

REPORT TO THE LEGISLATURE

FLORIDA'S USED OIL RECYCLING PROGRAM

14th Annual Report

January 1999

INTRODUCTION AND HISTORY

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 while, at the same time, the amount of oily wastes managed by way of landfill disposal and incineration continues to decline.

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 1-800 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 progress of Florida’s Used Oil Recycling Program during calendar year 1998. The data used is from calendar year 1997.

RECENT DEVELOPMENTS

Chapter 62-710, F.A.C. was amended, effective December 23, 1996. The most significant change requires Used Oil Processors to obtain a Used Oil Processing Permit. Since this rule became effective, 20 Used Oil Processors have filed permit applications with DEP. Of these applicants, 16 facilities have been granted permits, 3 facilities are still under review and 1 facility is in the process of preparing a new application as it is moving to a new location. DEP charges a \$2,000 application fee to cover the cost to DEP for the permit review. Permitted facilities must provide descriptions of the corporate structure, processing operations, preparedness and prevention, analysis and contingency plans, tank management, closure and employee training. Some items (storage tank integrity, adequacy of secondary containment, and certain portions of the closure plan) require certification by an engineer registered in the state of Florida.

The rule was again amended, effective March 25, 1997. These latest amendments deleted certain obsolete or redundant sections of Chapter 62-710, F.A.C., and centralized some common Solid Waste Management items (e.g. intent, definitions and forms) in Rule 62-701, F.A.C., Solid Waste Management, in order to meet the requirements of Governor Chiles’ Rule Reduction Initiative.

USED OIL REGISTRATION AND REPORTING

As of December 1998, 143 individual private and public businesses were included in the registration database, 14 of which are based outside of Florida. This is less than the 188 handlers registered in 1997 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 is priced at its lowest level since the mid-1980s. Most of the handlers are registered for more than one activity and, though the number of individual businesses has declined, the number

of activities for which these businesses register has increased. Specifically, these 143 businesses now occupy 182 sites (very near the 188 businesses registered last year).

Effective June 8, 1995, Used Oil Filter (UOF) Handlers were required to register with the Department's Used Oil Recycling Program. The number of 1998 UOF registrants is not significantly changed except for an increase of 17 UOF transfer facilities, which is indicative of existing businesses expanding to fill gaps left by those going out of business. Many used oil handlers now also manage UOFs to meet customer demand. As of December 1998, the DEP database includes 107 UOF Transporters, 72 UOF Transfer Facilities, 28 UOF Processors and 4 UOF End-Users (metal foundries and Waste-To-Energy facilities [WTEs] which 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.

ANNUAL REPORTS FOR CALENDAR YEAR 1997

Transporters and processing facilities must report on the type, quantities, and sources of used oil collected, processed, and end-used. The data from these reports are listed in detail in Table 1, Page 13, are graphically illustrated in the Figures on pages 10 through 12, and are explained in the following sections.

Trends in Used Oil Management in Florida

Figure 1, page 10, shows the trend 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, 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 the Used Oil Management standards (Chapter 62-710, F.A.C.) and, at the same, adopted standards for the management of Petroleum Contact Water (Chapter 62-740, F.A.C.). 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. Large quantities of material (mostly water with a small percentage of petroleum) which had, in the past, been managed as used oil, are now managed as PCW. Thus, the trend in Figure 1 indicates that a lot of material managed as used oil was more waste-like than oil-like.

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 while the amount of waste disposal related to used oil steadily declines. The regulatory burden is heaviest on the Used Oil Processors. This burden has moved processors to exercise more control over the product received from transporters who, in turn, apply stricter management standards on their generator customers. The result is that used oil, once a catch-all waste stream for a variety of materials, is becoming a cleaner commodity. That is, as better management increases, there is a notable reduction in the instances of a load of used oil being contaminated by water, sediments and other, potentially hazardous, wastes. The trend in Figure 1 continues, indicating that better management is occurring at the point of generation so that good quality used oil, rather than waste material, is collected. The apparent reduction in total collection is not significant, as this number includes both oil and waste. As the level of waste material in the oil declines, then so too will this total volume.

Amount of Used Oil and Oily Wastes Collected

In calendar year 1997, 119,563,069 gallons of used oil and oily wastes were reported to have been collected (Figure 2, Page 11). Automotive used oil and oily waste made up 35.5% of the total amount collected, including 2,489,256 gallons collected from nearly 1,100 Public Used Oil Collection Centers. Approximately 21.6% of the total was industrial oil collected from bulk petroleum and various industrial facilities, and other sources. The remaining 42.9% of the total was of the mixed type generated by commercial sources (i.e. a combination of automotive and industrial oils).

Disposition of Used Oil and Oily Wastes

As mentioned in the preceding section, approximately 119,563,069 gallons of used oil were reported to have been collected in Florida during 1997. About 42,542,494 gallons of this figure 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 (Table 1, Page 13). 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 80,887,456 gallons of used oil and oily wastes were reported as collected for management. However, only 74,808,926 gallons of used oil are reported as being managed (recycled or disposed). This leaves a difference of 6,078,530 gallons of used oil unaccounted for. 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 4.9% of the total quantity reported to have been collected, which is well within the normal range of any expected margin of error.

Of the 74,808,926 gallons of used oil and oily waste reported as managed, 54,229,115 gallons (72.5%) were recycled as follows (Figure 3, Page 11):

- o 33,524,746 gallons (61.8%) were marketed as an on-specification used oil fuel
- o 2,643,060 gallons (4.9%) were marketed as an off-specification used oil fuel
- o 12,652,963 gallons (23.3%) were marketed for other industrial uses (e.g. phosphate beneficiation)
- o 5,408,346 (9.9%) gallons was counted as end of year, on-site inventory

There are some noticeable trends in this data when compared to previous years. The amount of oil marketed as off-specification used oil has decreased by about 4 million gallons while the amount marketed for industrial uses has increased by over 10 million gallons. DEP suspects that this may be the result of some confusion on the part of registrants who apply varying definitions of end uses according to their particular business practice. For instance, a cement kiln might burn used oil fuel, but report this as an industrial use as they are primarily a manufacturing operation. The amount of used oil remaining in inventory increased by about 4 million gallons. This is probably due to depressed prices and adverse market conditions as previously discussed.

Of all the oil and oily wastes collected, 20,579,811 gallons (27.5% of the total amount of used oil reported managed) ended up as oily wastes. These wastes are primarily condensation water and sediment which are ubiquitous in used oil. Whenever a container of used oil is picked up for transportation, whether in drums or pumped into a vac-truck, these wastes will almost always constitute some significant portion of the load. A significant portion, according to industry reports, ranges anywhere from 4-20%, with the mean around 8%. These oily wastes were managed as follows (Figure 4, Page 12):

- o 795,349 gallons (3.9%) were landfilled (non-liquid sediment)
- o 19,374,059 (94.1 %) were treated as industrial wastewaters
- o 410,403 gallons (2%) were incinerated

Again, there are significant changes in this data compared to last year. The amount of solid oily wastes landfilled have been reduced by almost one million gallons. The amount of liquid oily wastes indicate an overall reduction of such waste by approximately 8 million gallons less than last year. The amount of oily wastes incinerated has been reduced by about 1.3 million gallons. Finally, another result of strict quality control of the revised reporting forms, no wastes were listed under "other" (typically undescribed) management schemes. DEP interprets this shift in data as an indication that, as has been mentioned, the quality control at the point of generation and pickup is improving.

Used Oil Filters (UOFs)

This is the third year that data on UOF management have been collected. The Department feels that this year's report is more accurate than those of the first two years of data, 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 this is considered proprietary information by the companies involved in this business. As a result, staff can only estimate the number of filters which are 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.

In the past, the Department used very conservative estimates of UOF generation in Florida. This year, staff has expanded the parameters of the criteria used (for instance, assuming four, rather than two, filter changes per year for passenger cars). The result is a very liberal estimate of UOF generation, which results in a higher performance standard against which the effectiveness of the program is measured. DEP now estimates that approximately 42.5 million UOFs are generated in Florida (based on the number of vehicle registrations multiplied by 4 oil changes per year), compared to the 30 million assumed to have been generated last year.

From the data reported, approximately 17,808,898 UOFs were collected (diverted from landfill disposal). Using the stricter assumptions used this year, this still accounts for approximately 42% of the 42,507,989 UOFs generated in Florida. It can be assumed that a majority of the unreported filters are generated by persons served by a WTE facility. Most of the filters reported to have been collected were managed at U.S. Foundry in Dade County which recycles the filters into steel manhole covers. The prohibition against the landfill disposal of used oil filters has resulted in the recycling, rather than disposal, of approximately 8,655 tons of steel in 1997. About 316,267 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 652,058 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 1.3%.

PUBLIC USED OIL COLLECTION CENTERS (PUOCCs)

As of December, 1998, Florida had a statewide network of 1,092 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. However, the number of PUOCCs participating in this program continued its three year decline (Figure 5, Page 12). There are at least three reasons for this decrease. First, many major retailers are discontinuing auto service functions (most notably K-Mart and Sears). Second, many local governments have established fixed location collection sites (Household Hazardous Waste Collection Centers, recycling sites or landfill stations) and have shut down the isolated, unstaffed collection tanks. By centralizing their collection operation, local governments can better manage the site. A number of counties reported housekeeping and monitoring problems at remote, unattended sites. Finally, some collection site operators feel there is a risk of increased liability in collecting used oil from the public. 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 decline in numbers of collection sites, the gallons of used oil collected from household Do-It-Yourselfers (DIYers) continues to increase annually (Figure 4, Page 12).

PUOCCs accepted 2,489,256 gallons of used oil in calendar year 1997, an increase of 86,267, which is higher than last year's increase of 82,289 gallons. The Department estimates that approximately 5 million gallons of used oil is generated by DIYers who change their own motor oil. This means that Florida is now collecting 50% of the used oil generated by DIYers, which is an increase of about 3% over last year.

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 their 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.

EFFECTIVENESS OF THE ACT

One of the main purposes of the Florida Resource Recovery and Management Act, of which the Used Oil Recycling Act (Sections 403.75-403.769, Florida Statutes) is part, is to promote the recovery of resources which have the potential for further use—such as used oil—

while protecting the public health and welfare and the environment of Florida. A combination of Florida's growing population, an effective PUOCC program and prohibitions on the uses and disposal of used oil and used oil filters continues to increase the amount of quality used oil available for recycling.

Prohibitions on the land application or disposal of used oil and strict management standards provide the Department's enforcement personnel with laws and authorities that can assist in preventing contamination of surface and ground waters by improper used oil management practices.

The management standards, including the processing permit, were adopted with the input, cooperation and approval of the regulated community. They are based on a common sense approach to regulation which is felt to be protective of the environment and human health while assuring used oil will be recycled to the most practical extent possible.

Recent amendments made state and federal law more consistent and easier on the regulated community. The signage requirement and toll free information number further expand public awareness and increase the amount of used oil which is properly managed.

According to a 1996 report published by the American Petroleum Institute and a 1995 report published by Evergreen Oil Company of California, the collection rate of Florida's Used Oil Recycling Program ranks (respectively) first and second in the nation. The Department attributes this success to: 1) its decision not to manage used oil as hazardous waste; 2) the cooperation of public and private entities in maintaining the PUOCC program; and 3) the Department's use of effective formal education and public information materials.

Technical assistance and information provided to states such as Wisconsin, Massachusetts, Pennsylvania, and Virginia and overseas governments such as Puerto Rico, Costa Rica, and the Cayman Islands indicate that Florida's Used Oil Recycling Program continues to serve as a national and international model of effective used oil management.

RECOMMENDATIONS

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.

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.

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.

As a result of a 1996 partnership initiative, the Department and the UAUOS, which represents about 45% of the used oil and used oil filter handlers registered with the Department, jointly provided three education and compliance assistance seminars throughout the state. A day long education seminar, focusing on compliance assistance and featuring DEP speakers was included as part of the Association's annual workshop.

The Department continues to assist 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. The Department is currently assisting in the development of Continuing Education Units (CEU) that would standardize and lend credence to used oil training activities in Florida.

The UAUOS has also agreed to work in partnership with the Department as it pursues grant funding for educating generators of used oil. Such grants would significantly reduce some of the problems in managing used oil, such as cross contamination with hazardous waste, at the source of the problem, the generator's site

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 which 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 almost 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.

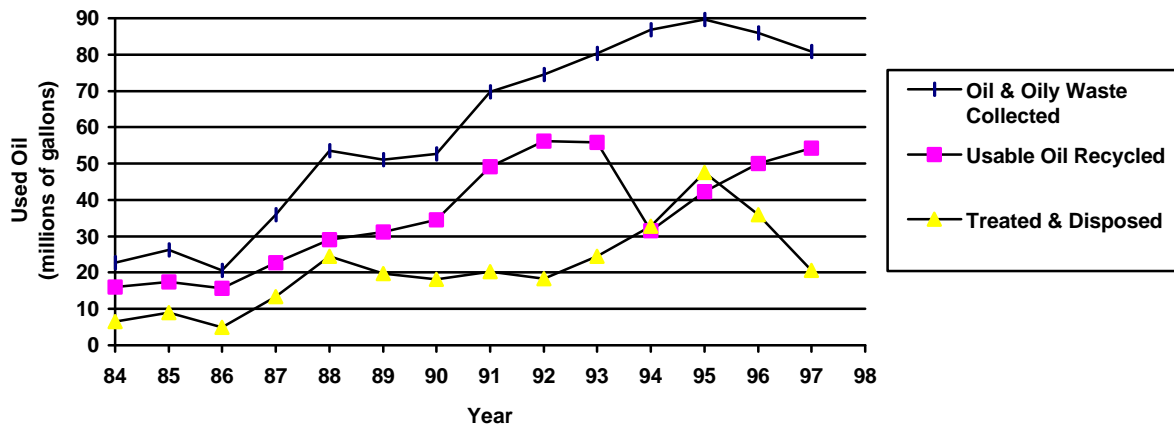
A critical step in keeping the Used Oil Recycling Program up to date and at the cutting edge of technology occurred in March 1998 when the program established a presence on the World Wide Web at the Department's internet site. Annual Reports and all fact sheets and forms used in this program are available for downloading at this site. Various education materials will soon be added to the site. The internet address for Florida's Used Oil Recycling Program is http://www2.dep.state.fl.us/waste/programs/used_oil/.

APPENDIX

The following items are included as appendices to this report:

1. A copy of those sections of the Florida Statutes which are relevant to used oil.
2. A copy of Chapter 62-710, F.A.C.
3. A copy of those section of Chapter 62-701, F.A.C., which are relevant to used oil.

Figure 1
Used Oil Management in Florida
1984-1997



Note: The significant shift in data during 1993-95 is due to factors described, in detail, at the top of Page 4 of this report. Trends since 1995, primarily due to the effectiveness of this program, demonstrate that the amount of used oil actually recycled has continued to exceed the amount of oily wastes treated and disposed of.

Figure 2
Amount of Used Oil and Oily Wastes Collected in Florida
119,563,069 gallons
1997

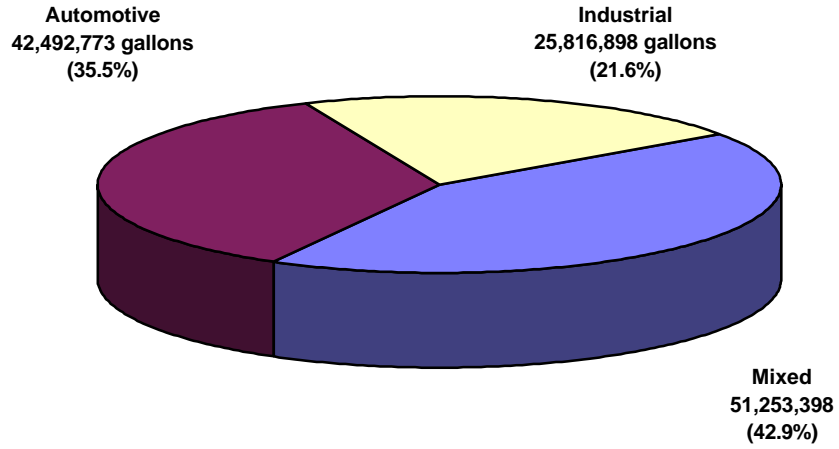


Figure 3
Disposition of Used Oil Managed in Florida
54,229,115 gallons
1997

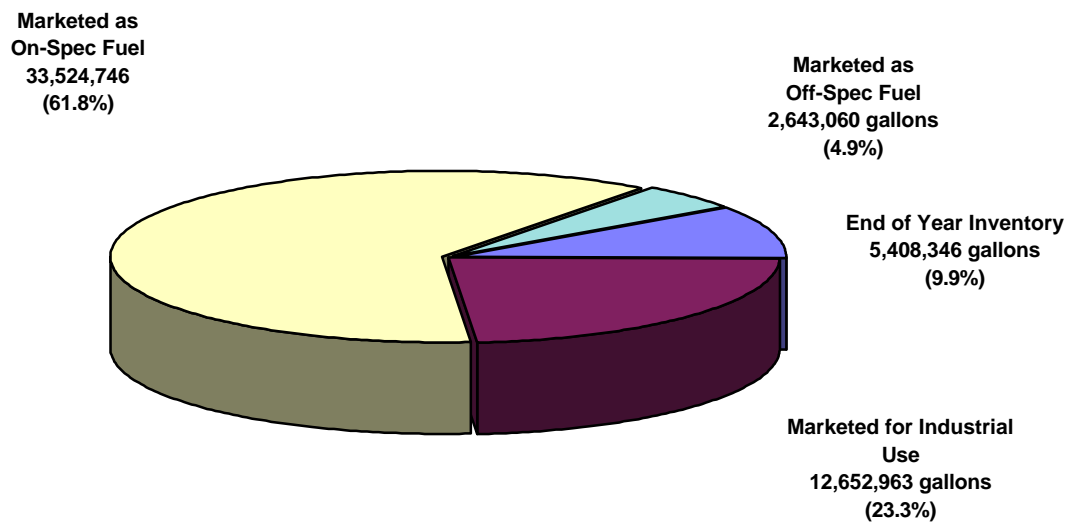


Figure 4
Treatment and Disposal of Oily Wastes in Florida
20,579,811 gallons
1997

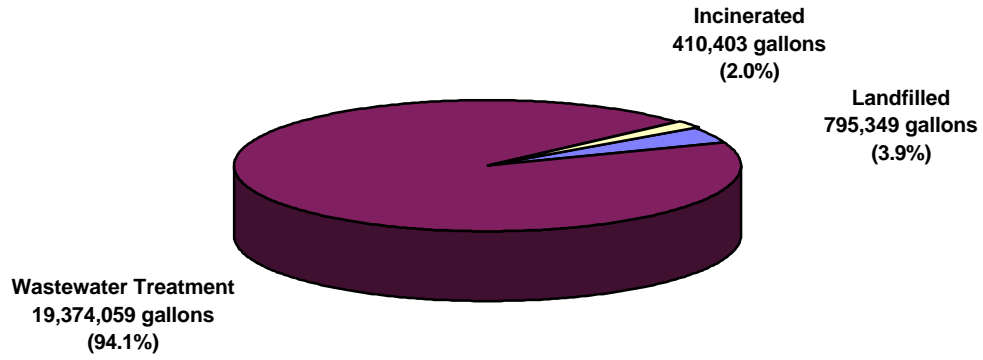
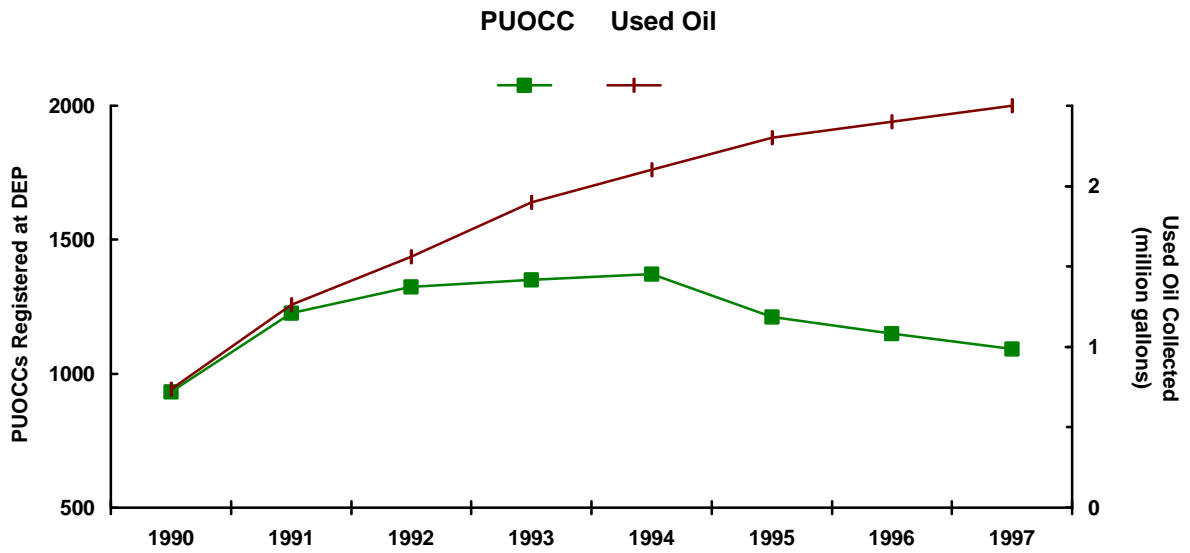


Figure 5
Growth of Florida's Public Used Oil Collection Center Program
1990-1997



**TABLE 1
SUMMARY OF 1997 USED OIL DATA REPORTED TO DEP IN 1998**

I. Used Oil Handlers		II. Used Oil Filter (UOF) Handlers	
143 Companies registered (7 new in 1998)		107 UOF Transporters	
182 Sites registered		72 UOF Transfer Facilities	
132 Used Oil Transporters		28 UOF Processors	
95 Used Oil Transfer Facilities		5 UOF End Users	
47 Used Oil Marketers			
3 Used Oil Burners (off-spec)			
20 Used Oil Processors (16 permitted facilities, 3 permits pending, 1 new application)			
III. Used Oil/Oily Waste Collected			
Automotive	FL: 40,837,582*	Out of State: 1,655,191	Total: 42,492,773
Industrial	FL: 22,799,127	Out of State: 3,107,771	Total: 25,816,898
Mixed	FL: 49,673,024	Out of State: 1,580,374	Total: 51,253,398
Totals:	FL: 113,309,733	Out of State: 6,253,336	Total Collected: 119,563,069
*NOTE: This includes 2,489,256 gallons collected by Public Used Oil Collection Centers			
IV. Used Oil/Oily Waste Transferred FL: 30,625,984 Out of State: 11,916,510 Total: 42,542,494			
V. Used Oil Managed			
Marketed as On-Spec	FL: 28,443,221	Out of State: 5,081,525	Total: 33,524,746
Marketed as Off-Spec	FL: 2,302,767	Out of State: 340,293	Total: 2,643,060
Marketed as Industrial	FL: 12,652,963	Out of State: 0	Total: 12,652,963
Total:	FL: 48,041,421	Out of State: 1,631,696	:: 48,820,769
VI. Disposal of Oily Wastes			
Landfilled	FL: 692,405	Out of State: 102,944	Total: 795,349
Treated Wastewater	FL: 19,266,799	Out of State: 107,260	Total: 19,374,059
Incinerated	FL: 410,403	Out of State: 0	Total: 410,403
Total:	FL: 20,369,607	Out of State: 210,204	:: 20,579,811
VII. Gross Summary of Used Oil Management in Florida			
A. Collection		B. Management	
Total Collected	119,563,069	Total Recycled	48,820,769
+ Beginning Inventory	3,866,881	+End of Year Inventory	5,408,346
= Total on Hand	123,429,950	Total Managed	54,229,115
-Amount Transferred	-42,542,494	+Total Disposed	20,579,811
=Net Total Collected	80,887,456	= Grand Total Managed	74,808,926
Difference between A & B = 6,078,530 gallons unaccounted for (4.9% of the 123,429,950 Total on Hand)			
VIII. Used Oil Filter Management			
Collected	17,808,898	Tons of Steel Recycled	8,655
+Sarting Inventory	386,350	Oil Managed (gals.)	316,267
=Total Managed	18,195,248	Waste Managed (gals.)	16,406
-Transferred to End User	17,310,739		
= Unaccounted for	232,451 (1.3% of Total Managed)		