTERY, ETC)	1	200	0.1%
EU USED OIL RECYCLING	3	360	0.1%
HH HW RCRA TREATMENT	12	177,056	96.0%
HQ QUESTIONABLE HW MGMT	1	600	0.3%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description Disposal Codes and Descriptions	Facilities	Pounds	Percent
Total Pounds For This Waste Code:		184,316	
<b>10 (HW) WASTE INK-FLASHPOINT&lt;140 F AND HEAVY METALS</b>			
HH HW RCRA TREATMENT	15	25,748	98.3%
HO CESQG HW COLLECTION	1	6	0.0%
HQ QUESTIONABLE HW MGMT	2	215	0.8%
OO OTHER ONSITE TDR	1	9	0.0%
SL SOLID WASTE LINED LANDFILL	1	210	0.8%
Total Pounds For This Waste Code:		26,188	
<b>11 (HW) WASTE INKS - FLASHPOINT &lt; 140 F</b>			
HH HW RCRA TREATMENT	16	16,550	75.1%
HR RCRA REUSE/RECYCLE	3	4,824	21.9%
OO OTHER ONSITE TDR	1	4	0.0%
SL SOLID WASTE LINED LANDFILL	1	2	0.0%
Total Pounds For This Waste Code:		22,010	
<b>12 (HW) WASTE INKS - CONTAINS HEAVY METALS</b>			
HH HW RCRA TREATMENT	5	10,622	100.0%
<b>J0 (HW) IGNITABLE PAINT WASTES - FLASHPOINT &lt; 140 F</b>			
BE EVAPORATION ONLY	2	55	0.0%
BO OPEN BURN	1	94	0.0%
EU USED OIL RECYCLING	4	3,053	0.6%
HH HW RCRA TREATMENT	225	407,402	92.0%
HO CESQG HW COLLECTION	21	3,622	0.8%
HQ QUESTIONABLE HW MGMT	7	13,282	3.0%
HR RCRA REUSE/RECYCLE	12	7,777	1.7%
OO OTHER ONSITE TDR	11	979	0.2%
OP RCRA PERMITTED TREATMENT	1	432	0.0%
OR ONSITE RECYCLE/REUSE	5	534	0.1%
SL SOLID WASTE LINED LANDFILL	8	762	0.1%
TE WW TREATMENT TO EVAPORATION	3	97	0.0%
Total Pounds For This Waste Code:		442,663	
<b>J1 (HW) USED PAINT THINNER</b>			
BE EVAPORATION ONLY	2	294	0.0%
BF HW FUEL BURN/BLEND	1	7	0.0%
BO OPEN BURN	1	350	0.0%
DD ONSITE LAND DISPOSAL	1	11,760	1.2%
DP DISPOSAL TO SEWER	1	21	0.0%
DS DISPOSAL TO SURFACE WATER	1	35	0.0%
EU USED OIL RECYCLING	11	11,678	1.2%
HH HW RCRA TREATMENT	301	872,978	90.6%
HO CESQG HW COLLECTION	3	996	0.1%
HQ QUESTIONABLE HW MGMT	9	6,189	0.6%
HR RCRA REUSE/RECYCLE	10	8,512	0.8%
OO OTHER ONSITE TDR	3	1,960	0.2%
OP RCRA PERMITTED TREATMENT	1	35	0.0%
OR ONSITE RECYCLE/REUSE	18	39,862	4.1%
SL SOLID WASTE LINED LANDFILL	16	5,264	0.5%
TE WW TREATMENT TO EVAPORATION	11	1,243	0.1%
Total Pounds For This Waste Code:		963,200	
<b>K0 (HW) OTHER PAINT WASTES W/HEAVY METALS</b>			

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
DS DISPOSAL TO SURFACE WATER	1	150	0.2%
HH HW RCRA TREATMENT	18	66,307	90.2%
HR RCRA REUSE/RECYCLE	2	430	0.5%
OP RCRA PERMITTED TREATMENT	1	492	0.6%
SF SOLID WASTE INCINERATOR (WTE)	1	1	0.0%
SL SOLID WASTE LINED LANDFILL	8	1,582	2.1%
Total Pounds For This Waste Code:		73,432	
<b>K1 (HW) PAINT STRIPPER- &gt; 10 % METHYLENE CHLORIDE</b>			
HH HW RCRA TREATMENT	10	23,542	97.5%
HQ QUESTIONABLE HW MGMT	1	322	1.3%
SL SOLID WASTE LINED LANDFILL	1	18	0.0%
TE WW TREATMENT TO EVAPORATION	2	262	1.0%
Total Pounds For This Waste Code:		24,144	
<b>L0 (HW) SPENT SOLVENTS (MIX/OTHER)</b>			
BE EVAPORATION ONLY	1	10,848	4.5%
DP DISPOSAL TO SEWER	3	1,684	0.7%
EC COMMERCIAL LAUNDRY (RAGS)	2	566	0.2%
EU USED OIL RECYCLING	18	7,883	3.3%
HH HW RCRA TREATMENT	103	169,768	71.8%
HO CESQG HW COLLECTION	2	407	0.1%
HQ QUESTIONABLE HW MGMT	4	648	0.2%
HR RCRA REUSE/RECYCLE	8	22,553	9.5%
OO OTHER ONSITE TDR	2	587	0.2%
OR ONSITE RECYCLE/REUSE	6	13,589	5.7%
SL SOLID WASTE LINED LANDFILL	1	1	0.0%
TE WW TREATMENT TO EVAPORATION	10	6,755	2.8%
Total Pounds For This Waste Code:		236,328	
<b>L1 (HW) HALOGENATED SOLVENTS-CONTAINS CHLORINE OR FLU</b>			
HH HW RCRA TREATMENT	17	16,054	80.4%
HQ QUESTIONABLE HW MGMT	1	1,546	7.7%
HR RCRA REUSE/RECYCLE	5	840	4.2%
OR ONSITE RECYCLE/REUSE	4	1,132	5.6%
SL SOLID WASTE LINED LANDFILL	1	11	0.0%
TE WW TREATMENT TO EVAPORATION	2	372	1.8%
Total Pounds For This Waste Code:		19,955	
<b>L2 (HW) NON-HALOGENATED SOLVENTS-E.G. MINERAL SPIRITS</b>			
BE EVAPORATION ONLY	3	229	0.1%
BF HW FUEL BURN/BLEND	1	370	0.2%
DP DISPOSAL TO SEWER	1	27	0.0%
EU USED OIL RECYCLING	22	12,834	7.6%
HH HW RCRA TREATMENT	113	141,407	83.9%
HR RCRA REUSE/RECYCLE	5	1,709	1.0%
OO OTHER ONSITE TDR	1	20	0.0%
OR ONSITE RECYCLE/REUSE	5	11,354	6.7%
SL SOLID WASTE LINED LANDFILL	3	85	0.0%
TE WW TREATMENT TO EVAPORATION	4	269	0.1%
Total Pounds For This Waste Code:		168,345	
<b>L3 (HW) MINERAL SPIRITS-PARTS CLEANER</b>			
BE EVAPORATION ONLY	4	1,351	0.0%
BF HW FUEL BURN/BLEND	1	420	0.0%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description		Facilities	Pounds	Percent
Disposal Codes and Descriptions				
DD	ONSITE LAND DISPOSAL	1	168	0.0%
EC	COMMERCIAL LAUNDRY (RAGS)	1	280	0.0%
EU	USED OIL RECYCLING	143	125,680	5.0%
HH	HW RCRA TREATMENT	1,317	2,206,864	88.9%
HO	CESQG HW COLLECTION	3	326	0.0%
HQ	QUESTIONABLE HW MGMT	2	1,344	0.0%
HR	RCRA REUSE/RECYCLE	95	68,335	2.7%
OO	OTHER ONSITE TDR	2	420	0.0%
OR	ONSITE RECYCLE/REUSE	22	21,800	0.8%
SL	SOLID WASTE LINED LANDFILL	2	175	0.0%
TE	WW TREATMENT TO EVAPORATION	9	1,675	0.0%
Total Pounds For This Waste Code:			2,480,156	
<b>L4 (HW) SPENT ACETONE</b>				
BE	EVAPORATION ONLY	2	139	0.1%
HH	HW RCRA TREATMENT	22	83,172	77.7%
HR	RCRA REUSE/RECYCLE	3	13,338	12.4%
OO	OTHER ONSITE TDR	2	4,836	4.5%
OR	ONSITE RECYCLE/REUSE	3	4,744	4.4%
SF	SOLID WASTE INCINERATOR (WTE)	1	395	0.3%
SL	SOLID WASTE LINED LANDFILL	3	132	0.1%
TE	WW TREATMENT TO EVAPORATION	6	141	0.1%
TO	WW TREATED OTHER DISPOSAL	1	13	0.0%
Total Pounds For This Waste Code:			107,009	
<b>L5 (HW) SPENT METHYL ETHYL KETONE(MEK)</b>				
HH	HW RCRA TREATMENT	4	2,926	24.0%
OR	ONSITE RECYCLE/REUSE	2	9,159	75.3%
SL	SOLID WASTE LINED LANDFILL	1	40	0.3%
TE	WW TREATMENT TO EVAPORATION	1	34	0.2%
Total Pounds For This Waste Code:			12,159	
<b>L6 (HW) 1,1,1 TRICHLOROETHANE OR METHYLENE CHLORIDE</b>				
EU	USED OIL RECYCLING	1	659	5.4%
HH	HW RCRA TREATMENT	14	10,727	89.4%
HQ	QUESTIONABLE HW MGMT	1	99	0.8%
OO	OTHER ONSITE TDR	1	22	0.1%
SF	SOLID WASTE INCINERATOR (WTE)	1	33	0.2%
SL	SOLID WASTE LINED LANDFILL	1	432	3.6%
TE	WW TREATMENT TO EVAPORATION	1	22	0.1%
Total Pounds For This Waste Code:			11,994	
<b>L7 (HW) SPENT TRICHLOROETHYLENE</b>				
HH	HW RCRA TREATMENT	3	6,368	100.0%
<b>L8 (HW) SPENT FREON-113</b>				
HH	HW RCRA TREATMENT	3	1,315	5.0%
HR	RCRA REUSE/RECYCLE	27	10,309	39.6%
OR	ONSITE RECYCLE/REUSE	59	14,341	55.1%
Total Pounds For This Waste Code:			26,025	
<b>L9 (HW) SPENT IMMERSION CLEANER - HALOGENATED</b>				
HH	HW RCRA TREATMENT	19	14,425	63.4%
Total Pounds For This Waste Code:			22,749	
<b>M0 (HW) SOLVENT DISTILLATION BOTTOMS</b>				

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
EU USED OIL RECYCLING	1	105	1.0%
HH HW RCRA TREATMENT	4	9,672	98.9%
Total Pounds For This Waste Code:		9,777	
<b>M1 (HW) DIST. BOTTOMS-HALOGENATED</b>			
EC COMMERCIAL LAUNDRY (RAGS)	1	21	0.2%
HH HW RCRA TREATMENT	6	7,099	99.7%
Total Pounds For This Waste Code:		7,120	
<b>M2 (HW) DIST. BOTTOMS-NON-HALOGENATED</b>			
EU USED OIL RECYCLING	1	376	12.7%
HH HW RCRA TREATMENT	3	2,500	84.7%
HR RCRA REUSE/RECYCLE	1	75	2.5%
Total Pounds For This Waste Code:		2,951	
<b>M3 (HW) PERCHLOROETHYLENE STILL BOTTOMS (DRY CLEAN)</b>			
EC COMMERCIAL LAUNDRY (RAGS)	1	4,604	1.6%
HH HW RCRA TREATMENT	142	277,424	96.5%
HR RCRA REUSE/RECYCLE	1	5	0.0%
SF SOLID WASTE INCINERATOR (WTE)	1	11	0.0%
Total Pounds For This Waste Code:		287,223	
<b>M4 (EX) ABSORBENTS WITH HALOGENATED SOLVENTS</b>			
EC COMMERCIAL LAUNDRY (RAGS)	30	15,583	94.4%
Total Pounds For This Waste Code:		16,506	
<b>M4 (HW) ABSORBENTS WITH HALOGENATED SOLVENTS</b>			
BO OPEN BURN	1	78	1.1%
EC COMMERCIAL LAUNDRY (RAGS)	2	1,800	26.4%
HH HW RCRA TREATMENT	7	457	6.7%
HR RCRA REUSE/RECYCLE	4	96	1.4%
SF SOLID WASTE INCINERATOR (WTE)	8	314	4.6%
SL SOLID WASTE LINED LANDFILL	3	200	2.9%
Total Pounds For This Waste Code:		6,815	
<b>M5 (EX) ABSORBENTS WITH LISTED NONHALOGENATED SOLVENT</b>			
EC COMMERCIAL LAUNDRY (RAGS)	144	174,329	90.6%
Total Pounds For This Waste Code:		192,275	
<b>M5 (HW) ABSORBENTS WITH LISTED NONHALOGENATED SOLVENT</b>			
DP DISPOSAL TO SEWER	5	653	1.3%
DT DISPOSAL TO SEPTIC TANK	2	33	0.0%
EC COMMERCIAL LAUNDRY (RAGS)	21	23,064	48.0%
EU USED OIL RECYCLING	10	3,484	7.2%
HH HW RCRA TREATMENT	16	9,803	20.4%
HO CESQG HW COLLECTION	1	240	0.4%
HR RCRA REUSE/RECYCLE	4	2,352	4.8%
OR ONSITE RECYCLE/REUSE	1	13	0.0%
SF SOLID WASTE INCINERATOR (WTE)	18	2,909	6.0%
SL SOLID WASTE LINED LANDFILL	24	2,903	6.0%
Total Pounds For This Waste Code:		48,036	
<b>M6 (EX) ABSORBENTS CONTAMINATED W/OIL</b>			
BO OPEN BURN	2	120	0.0%
DP DISPOSAL TO SEWER	4	84	0.0%
EC COMMERCIAL LAUNDRY (RAGS)	652	166,937	4.9%
EU USED OIL RECYCLING	67	2,037,223	60.8%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
HH HW RCRA TREATMENT	60	1,022,977	30.5%
HQ QUESTIONABLE HW MGMT	3	136	0.0%
HR RCRA REUSE/RECYCLE	86	8,405	0.2%
OR ONSITE RECYCLE/REUSE	4	1,011	0.0%
SF SOLID WASTE INCINERATOR (WTE)	82	74,260	2.2%
SL SOLID WASTE LINED LANDFILL	57	18,712	0.5%
Total Pounds For This Waste Code:		3,346,953	
<b>M6 (HW) ABSORBENTS CONTAMINATED W/OIL</b>			
EC COMMERCIAL LAUNDRY (RAGS)	55	49,564	92.7%
EU USED OIL RECYCLING	4	580	1.0%
HH HW RCRA TREATMENT	2	700	1.3%
HQ QUESTIONABLE HW MGMT	2	182	0.3%
SF SOLID WASTE INCINERATOR (WTE)	1	2,400	4.4%
Total Pounds For This Waste Code:		53,426	
<b>M7 (EX) ABSORBENTS W/IGNITABLE ONLY SOLVENT</b>			
EC COMMERCIAL LAUNDRY (RAGS)	263	34,626	100.0%
<b>M7 (HW) ABSORBENTS W/IGNITABLE ONLY SOLVENT</b>			
DT DISPOSAL TO SEPTIC TANK	1	26	0.1%
EC COMMERCIAL LAUNDRY (RAGS)	42	7,158	34.0%
EU USED OIL RECYCLING	3	97	0.4%
HH HW RCRA TREATMENT	61	11,299	53.7%
HQ QUESTIONABLE HW MGMT	4	6	0.0%
HR RCRA REUSE/RECYCLE	27	879	4.1%
OR ONSITE RECYCLE/REUSE	2	5	0.0%
SF SOLID WASTE INCINERATOR (WTE)	10	584	2.7%
SL SOLID WASTE LINED LANDFILL	8	948	4.5%
Total Pounds For This Waste Code:		21,003	
<b>N0 (HW) DRY CLEANING FILTERS</b>			
EC COMMERCIAL LAUNDRY (RAGS)	1	952	0.4%
EU USED OIL RECYCLING	1	381	0.1%
HH HW RCRA TREATMENT	162	196,628	98.4%
OR ONSITE RECYCLE/REUSE	1	326	0.1%
SF SOLID WASTE INCINERATOR (WTE)	1	544	0.2%
SL SOLID WASTE LINED LANDFILL	1	816	0.4%
Total Pounds For This Waste Code:		199,777	
<b>N1 (HW) USED PERCHLOROETHYLENE</b>			
HH HW RCRA TREATMENT	31	200,704	99.5%
HR RCRA REUSE/RECYCLE	1	811	0.4%
OO OTHER ONSITE TDR	1	92	0.0%
Total Pounds For This Waste Code:		201,607	
<b>O0 (HW) REACTIVE WASTES - WITH CYANIDES OR SULFIDES</b>			
ER EXEMPT RECYCLE (BATTERY, ETC)	1	10	11.6%
HH HW RCRA TREATMENT	2	59	68.6%
TO WW TREATED OTHER DISPOSAL	1	17	19.7%
Total Pounds For This Waste Code:		86	
<b>O1 (HW) CYANIDE WASTES</b>			
DP DISPOSAL TO SEWER	1	1	0.3%
HH HW RCRA TREATMENT	1	250	98.0%
TO WW TREATED OTHER DISPOSAL	1	4	1.5%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description Disposal Codes and Descriptions	Facilities	Pounds	Percent
Total Pounds For This Waste Code:		255	
<b>P0 (EX) ACIDIC OR ALKALINE WASTES - PH&lt;2 OR PH&gt;12.5</b>			
TO WW TREATED OTHER DISPOSAL	6	24,679	100.0%
<b>P0 (HW) ACIDIC OR ALKALINE WASTES - PH&lt;2 OR PH&gt;12.5</b>			
DP DISPOSAL TO SEWER	25	107,494	55.7%
DT DISPOSAL TO SEPTIC TANK	1	5,300	2.7%
HH HW RCRA TREATMENT	50	74,799	38.8%
HO CESQG HW COLLECTION	1	64	0.0%
HQ QUESTIONABLE HW MGMT	1	318	0.1%
HR RCRA REUSE/RECYCLE	1	100	0.0%
SL SOLID WASTE LINED LANDFILL	1	254	0.1%
TE WW TREATMENT TO EVAPORATION	1	1,272	0.6%
TO WW TREATED OTHER DISPOSAL	2	2,544	1.3%
Total Pounds For This Waste Code:		192,781	
<b>Q0 (HW) SPENT PLATING WASTES-FROM METAL-PLATING, ETC.</b>			
HH HW RCRA TREATMENT	13	54,685	96.2%
HO CESQG HW COLLECTION	1	10	0.0%
HR RCRA REUSE/RECYCLE	1	2	0.0%
SL SOLID WASTE LINED LANDFILL	1	20	0.0%
Total Pounds For This Waste Code:		56,829	
<b>R0 (EX) DISCARDED GASOLINE, DIESEL OR OTHER FUELS</b>			
BF HW FUEL BURN/BLEND	4	509	0.6%
EU USED OIL RECYCLING	41	51,528	63.3%
HH HW RCRA TREATMENT	2	5,434	6.6%
HR RCRA REUSE/RECYCLE	6	6,363	7.8%
OR ONSITE RECYCLE/REUSE	3	17,462	21.4%
Total Pounds For This Waste Code:		81,381	
<b>R0 (HW) DISCARDED GASOLINE, DIESEL OR OTHER FUELS</b>			
BO OPEN BURN	1	57	0.2%
EU USED OIL RECYCLING	1	85	0.3%
HH HW RCRA TREATMENT	35	19,638	70.4%
HO CESQG HW COLLECTION	1	340	1.2%
HQ QUESTIONABLE HW MGMT	1	14	0.0%
OO OTHER ONSITE TDR	2	170	0.6%
OR ONSITE RECYCLE/REUSE	2	7,075	25.3%
TE WW TREATMENT TO EVAPORATION	2	509	1.8%
Total Pounds For This Waste Code:		27,888	
<b>S0 (EX) PHOTOGRAPHIC WSTES-PRIM.FIXANT SOLUTION</b>			
DP DISPOSAL TO SEWER	54	76,179	9.9%
ER EXEMPT RECYCLE (BATTERY, ETC)	50	89,303	11.7%
HR RCRA REUSE/RECYCLE	35	59,887	7.8%
OR ONSITE RECYCLE/REUSE	19	535,422	70.2%
Total Pounds For This Waste Code:		761,973	
<b>S0 (HW) PHOTOGRAPHIC WSTES-PRIM.FIXANT SOLUTION</b>			
BO OPEN BURN	1	4,541	0.3%
DP DISPOSAL TO SEWER	22	12,926	1.0%
DT DISPOSAL TO SEPTIC TANK	5	316	0.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	8	14,881	1.1%
EU USED OIL RECYCLING	1	4,541	0.3%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
HH HW RCRA TREATMENT	402	1,210,105	94.1%
HO CESQG HW COLLECTION	1	52	0.0%
HQ QUESTIONABLE HW MGMT	6	2,303	0.1%
HR RCRA REUSE/RECYCLE	6	878	0.0%
OO OTHER ONSITE TDR	1	26	0.0%
OR ONSITE RECYCLE/REUSE	4	25,703	1.9%
SL SOLID WASTE LINED LANDFILL	2	470	0.0%
TO WW TREATED OTHER DISPOSAL	3	4,645	0.3%
TP WW TREATED TO POTW	1	22	0.0%
Total Pounds For This Waste Code:		1,285,359	
<b>S1 (EX) PHOTOGRAPHIC SILVER RECOVERY CANNISTER</b>			
ER EXEMPT RECYCLE (BATTERY, ETC)	10	371	36.3%
HR RCRA REUSE/RECYCLE	4	651	63.6%
Total Pounds For This Waste Code:		1,022	
<b>S1 (HW) PHOTOGRAPHIC SILVER RECOVERY CANNISTER</b>			
ER EXEMPT RECYCLE (BATTERY, ETC)	28	49,531	82.4%
HH HW RCRA TREATMENT	6	6,735	11.2%
HR RCRA REUSE/RECYCLE	12	2,872	4.7%
SL SOLID WASTE LINED LANDFILL	1	2	0.0%
Total Pounds For This Waste Code:		60,080	
<b>S2 (EX) NON-HAZ EFFLUENT FROM PHOTO. SILVER RECOVERY</b>			
DP DISPOSAL TO SEWER	4	308	0.2%
HH HW RCRA TREATMENT	2	275	0.1%
OR ONSITE RECYCLE/REUSE	1	9,719	6.3%
Total Pounds For This Waste Code:		153,914	
<b>T0 (HW) OTHER IGNITABLE WASTES - NOT I0,J0,L0 OR R0</b>			
EC COMMERCIAL LAUNDRY (RAGS)	13	28,519	21.3%
EU USED OIL RECYCLING	2	7,748	5.7%
HH HW RCRA TREATMENT	13	7,525	5.6%
HQ QUESTIONABLE HW MGMT	1	6	0.0%
HR RCRA REUSE/RECYCLE	11	9,784	7.3%
OR ONSITE RECYCLE/REUSE	1	6,000	4.4%
SL SOLID WASTE LINED LANDFILL	6	74,104	55.4%
TE WW TREATMENT TO EVAPORATION	1	20	0.0%
Total Pounds For This Waste Code:		133,706	
<b>U0 (HW) WOOD-PRESERVING WASTES</b>			
HH HW RCRA TREATMENT	2	5,315	100.0%
<b>V0 (HW) DISCARDED UNUSED OR OFF-SPEC COMMERCIAL CHEM</b>			
DP DISPOSAL TO SEWER	1	2,919	9.4%
EU USED OIL RECYCLING	1	13,427	43.4%
HH HW RCRA TREATMENT	13	12,778	41.3%
HO CESQG HW COLLECTION	1	83	0.2%
HR RCRA REUSE/RECYCLE	1	8	0.0%
OR ONSITE RECYCLE/REUSE	1	1,668	5.3%
SL SOLID WASTE LINED LANDFILL	2	27	0.0%
Total Pounds For This Waste Code:		30,911	
<b>V2 (HW) ACUTE CHEMICAL SPILL CLEANUP - P LIST</b>			
HH HW RCRA TREATMENT	1	220	100.0%
<b>W0 (EX) LEAD-ACID BATTERIES</b>			

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
ER EXEMPT RECYCLE (BATTERY, ETC)	121	5,322,960	6.0%
HH HW RCRA TREATMENT	3	24,624	0.0%
HO CESQG HW COLLECTION	1	38	0.0%
HR RCRA REUSE/RECYCLE	1,751	82,600,054	93.4%
OR ONSITE RECYCLE/REUSE	7	53,656	0.0%
Total Pounds For This Waste Code:		88,358,304	
<b>W0 (HW) LEAD-ACID BATTERIES</b>			
DP DISPOSAL TO SEWER	5	2,318	0.2%
EC COMMERCIAL LAUNDRY (RAGS)	3	4,940	0.5%
EE UNIVERSAL WASTE (LAMP, ETC)	1	228	0.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	1	11,400	1.3%
EU USED OIL RECYCLING	9	33,820	4.0%
HH HW RCRA TREATMENT	44	233,859	27.9%
HO CESQG HW COLLECTION	1	912	0.1%
HQ QUESTIONABLE HW MGMT	3	36,024	4.3%
HR RCRA REUSE/RECYCLE	117	424,656	50.8%
OO OTHER ONSITE TDR	1	4	0.0%
OP RCRA PERMITTED TREATMENT	1	9,120	1.0%
OR ONSITE RECYCLE/REUSE	16	59,124	7.0%
SL SOLID WASTE LINED LANDFILL	6	5,136	0.6%
Total Pounds For This Waste Code:		835,677	
<b>W1 (HW) MERCURY OXIDE BATTERIES</b>			
EE UNIVERSAL WASTE (LAMP, ETC)	1	600	37.4%
ER EXEMPT RECYCLE (BATTERY, ETC)	2	61	3.8%
HH HW RCRA TREATMENT	1	141	8.7%
HR RCRA REUSE/RECYCLE	7	801	49.9%
Total Pounds For This Waste Code:		1,603	
<b>W2 (EX) RECHARGEABLE BATTERIES: Pb-ACID OR NiCADs</b>			
HR RCRA REUSE/RECYCLE	6	26,202	100.0%
<b>W2 (HW) RECHARGEABLE BATTERIES: Pb-ACID OR NiCADs</b>			
EE UNIVERSAL WASTE (LAMP, ETC)	2	425	14.0%
HH HW RCRA TREATMENT	3	2,576	85.0%
HR RCRA REUSE/RECYCLE	1	6	0.1%
SF SOLID WASTE INCINERATOR (WTE)	2	21	0.6%
Total Pounds For This Waste Code:		3,028	
<b>W3 (EX) FLUORESCENT LAMPS</b>			
EE UNIVERSAL WASTE (LAMP, ETC)	2	18	0.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	182	3,186	2.1%
HO CESQG HW COLLECTION	2	30	0.0%
HR RCRA REUSE/RECYCLE	37	145,763	97.6%
OR ONSITE RECYCLE/REUSE	2	312	0.2%
Total Pounds For This Waste Code:		149,320	
<b>W3 (HW) FLUORESCENT LAMPS</b>			
DD ONSITE LAND DISPOSAL	1	4	0.0%
EE UNIVERSAL WASTE (LAMP, ETC)	3	12,225	33.2%
ER EXEMPT RECYCLE (BATTERY, ETC)	4	8,254	22.4%
EU USED OIL RECYCLING	1	64	0.1%
HH HW RCRA TREATMENT	22	4,297	11.6%
HO CESQG HW COLLECTION	2	54	0.1%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
HQ QUESTIONABLE HW MGMT	1	10	0.0%
HR RCRA REUSE/RECYCLE	39	2,971	8.0%
SF SOLID WASTE INCINERATOR (WTE)	267	1,362	3.7%
SL SOLID WASTE LINED LANDFILL	63	7,492	20.3%
Total Pounds For This Waste Code:		36,733	
<b>W4 (EX) MERCURY CONTAINING DEVICES (THERMOSTATS,ETC.)</b>			
EE UNIVERSAL WASTE (LAMP, ETC)	3	14	20.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	2	4	5.7%
HO CESQG HW COLLECTION	1	1	1.4%
HR RCRA REUSE/RECYCLE	2	51	72.8%
Total Pounds For This Waste Code:		70	
<b>W4 (HW) MERCURY CONTAINING DEVICES (THERMOSTATS,ETC.)</b>			
DD ONSITE LAND DISPOSAL	1	2	0.6%
ER EXEMPT RECYCLE (BATTERY, ETC)	2	2	0.6%
HH HW RCRA TREATMENT	3	251	86.8%
HO CESQG HW COLLECTION	1	1	0.3%
HR RCRA REUSE/RECYCLE	4	20	6.9%
SL SOLID WASTE LINED LANDFILL	2	13	4.4%
Total Pounds For This Waste Code:		289	
<b>Y0 (EX) USED OILS &amp; OTHER LUBRICANTS</b>			
BF HW FUEL BURN/BLEND	3	23,241	0.0%
BU USED OIL BURNER	1	18,288	0.0%
EU USED OIL RECYCLING	2,347	48,146,174	36.8%
HH HW RCRA TREATMENT	6	21,625	0.0%
HO CESQG HW COLLECTION	18	4,005	0.0%
HR RCRA REUSE/RECYCLE	208	81,150,093	62.1%
OR ONSITE RECYCLE/REUSE	6	57,177	0.0%
Total Pounds For This Waste Code:		130,512,186	
<b>Y0 (HW) USED OILS &amp; OTHER LUBRICANTS</b>			
BF HW FUEL BURN/BLEND	2	18,440	0.7%
BO OPEN BURN	1	762	0.0%
DD ONSITE LAND DISPOSAL	2	701	0.0%
DS DISPOSAL TO SURFACE WATER	1	1	0.0%
EC COMMERCIAL LAUNDRY (RAGS)	4	21,298	0.8%
EU USED OIL RECYCLING	308	1,386,673	53.9%
HH HW RCRA TREATMENT	197	1,060,331	41.2%
HO CESQG HW COLLECTION	1	91	0.0%
HQ QUESTIONABLE HW MGMT	9	20,025	0.7%
HR RCRA REUSE/RECYCLE	14	15,566	0.6%
OO OTHER ONSITE TDR	2	1,981	0.0%
OR ONSITE RECYCLE/REUSE	6	14,630	0.5%
SL SOLID WASTE LINED LANDFILL	18	6,940	0.2%
TE WW TREATMENT TO EVAPORATION	1	15	0.0%
Total Pounds For This Waste Code:		2,569,002	
<b>Y1 (EX) METALWORKING (CUTTING) OILS</b>			
EU USED OIL RECYCLING	3	804	24.7%
HR RCRA REUSE/RECYCLE	1	381	11.7%
OR ONSITE RECYCLE/REUSE	4	2,065	63.5%
Total Pounds For This Waste Code:		3,250	

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description Disposal Codes and Descriptions	Facilities	Pounds	Percent
<b>Y1 (HW) METALWORKING (CUTTING) OILS</b>			
EC COMMERCIAL LAUNDRY (RAGS)	1	46	3.2%
HH HW RCRA TREATMENT	1	1,372	96.7%
Total Pounds For This Waste Code:		1,418	
<b>Y2 (EX) CRUSHED OIL FILTERS</b>			
ER EXEMPT RECYCLE (BATTERY, ETC)	10	38,080	0.0%
EU USED OIL RECYCLING	178	40,742,521	99.5%
HO CESQG HW COLLECTION	1	44	0.0%
HR RCRA REUSE/RECYCLE	36	89,168	0.2%
SL SOLID WASTE LINED LANDFILL	21	27,215	0.0%
Total Pounds For This Waste Code:		40,907,852	
<b>Y2 (HW) CRUSHED OIL FILTERS</b>			
BF HW FUEL BURN/BLEND	1	240	0.2%
BO OPEN BURN	1	33	0.0%
EU USED OIL RECYCLING	1	7,920	9.2%
HH HW RCRA TREATMENT	49	68,972	80.5%
HQ QUESTIONABLE HW MGMT	1	500	0.5%
HR RCRA REUSE/RECYCLE	2	399	0.4%
OO OTHER ONSITE TDR	1	1,500	1.7%
SF SOLID WASTE INCINERATOR (WTE)	2	3,960	4.6%
SL SOLID WASTE LINED LANDFILL	7	1,333	1.5%
TO WW TREATED OTHER DISPOSAL	1	317	0.3%
Total Pounds For This Waste Code:		85,674	
<b>Y3 (EX) HYDRAULIC OIL</b>			
EU USED OIL RECYCLING	38	206,058	98.1%
HH HW RCRA TREATMENT	1	914	0.4%
HO CESQG HW COLLECTION	1	76	0.0%
HR RCRA REUSE/RECYCLE	2	1,143	0.5%
Total Pounds For This Waste Code:		210,020	
<b>Y3 (HW) HYDRAULIC OIL</b>			
EU USED OIL RECYCLING	1	38	18.5%
HH HW RCRA TREATMENT	1	76	37.0%
Total Pounds For This Waste Code:		205	
<b>Y4 (HW) USED OIL CONTAMINATED W/ HALOGENATED HAZ WAST</b>			
EU USED OIL RECYCLING	3	1,703	7.2%
HH HW RCRA TREATMENT	4	21,671	92.7%
Total Pounds For This Waste Code:		23,374	
<b>Y5 (EX) UNCRUSHED OIL FILTERS</b>			
BF HW FUEL BURN/BLEND	1	53	0.0%
ER EXEMPT RECYCLE (BATTERY, ETC)	75	116,547	0.3%
EU USED OIL RECYCLING	1,172	30,665,402	96.9%
HH HW RCRA TREATMENT	1	2,800	0.0%
HR RCRA REUSE/RECYCLE	149	689,515	2.1%
SF SOLID WASTE INCINERATOR (WTE)	3	8,353	0.0%
SL SOLID WASTE LINED LANDFILL	1	13	0.0%
Total Pounds For This Waste Code:		31,644,097	
<b>Y5 (HW) UNCRUSHED OIL FILTERS</b>			
AN ACCUMULATION - NO MANAGEMENT PLAN	1	53	0.0%
BF HW FUEL BURN/BLEND	1	88	0.0%

# Appendix 3: Waste Generation and Disposal Summary of Verified SQGs (FY98/99)

## Waste Disposal Summary for Facilities Generating Less Than 26400 Pounds

Code and Description	Facilities	Pounds	Percent
<b>Disposal Codes and Descriptions</b>			
BO OPEN BURN	1	11	0.0%
EC COMMERCIAL LAUNDRY (RAGS)	1	960	0.4%
EU USED OIL RECYCLING	56	82,599	34.5%
HH HW RCRA TREATMENT	108	76,284	31.8%
HO CESQG HW COLLECTION	3	369	0.1%
HQ QUESTIONABLE HW MGMT	15	4,153	1.7%
HR RCRA REUSE/RECYCLE	7	622	0.2%
OO OTHER ONSITE TDR	1	12	0.0%
OP RCRA PERMITTED TREATMENT	1	400	0.1%
SF SOLID WASTE INCINERATOR (WTE)	61	42,593	17.8%
SL SOLID WASTE LINED LANDFILL	66	22,514	9.4%
Total Pounds For This Waste Code:		239,177	
<b>Y6 (EX) NON-HAZ (HIGH FLASH/AQUEOUS) SOLVENT</b>			
EU USED OIL RECYCLING	3	241	26.7%
HH HW RCRA TREATMENT	1	600	66.5%
SL SOLID WASTE LINED LANDFILL	1	60	6.6%
Total Pounds For This Waste Code:		901	
<b>Z1 (HW) CARBURETOR CLEANER</b>			
BE EVAPORATION ONLY	1	20	0.0%
EU USED OIL RECYCLING	12	2,377	10.4%
HH HW RCRA TREATMENT	40	17,766	78.0%
HO CESQG HW COLLECTION	1	50	0.2%
HQ QUESTIONABLE HW MGMT	1	100	0.4%
HR RCRA REUSE/RECYCLE	4	750	3.2%
OR ONSITE RECYCLE/REUSE	1	50	0.2%
SL SOLID WASTE LINED LANDFILL	4	850	3.7%
TE WW TREATMENT TO EVAPORATION	2	810	3.5%
Total Pounds For This Waste Code:		22,773	
<b>Z2 (HW) BENZENE, TOLUENE, OR XYLENE - SPENT</b>			
EU USED OIL RECYCLING	1	36	0.0%
HH HW RCRA TREATMENT	17	60,188	98.1%
HO CESQG HW COLLECTION	1	36	0.0%
OR ONSITE RECYCLE/REUSE	2	742	1.2%
SL SOLID WASTE LINED LANDFILL	1	240	0.3%
TE WW TREATMENT TO EVAPORATION	1	73	0.1%
Total Pounds For This Waste Code:		61,315	
<b>Total for all Wastes:</b>		<b>314,792,566</b>	

The Facilities count is actually a count of Waste Streams, which may be slightly greater in some cases.

## Appendix 4: Hazardous Waste Collection Center Grant Program Funding Summary

FY98/99

<b>Funding for Cooperative Collection Center Arrangements</b>	
Gadsden/Wakulla (HW414)	\$12,000
Alachua/Dixie (HW407)	\$20,000
Alachua/Gilchrist (HW408)	\$20,000
Alachua/Lafayette (HW409)	\$15,000
Highlands/Glades (HW413)	\$20,000
Okaloosa/Bay (HW400)	\$35,000
Okaloosa/Calhoun (HW399)	\$20,000
Okaloosa/Gulf (HW406)	\$20,000
Okaloosa/Holmes (HW404)	\$20,000
Okaloosa/Santa Rosa (HW405)	\$25,000
Marion/Sumter (HW412)	\$18,000
Okaloosa/Jackson (HW403)	\$20,000
Okaloosa/Walton (HW401)	\$20,000
Okaloosa/Washington (HW402)	\$20,000
<b>Total</b>	<b>\$285,000.00</b>
<b>Funding for Unique or Innovative Projects</b>	
Pasco (HWxxx)	\$50,000 (electronics demanufacturing)
Pinellas (Hwxxx)	\$15,000 (electronics demanufacturing)
Okaloosa (HWxxx)	\$25,000 (mobile unit)
<b>Total</b>	<b>\$90,000.00</b>

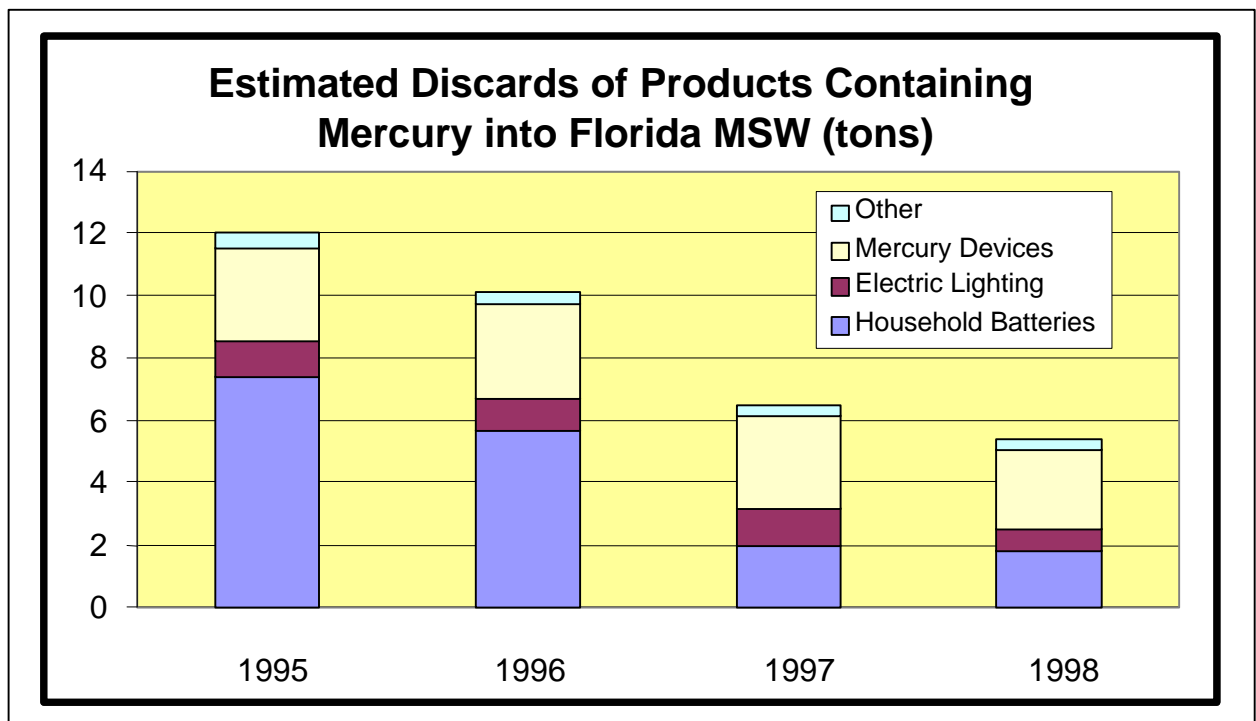
## Appendix 4: Hazardous Waste Collection Center Grant Program Funding Summary

FY99/2000

<b>Funding for Cooperative Collection Center Arrangements</b>	
Gadsden/Wakulla (HW414)	\$12,000
Alachua/Dixie (HW407)	\$20,000
Alachua/Gilchrist (HW408)	\$20,000
Alachua/Lafayette (HW409)	\$15,000
Highlands/Glades (HW413)	\$20,000
Okaloosa/Bay (HW400)	\$35,000
Okaloosa/Calhoun (HW399)	\$20,000
Okaloosa/Gulf (HW406)	\$20,000
Okaloosa/Holmes (HW404)	\$20,000
Okaloosa/Santa Rosa (HW405)	\$25,000
Marion/Sumter (HW412)	\$18,000
Okaloosa/Jackson (HW403)	\$20,000
Okaloosa/Walton (HW401)	\$20,000
Okaloosa/Washington (HW402)	\$20,000
<b>Total</b>	<b>\$285,000.00</b>
<b>Funding for Unique or Innovative Projects</b>	
Pasco (HW416)	\$50,000 (electronics demanufacturing)
Alachua (HW418)	\$30,000 (electronics demanufacturing)
Okaloosa (HW415)	\$25,000 (mobile unit)
<b>Total</b>	<b>\$90,000.00</b>

## Appendix 5: Estimated Discards of Mercury, Cadmium and Lead Products in the Florida Municipal Solid Waste Stream, 1995-1998

Estimated Mercury in Florida Municipal Solid Waste, 1995-1998 Projection, in Tons								
Product Category	1995	1996	1997	1998	1995	1996	1997	1998
Household Batteries	7.4	5.6	2.0	1.7	61.8%	55.6%	30.4%	32.5%
Electric Lighting	1.1	1.1	1.1	0.7	9.3%	10.4%	17.5%	14.0%
Mercury Devices <sup>1</sup>	3.0	3.0	3.0	2.5	25.2%	30.0%	46.3%	46.9%
Other <sup>2</sup>	0.4	0.4	0.4	0.4	3.7%	4.0%	5.9%	6.6%
<b>Total</b>	<b>12.0</b>	<b>10.1</b>	<b>6.5</b>	<b>5.4</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

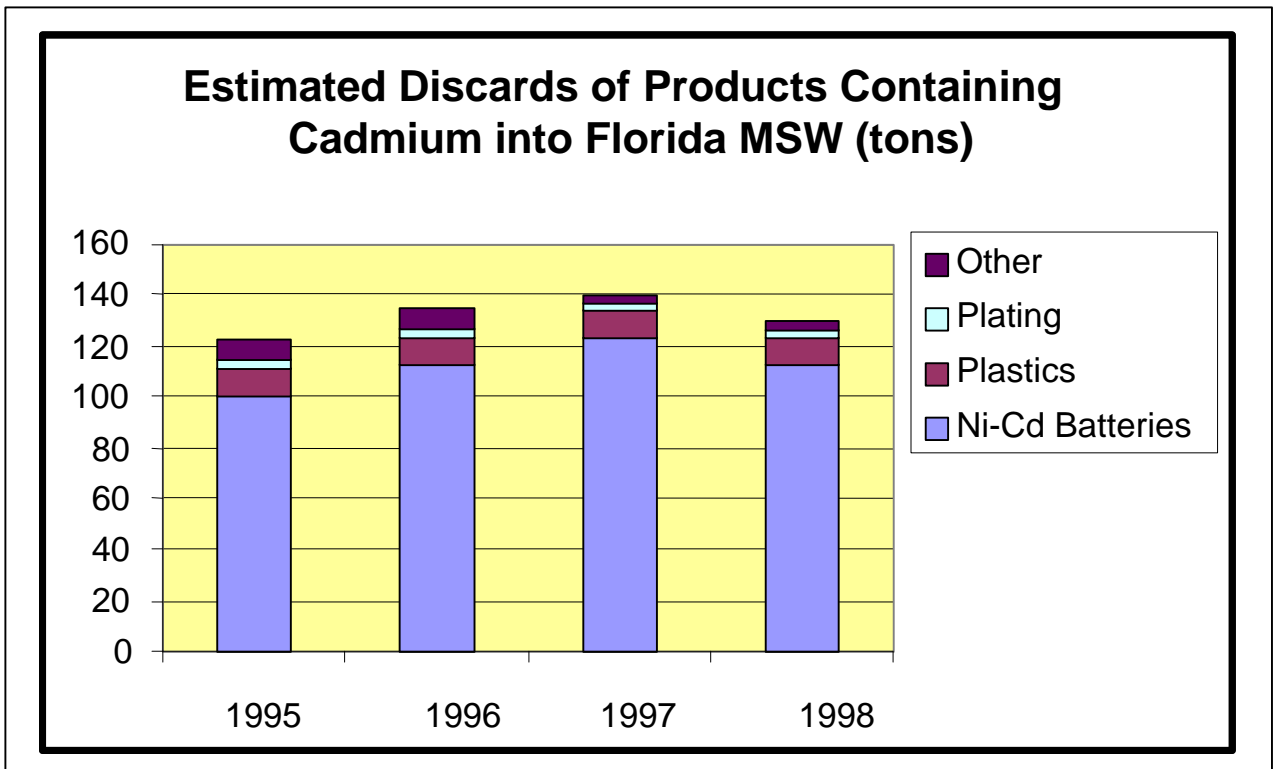


<sup>1</sup> Switches, thermostats, thermometers

<sup>2</sup> Dental amalgam, pigments

## Appendix 5: Estimated Discards of Mercury, Cadmium and Lead Products in the Florida Municipal Solid Waste Stream, 1995-1998

Estimated Cadmium in Florida Municipal Solid Waste, 1995-1998 Projection, in Tons								
Product Category	1995	1996	1997	1998	1995	1996	1997	1998
Ni-Cd Batteries	100.2	113.0	123.2	113.0	82.0%	83.9%	88.1%	87.5%
Plastics	10.5	10.5	10.5	10.5	8.6%	7.8%	7.5%	8.2%
Plating	4.1	3.0	3.1	2.5	3.4%	2.2%	2.2%	2.0%
Other	7.4	8.1	3.1	3.1	6.1%	6.0%	2.2%	2.4%
Total	122.3	134.6	139.9	129.2	100.0%	100.0%	100.0%	100.0%



## Appendix 5: Estimated Discards of Mercury, Cadmium and Lead Products in the Florida Municipal Solid Waste Stream, 1995-1998

Estimated Lead in Florida Municipal Solid Waste, 1995-1998 Projection, in Tons								
Product Category	1995	1996	1997	1998	1995	1996	1997	1998
Vehicular Lead Acid Batteries	4,645	1,524	2,597	2,794	60.0%	32.8%	35.2%	36.0%
Small Sealed Lead Acid Batteries	339	375	397	436	4.4%	8.1%	5.4%	5.6%
TV Picture Tubes	1,144	1,144	2,557	2,567	14.8%	24.6%	34.7%	33.1%
Computer Monitors	691	742	999	1,153	8.9%	16.0%	13.5%	14.9%
Other	926	857	827	811	12.0%	18.5%	11.2%	10.5%
<b>Total</b>	<b>7,745</b>	<b>4,641</b>	<b>7,378</b>	<b>7,761</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

