Article 27, Title 23: Vehicle Dismantling Facilities

NYSDEC Annual Report Data Analysis – Operating Year 2007

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Solid Waste, Reduction & Recycling

July 2009

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EXECUTIVE SUMMARY

Annual reports are required from each Vehicle Dismantling Facility as per ECL § 27-2303(1). Data collected from last year's annual reports suggest that almost 400,000 end-of-life vehicles were dismantled in 2007.

The vast majority of end-of-life vehicles were handled by approximate 80 of the 548 reporting facilities in the State. These high-throughput facilities are distributed throughout the State, but most operate in either Region 2 or Region 9. Increased focus at these facilities on decommissioning procedures could lead to significant increases in gross material recovery and per car recovery rates.

The majority of facilities are low-throughput operations where attention should be focused on leak inspection and observation, as well as timely decommissioning operations.

Region 2 facilities generated the highest volumes of waste fluids and materials; however, in most cases Region 2 facilities also displayed the lowest recovery rates per vehicle.

Varying regions displayed the highest recovery rates for given materials streams, indicating that most regions contain high performing facilities from which improved operating procedures can be learned and distributed.

INTRODUCTION

On July 28, 2006, Chapter 180 of the Laws of 2006 amended the Environmental Conservation Law to include Article 27, Title 23: Vehicle Dismantling Facilities. This statute significantly increases solid waste management regulation for the State's vehicle recycling industry.

One of key provisions of Article 27, Title 23 requires that each vehicle dismantling facility (VDF) submit an annual report to the Department of Environmental Conservation (Department) detailing the disposition of waste materials generated by dismantling of end-of-life vehicles (ELVs). The statute specifically requires the following information:

a) the number of ELVs received at the facility;

b) the number of ELVs crushed or removed from the facility;

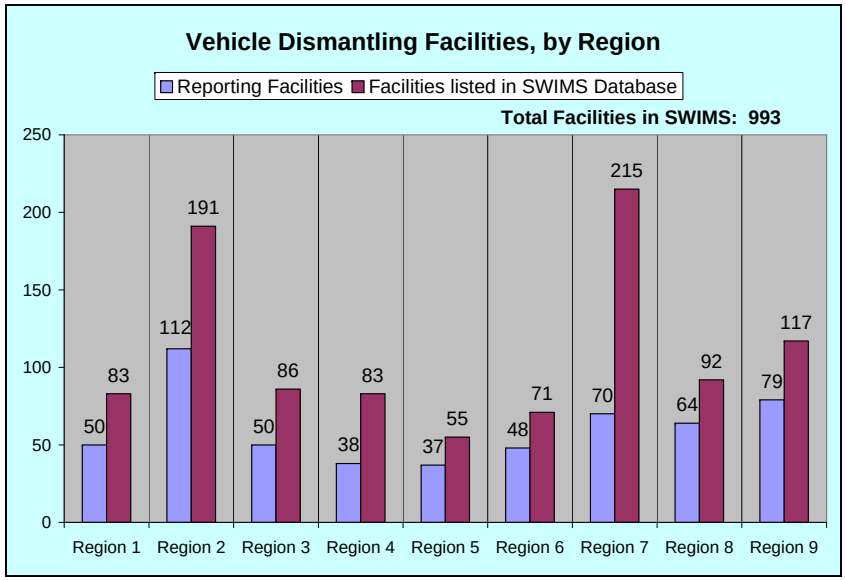
c) the number of ELVs stored at the facility at the end of the reporting year;

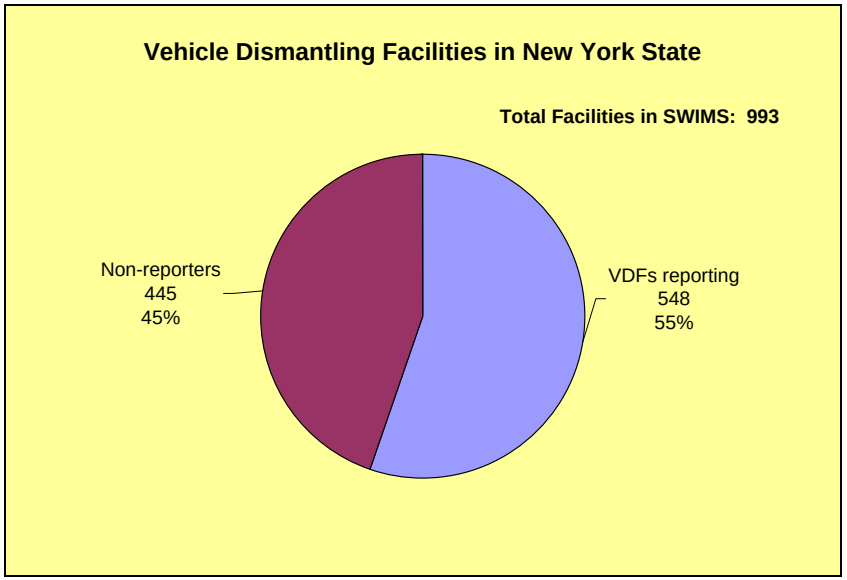
d) the approximate area at the facility used for storage of ELVs;

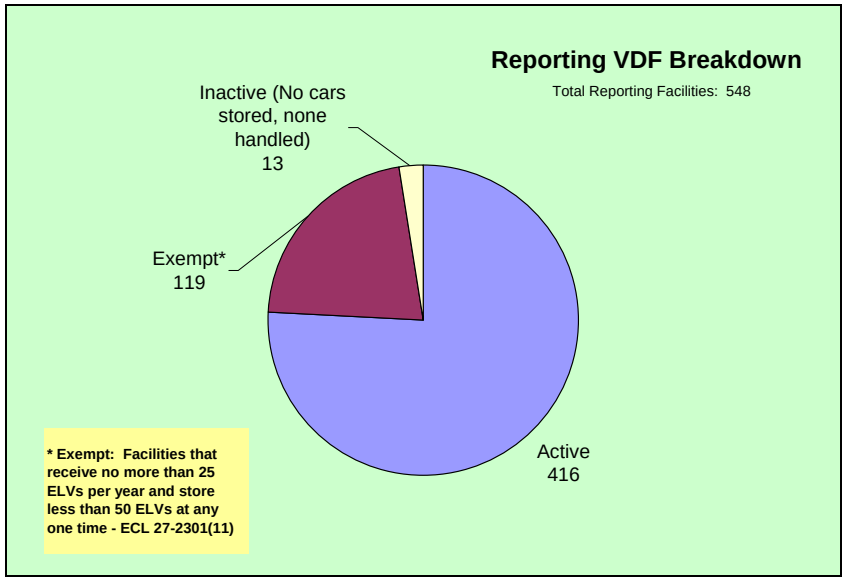
e) the quantities of waste vehicle fluids extracted from ELVs received and their disposition, including the quantity sold, used on-site, stored on-site, and disposed; and

f) the number and if appropriate nature of any violation of all applicable rules and regulations of the state.

Operating year 2007 was the first full year for which VDF annual reports were submitted. The following is a detailed analysis of the data included in these annual reports. The annual report for each VDF can be viewed at the following website: ftp://ftp.dec.state.ny.us/dshm/



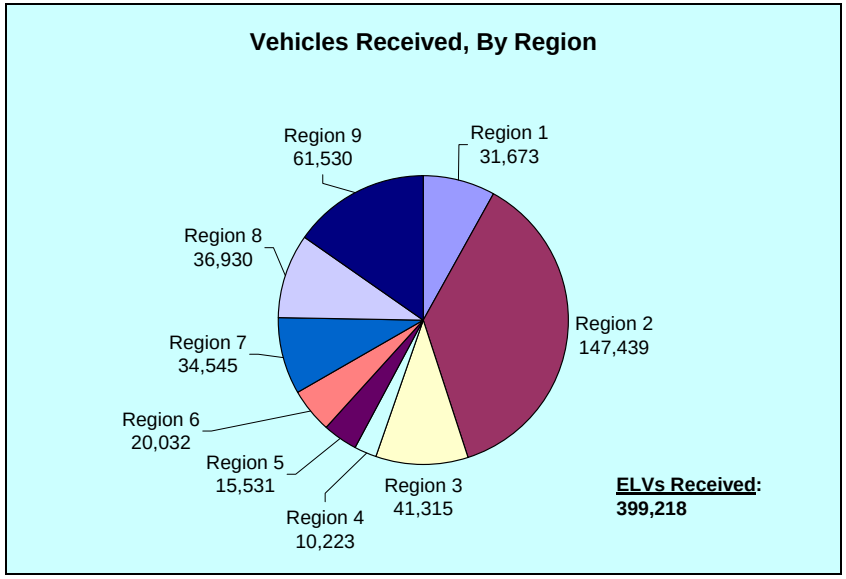


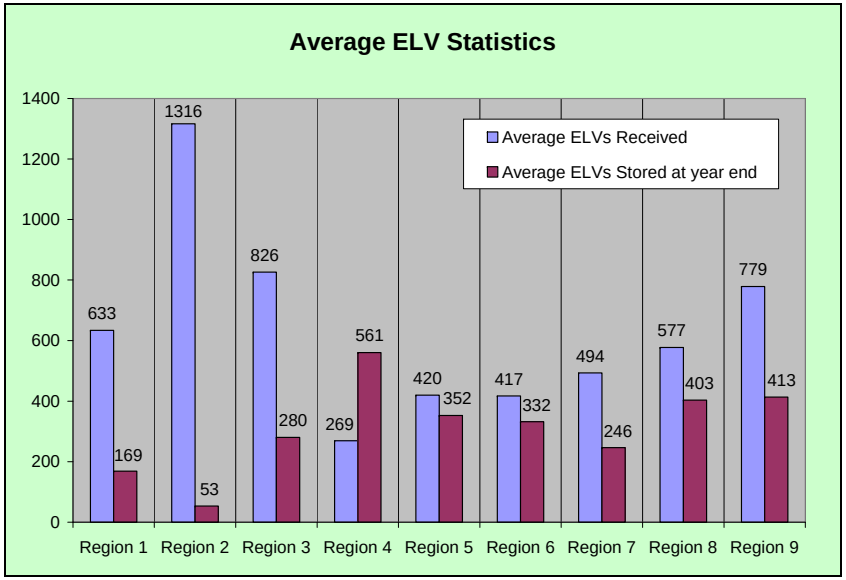


GENERAL INFORMATION

Efforts to establish a VDF facility list have led to information on almost 1,000 facilities, though this number may dwindle as more detailed information is collected. The number of facilities reporting (548) equals 55% of the total estimated number of facilities in the State. Staff view this response as highly encouraging for the program's first year, and expect the reporting percentage to grow as active facilities report and facilities that are no longer in operation are removed from the list.

2007 Totals	
ELVs received	399,218
ELVs crushed and/or sent offsite	390,675
ELVs stored onsite at year's end	154,419
ELVs stored at start of 2007 (calculated)	145,876





VEHICLES RECEIVED & STORED

In 2007, annual report data show that almost 400,000 vehicles were received and sent for recycling by VDFs. The number of stored ELVs increased only slightly, showing a high rate of vehicle recycling in the State.

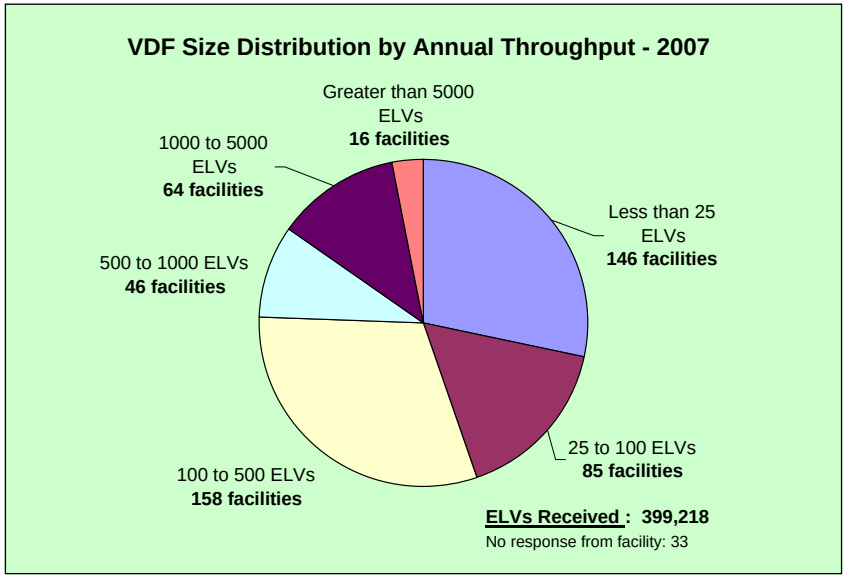
Well over half the vehicles dismantled in New York State are handled in the downstate region, including Regions 1 through 3. The largest number of ELVs was handled by Region 2 facilities, where VDFs handled 37% of the State's ELVs.

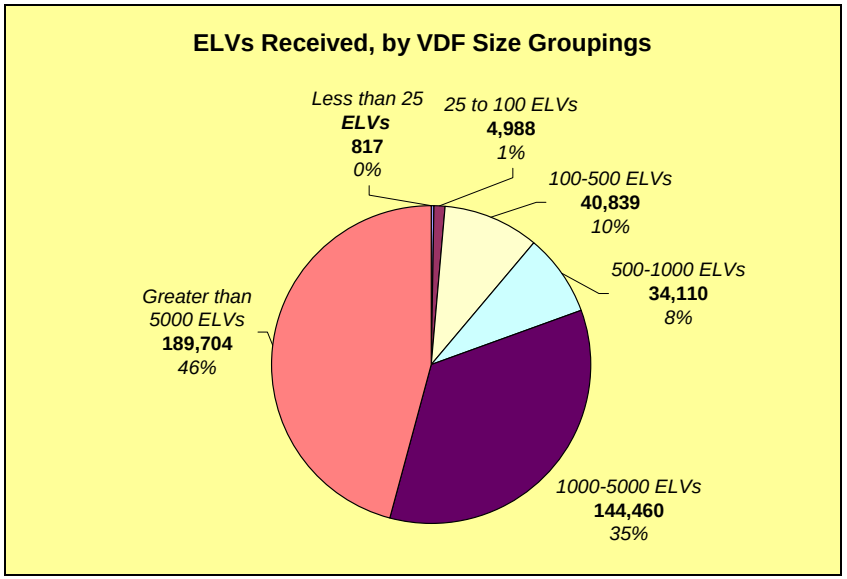
THROUGHPUT

Almost half of New York's VDFs receive 100 vehicles or fewer during an operating year. Furthermore, only about one-quarter of the facilities receive more than 500 vehicles per year. However, the sixteen largest VDFs in the State receive almost one-half of the total ELVs, while the largest 80 facilities receive 81% of the vehicles. These statistics lead to two major conclusions:

1) The majority of VDFs are small facilities that will draw significant resources for inspection and enforcement.

2) The majority of ELVs are handled by a comparably small number of VDFs. Focusing compliance and enforcement efforts on these larger facilities may dramatically increase the effectiveness of directed resources and enhance the protection of New York State's environment.

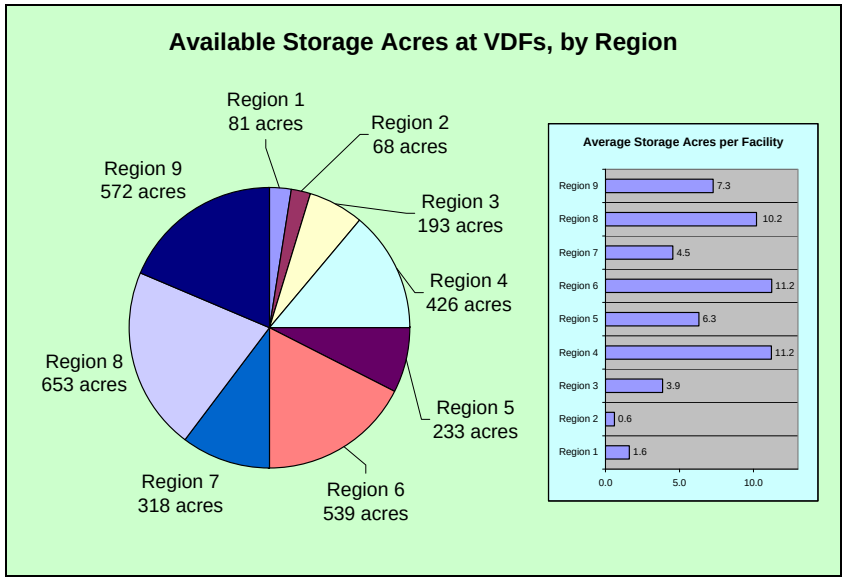


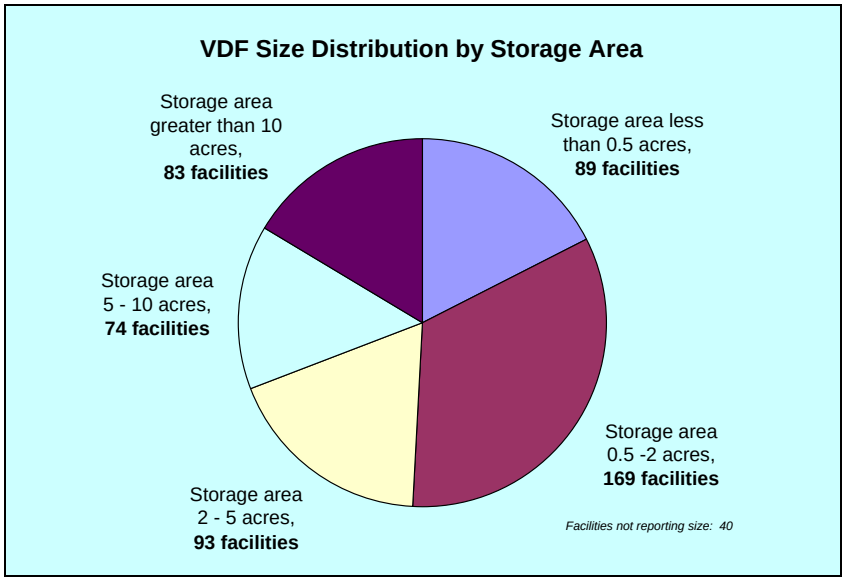


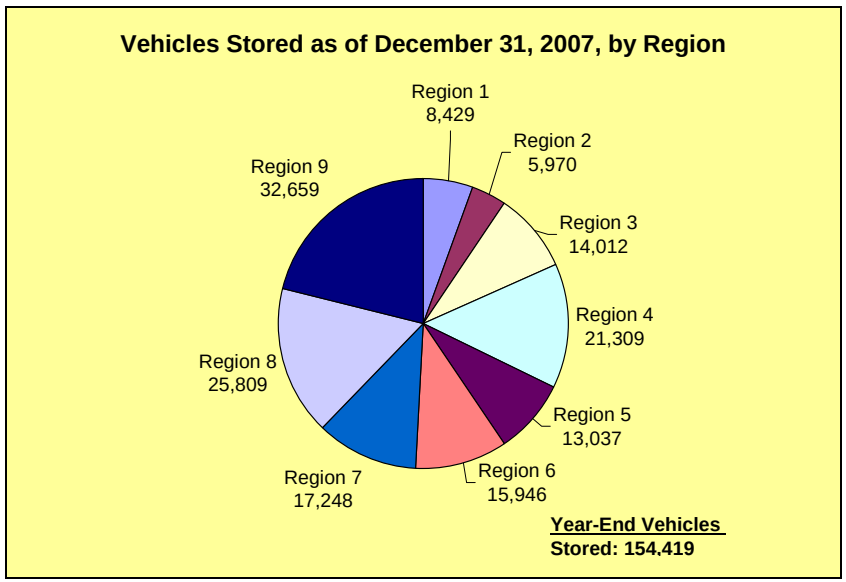
Facilities receiving greater than 5000 ELVs	Region	County
J & J Recycling	2	Richmond
Allied Used Auto Parts & Salvage Corp	2	Bronx
New Town Auto Sales & Auto Parts Inc	2	Kings
Universal Used Auto Parts Brooklyn	2	Kings
A1A Auto Company Inc 8014	2	Kings
Brooklyn Resource Recovery	2	Kings
B.R.I.M. Auto Recyclers	3	Orange
Brookfield Auto Wreckers Inc	3	Westchester
Vince's U-pull-It	6	Oneida
Gary's U-Pull It Inc	7	Broome
Northside Salvage Yard Inc 954	8	Monroe
South Buffalo Auto Parts	9	Erie
David Dunn Salvage Inc.	9	Niagara
M&M u Pull It Inc.	9	Erie
Twin Village Recycling; Inc.	9	Erie
Diamond Hurwitz Scrap LLC	9	Erie

MAJOR DISMANTLERS

This chart displays the sixteen VDFs in New York State that received more than 5,000 ELVs in 2007. Six of these facilities operate in Region 2 and five operate in Region 9. The remainder is distributed somewhat evenly among Regions 3, 6, 7, and 8. None are located in either of Regions 4 or 5. This distribution illustrates that regional VDF throughput is heavily focused in urban areas.





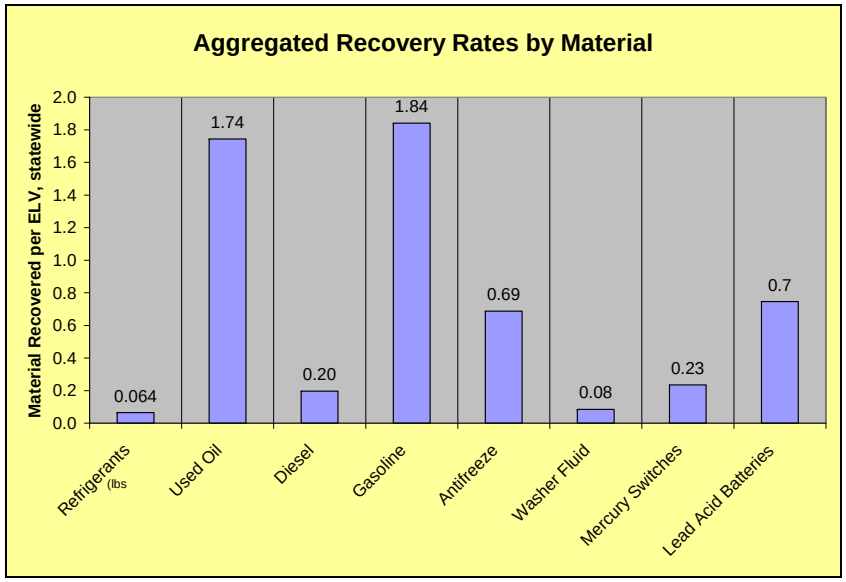


STORAGE

Despite the image of a VDF as a large field filled with stored vehicles, over half of the VDFs in the State are two acres or smaller, while more than two-thirds are less than five acres.

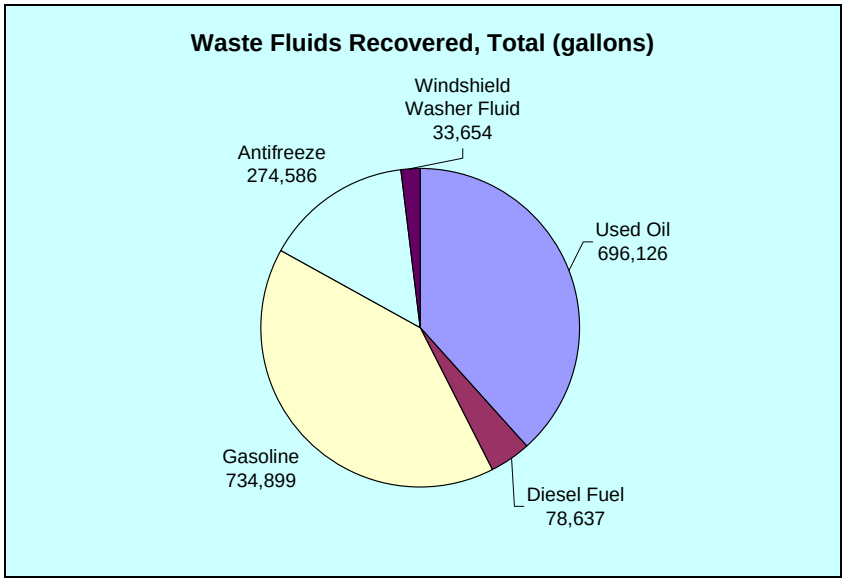
Available storage area does not necessarily equate to throughput: 82% of storage areas lies in Regions 4 through 9, while considerably less than 50% of ELVs are handled in these regions (see pg.5 above). Not surprisingly, storage area does correlate well with vehicles stored.

Conclusions: Initial leak inspections, continuing leak observation, and timely decommissioning of stored vehicles are essential in high storage regions (R4, R7, R8, R9). Operating procedures for decommissioning of fluids, mercury switches, etc. are vital in high-throughput regions (R2, R3, R9).



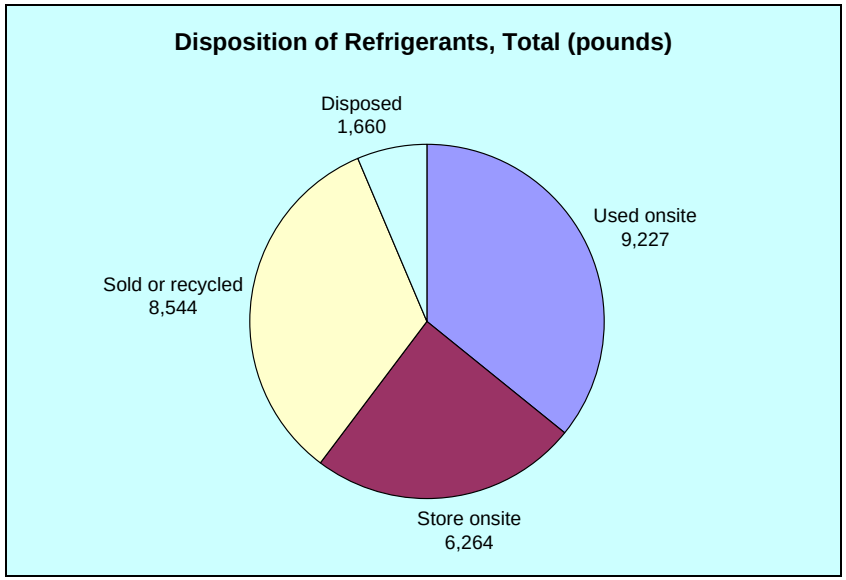
MATERIAL ANALYTICAL PARAMETERS

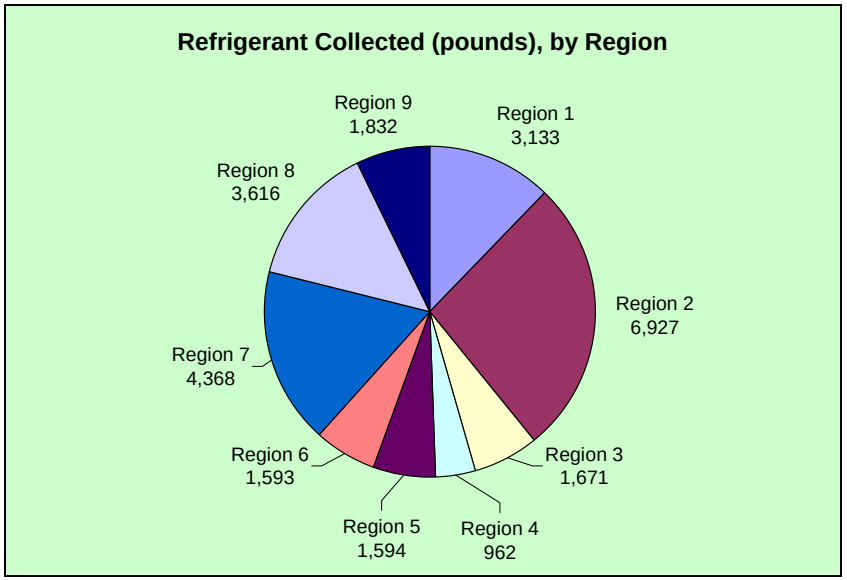
The Aggregated Recovery Rate described above is a simple average for each waste material collected, calculated by summing the total material collected in the State and dividing by the total number of ELVs received. These aggregated recovery rates are compared to the regional recovery rates for each material on the pages below.

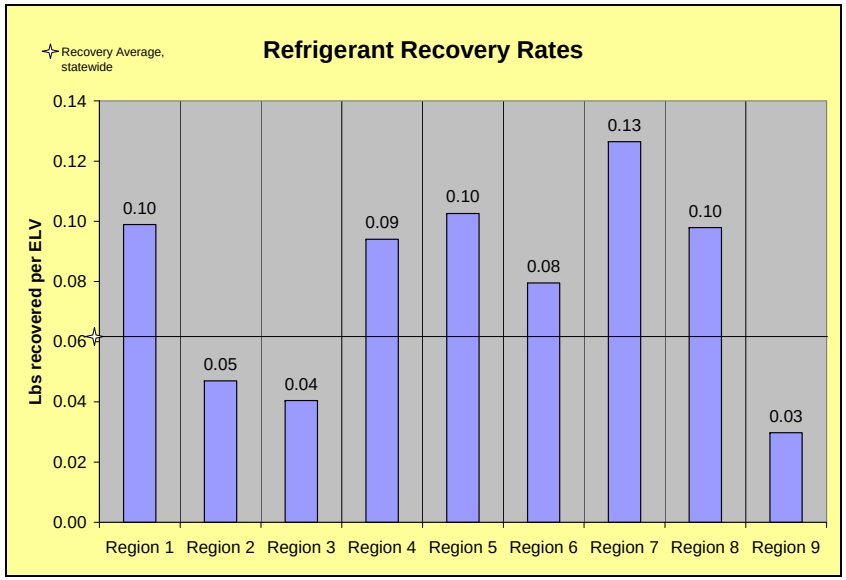


TOTAL WASTE FLUIDS RECOVERED

Used oil and gasoline make up the vast majority of waste fluids collected at VDFs in New York. Both the total material recovered and the aggregated recovery rate will be valuable parameters to compare over upcoming years.

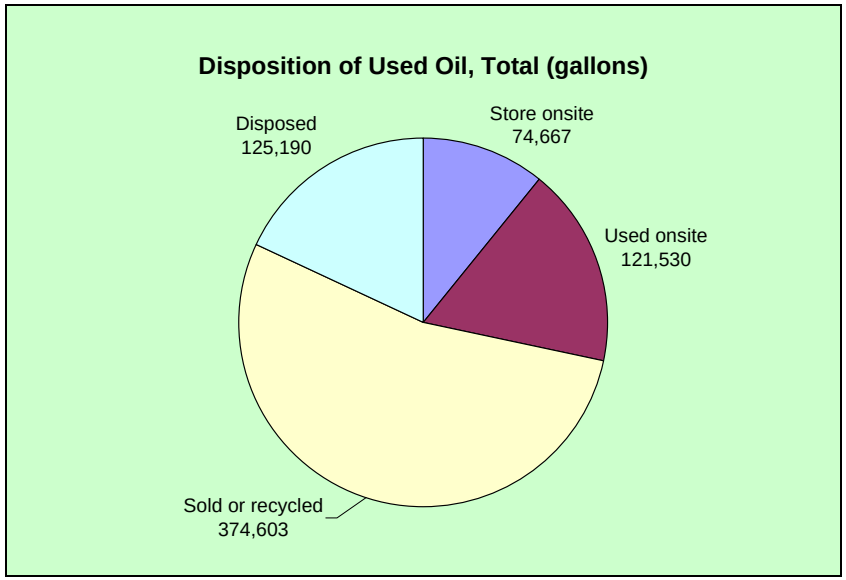


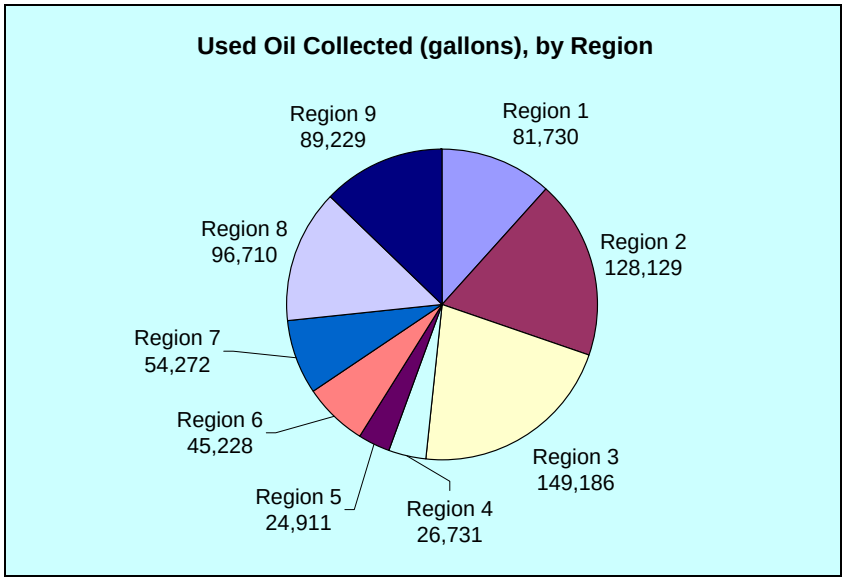




REFRIGERANT

The USEPA Clean Air Act and Article 27, Title 23 require automobile refrigerants to be collected and recycled or reclaimed. Primarily, VDFs report that collected refrigerant is either recycled onsite or sent for reclamation. Region 2 facilities collected the highest volume of refrigerant but their recovery rate was among the lowest in the State. Region 7 facilities demonstrated the State's highest recovery rate per vehicle.

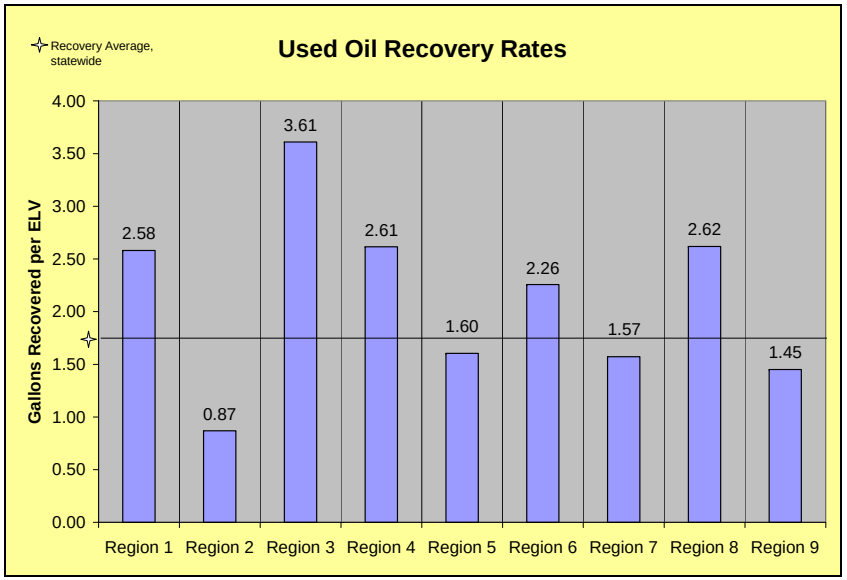


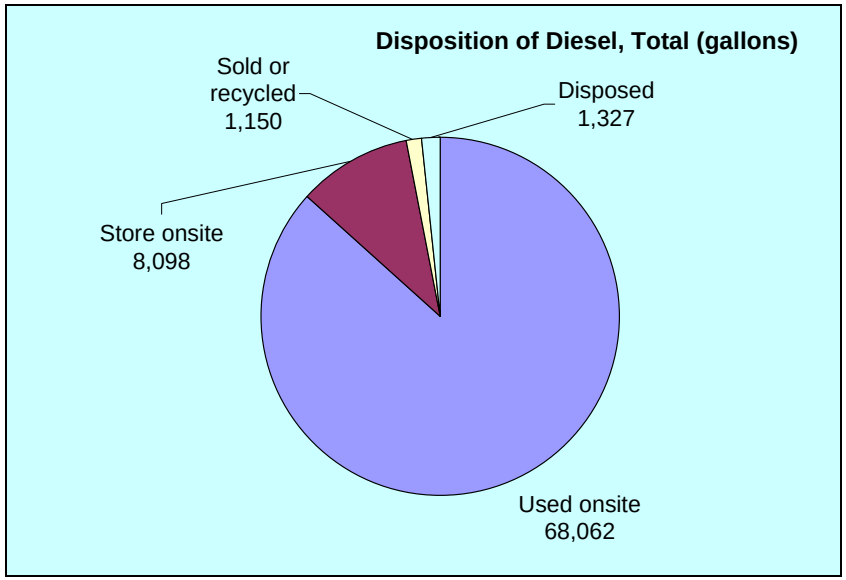


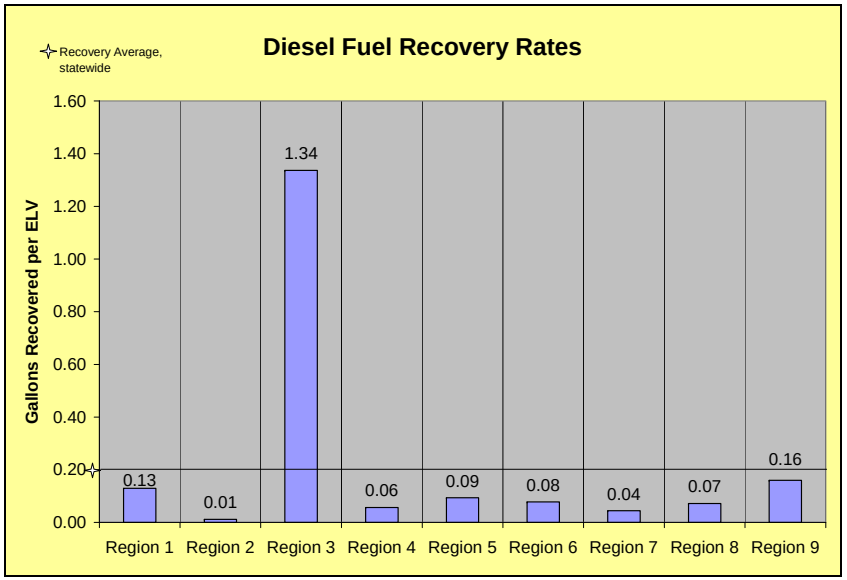
USED OIL

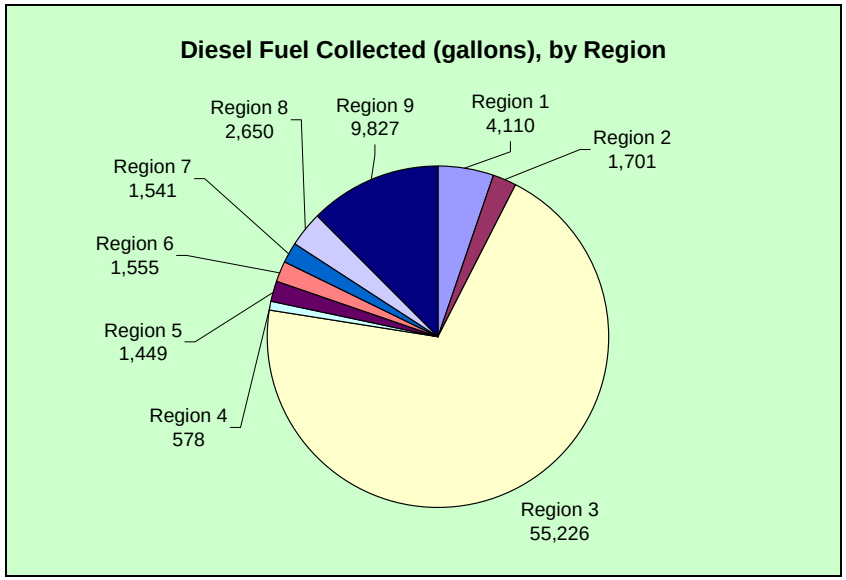
Approximately 70% of collected used oil was reported to be either sold/recycled or used onsite. We expect that much of this used oil heated VDF facilities utilizing waste oil space heaters. Fuel prices in 2006 and 2007 increased demand for alternative fuel sources, increasing onsite use of used oil.

Comparison of used oil collection volumes and recovery rates between facilities in Region 2 and 3 is illuminating. Similar volumes were collected; however Region 3 facilities demonstrated much higher collection rates than their Region 2 competitors. Part of this may be attributable to high volume facilities such as Brookfield Auto Wreckers, whose numbers dominate the region's data. However, the volumes of ELVs in Region 2 and the low recovery rates reported by Region 2 facilities shows that the potential for higher recovery volumes in Region 2 is significant.



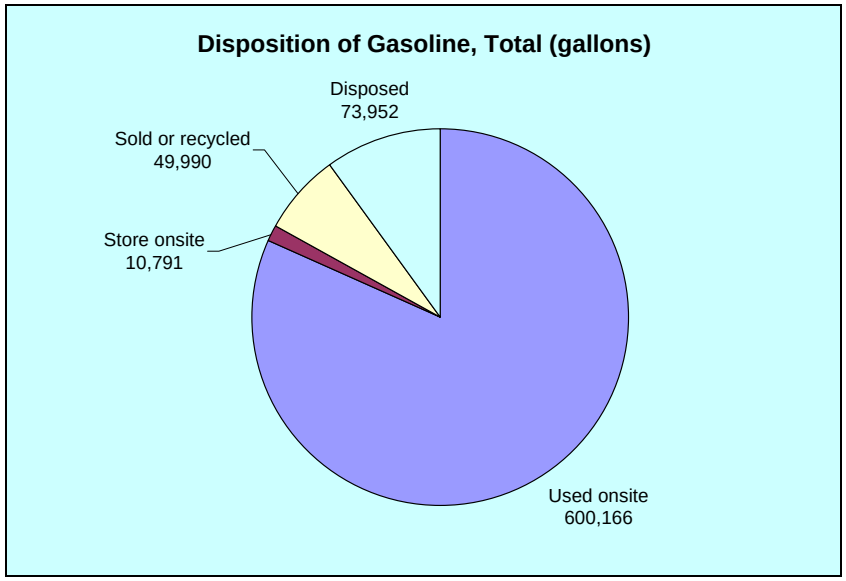


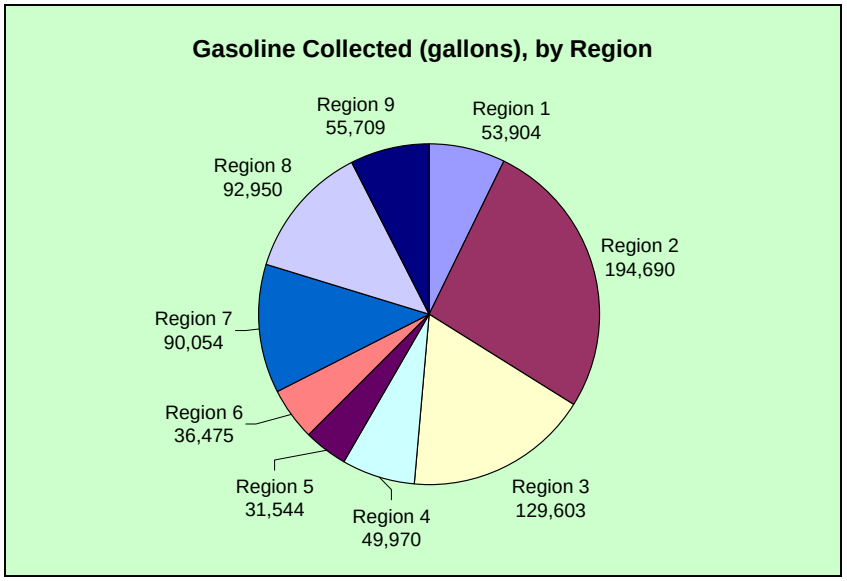




DIESEL FUEL

Statewide diesel fuel collection volumes and recovery rates for 2007 were dominated by Region 3 facilities. Region 3 volumes and rates, as mentioned above, were dominated by one facility: Brookfield Auto Wreckers. Upon verification contact by regional staff, the facility indicated that they specialize in large commercial and industrial vehicles, which often utilize diesel fuel. Looking beyond Region 3, Region 9 facilities demonstrated the highest diesel collection volume and recovery rate.

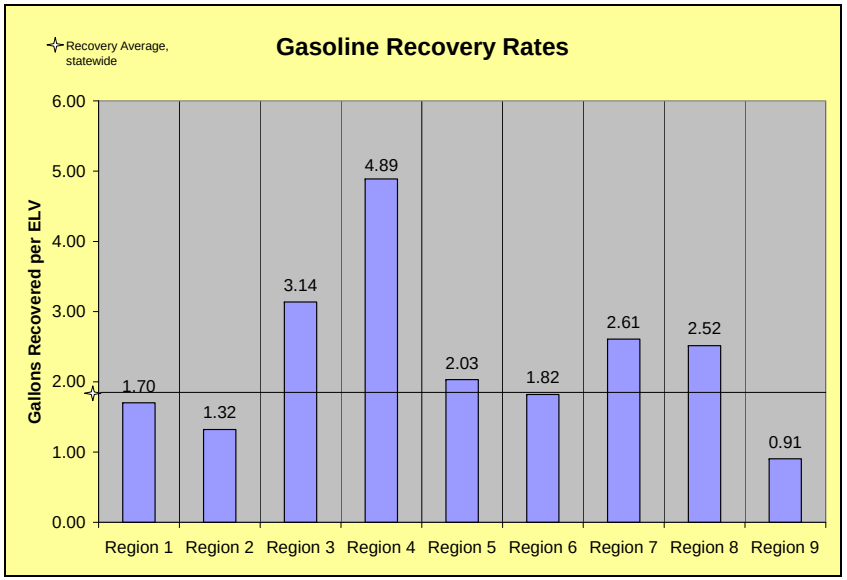


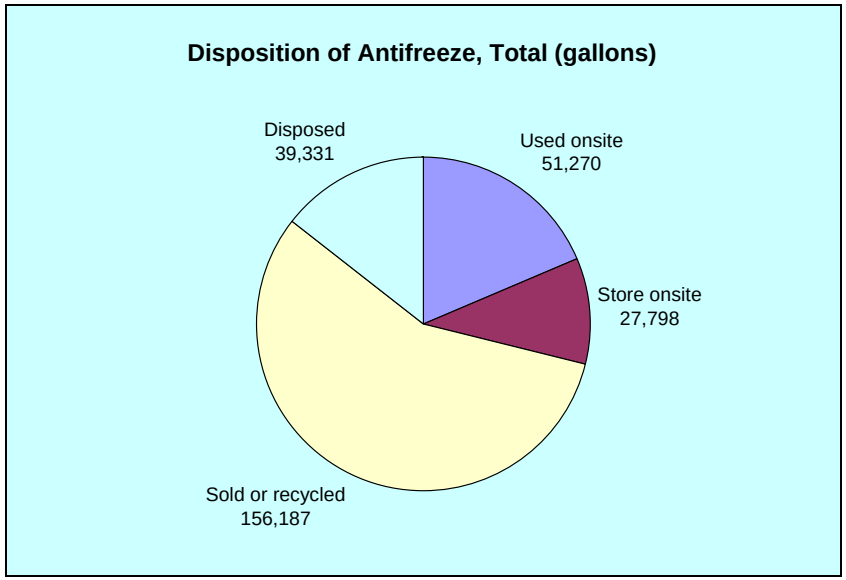


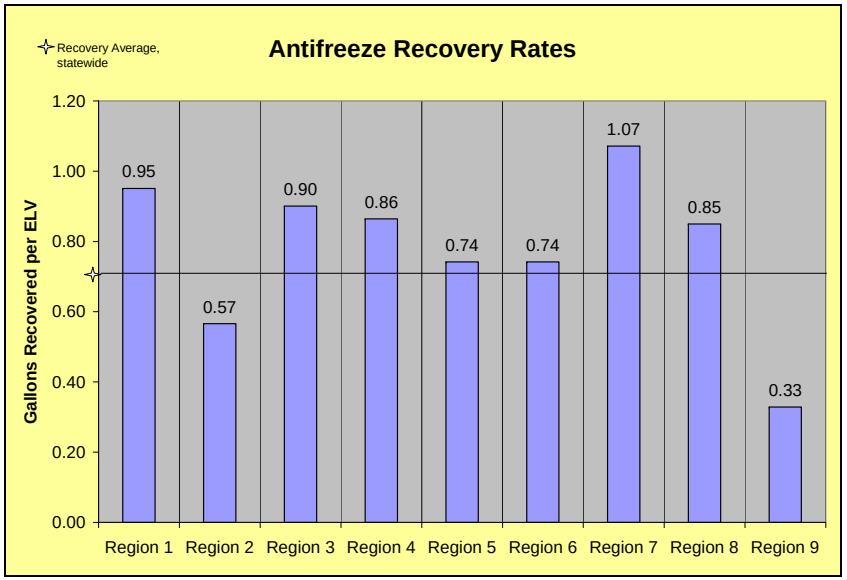
GASOLINE

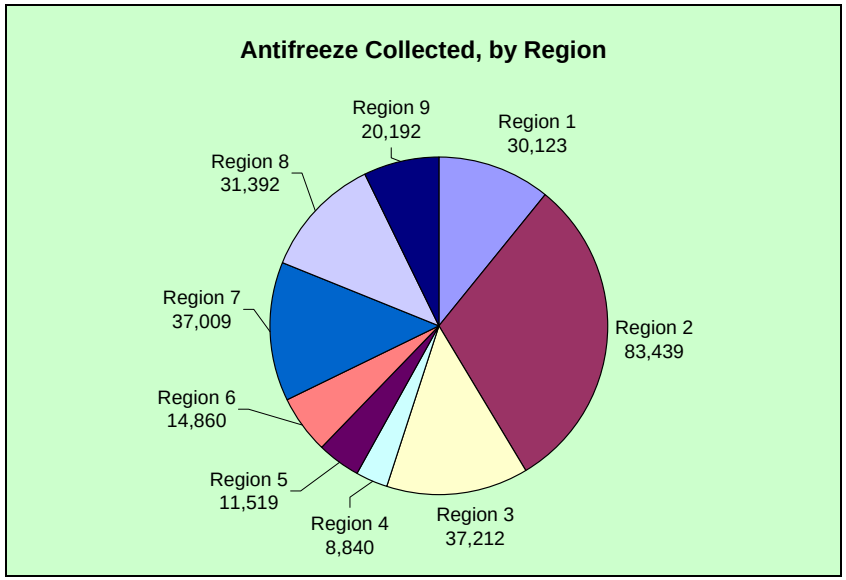
Data on gasoline disposition correlates well with anecdotal information received from VDF operators. Primarily, recovered gasoline is used in site vehicles or is given to employees or customers. Most VDF operators recognize that resale of gasoline is illegal and utilize collected gasoline in other ways.

Region 2 facilities again showed the highest volume of material recovered but low recovery rates. Region 9 facilities also show similar tendencies. Region 4 and Region 3 facilities demonstrated the highest recovery rates in the State. Region 4 data is dominated by one mobile car crusher, Otsego Auto Crushers.



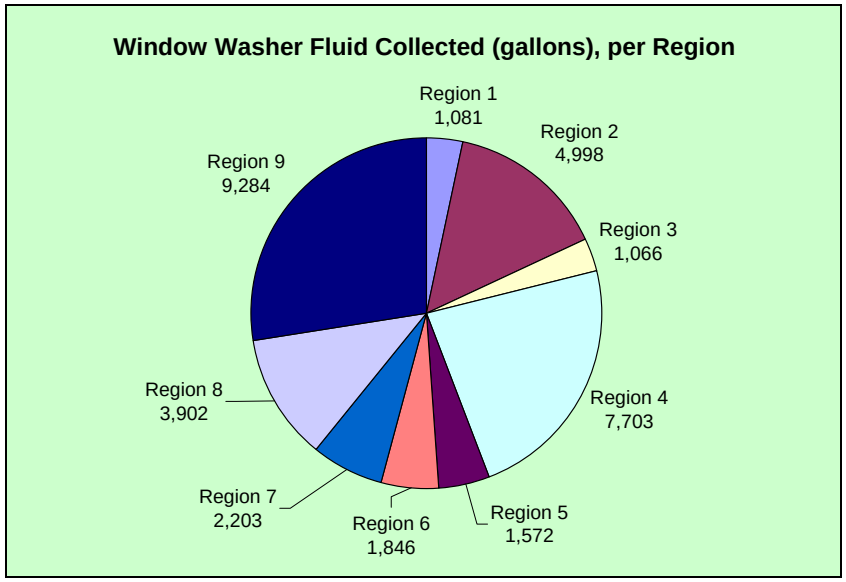


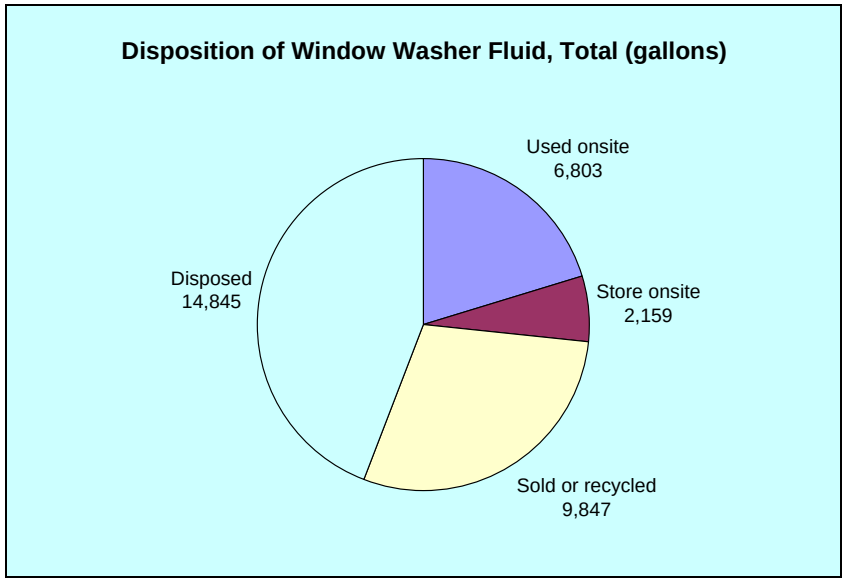


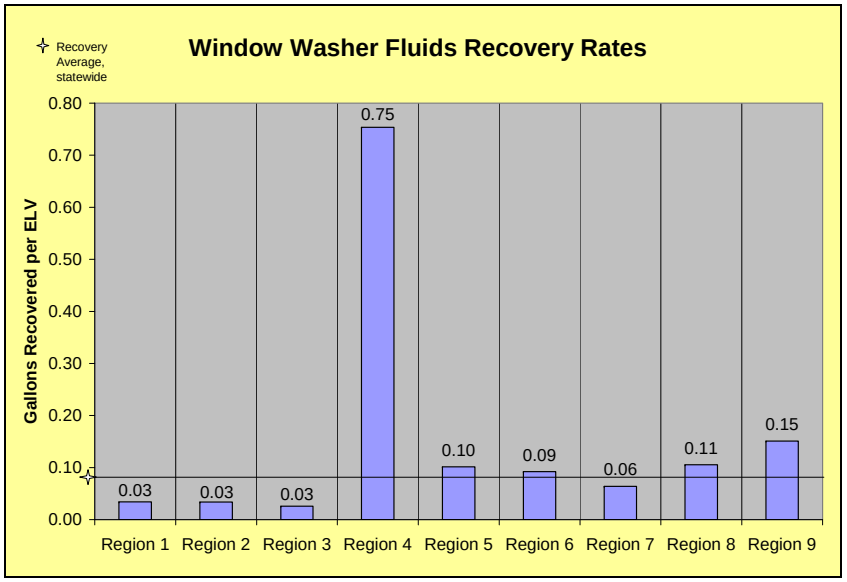


ANTIFREEZE

Antifreeze is often collected and recycled by central recyclers, while some is also resold directly at VDF facilities. Though most regions show consistency in recycling rates, Region 7 facilities demonstrate the highest rates.

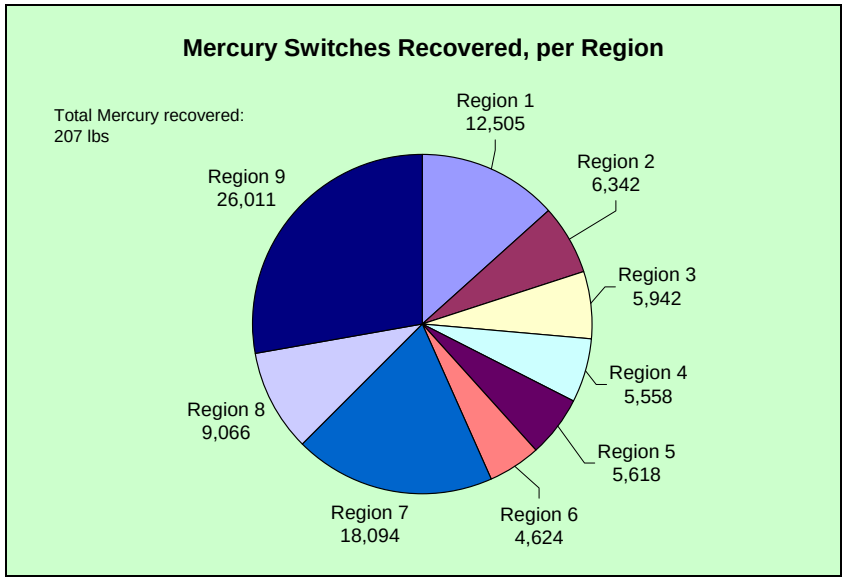


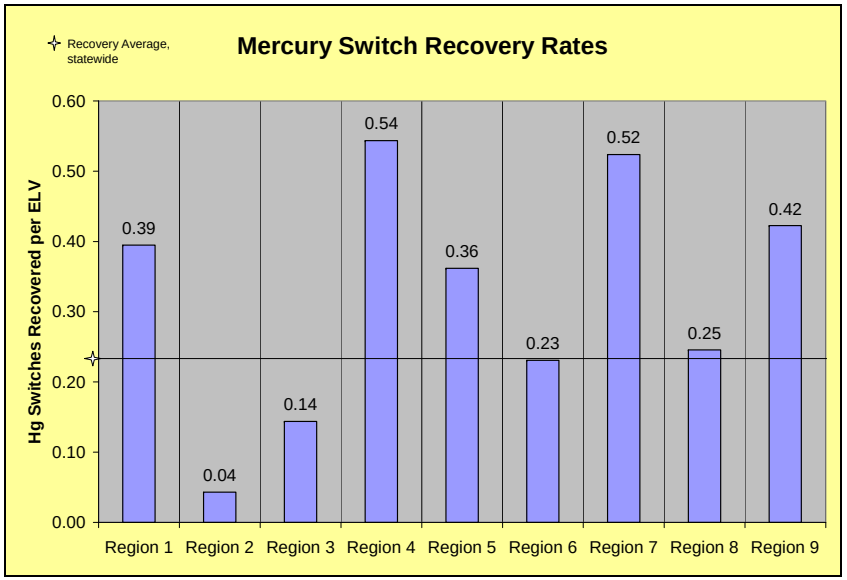




WINDOW WASHER FLUID

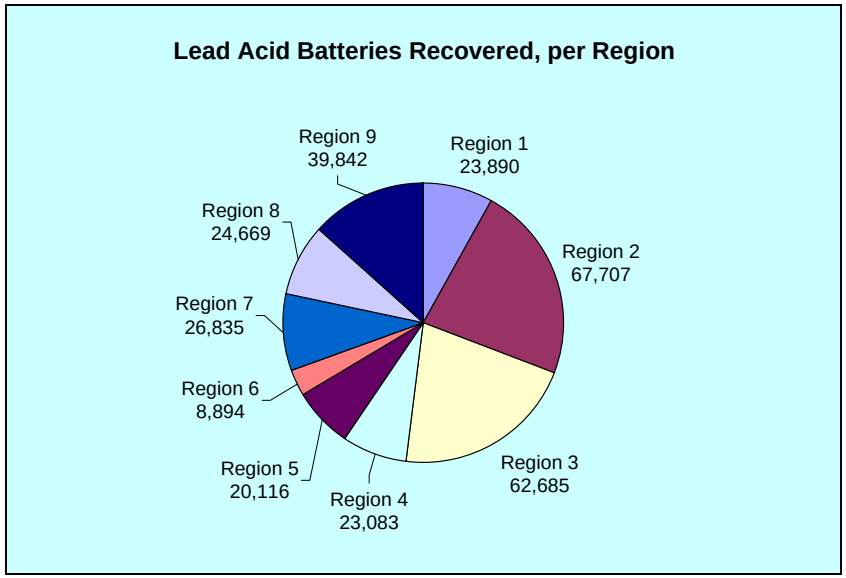
The highest percentage of recovered window washer fluid is disposed, while approximately 30% is sold/recycled. Region 4 facilities show the highest recovery rate in this sector, however, much like gasoline this number is dominated by one facility, Otsego Auto Crushers.

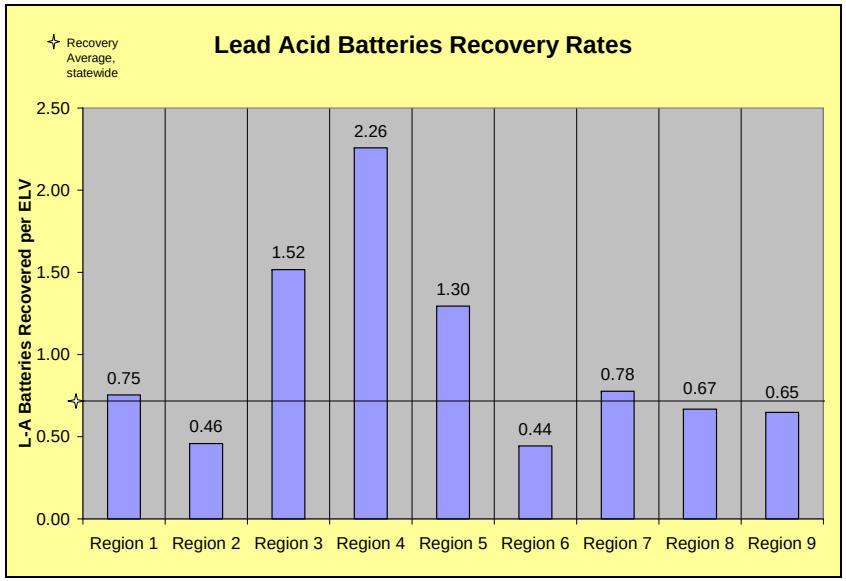




MERCURY SWITCHES

In 2006, the National Vehicle Mercury Switch Recovery Program (NVMSRP) was created to improve recovery of mercury switches from ELVs prior to crushing and shredding. This collaboration of USEPA, automobile manufacturers, industry trade groups, and environmental advocacy organizations established the End of Life Vehicle Solutions (ELVS) program, which reimbursed $1 for each switch they received. Region 9 staff were involved in the mercury switch collection effort from its earliest period, as is exemplified by the high recovery volume and recovery rates displayed by their facilities. Facilities in Regions 1, 4, 7 also reported high recovery rates. Facilities in Regions 2 and 3 displayed the lowest recovery rates. ELVS increased its mercury switch reimbursement to $4 per switch in late 2008, which may lead to interesting comparisons between 2007 and 2008 recovery rates.

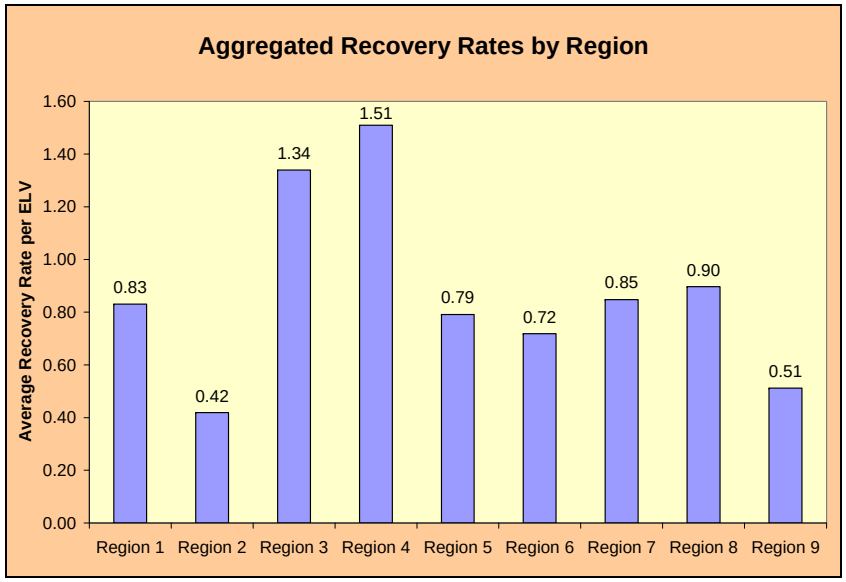




LEAD ACID BATTERIES

High scrap metal prices throughout most of 2007 were a strong incentive for recovery of lead acid batteries. Region 2 facilities exhibited similar characteristics here as they had with previous materials, with large recovery volumes but low recovery rates. Region 3 facilities showed both high volumes and rates, while Regions 4 and 5 also showed high recovery rates.

Recovery rates above one battery per vehicle may be attributable to separate collection activities or carryover of battery inventories from previous years.



AGGREGATED REGIONAL RECOVERY RATE

The aggregated regional recovery rate is the average of all the material recovery rates for a given region. The term is not directly applicable to actual field results, but may be useful as an indirect assessment of waste recovery efforts in a given region. Comparison of 2007 aggregated regional recovery rates with those to be calculated for 2008 will give more indication of this specific parameter's usefulness.

SELF-CERTIFICATION CHECKLIST RESULTS

Number of Violations	Question	
26	1.	Does your facility store less than 1,000 tires? If more than 1000, do you hold a Part 360 Permit for tire storage?
26	18e.	Proper deployment and/or removal of safety air bags?
25	7.	Does your facility have a written Contingency Plan?
18	3.	Have you recorded the date of receipt for all end-of-life vehicles received?
18	23.	Are containers stored on a bermed pad constructed of concrete or equivalent material?
16	36.	Are used oil filters properly drained, crushed or dismantled?
15	2.	Is a system in place to control vegetation and prevent it from encroaching onto fire access lanes or driveways?
15	16.	Are fluids drained from end-of-life vehicles on a pad constructed of concrete or equivalent material?
13	27.	Are leaking lead-acid batteries, if any are encountered, stored in leakproof containers separated from intact batteries? Are provisions in place to absorb any acid leakage?
11	4.	Are the end-of-life vehicle records available on-site?
10	8.	Are facility personnel trained to implement the Contingency Plan?
10	32b.	If space heater is used: Do on-site space heaters burn only used oil that is generated on-site or received from household do-it-yourself generators?

ECL 27-2303(1) requires that the number and nature of all violations be reported to the Department in a facility's annual report. In the 2007 VDF Annual Report Form, approximately 42 questions were asked of facilities related to their compliance with Article 27, Title 23 requirements. The results are included here, sorted by highest reported non-compliance. Some violations, such as Questions 3, 4, 7, and 8, are easily remedied with simple paperwork adjustments and are expected to dissipate in the 2008 data. Others, such as Questions 2, 27, 36, and 32b, involve operating procedures

SELF-CERTIFICATION CHECKLIST RESULTS (continued)

Number of Violations	Question	
9	15.	Is access to your facility controlled by: fences, gates, sign and/or natural barriers (not vehicles)
9	37.	Are drained oil filters properly recycled or disposed?
8	12.	Is dust controlled to prevent interference with facility operations or from leaving facility site?
8	26.	Are all lead-acid batteries sent for recycling within one-year of receipt?
8	28.	Are mercury switches and other mercury containing devices stored in appropriate, labeled containers and then sent for recycling?
7	9.	Does your Contingency Plan include actions to be taken in the event of the following? Fire. Spill or Release. Unauthorized material
7	22.	Are containers clearly and legibly labeled to describe their contents?
7	32a.	If space heater is used: Is used oil burned in a used oil space heating unit, with a maximum capacity of 0.5 million BTU's per hour or less?
6	25.	Are lead-acid batteries covered to protect them from precipitation?
6	29.	Are PCB capacitors, if any are encountered, removed and stored in an appropriate, labeled containers for recycling or disposal?
5	18c.	Proper draining/removal of: Mercury switches or other mercury containing devices, if any.
5	18f.	Proper draining/removal of: PCB capacitors, if any
5	31.	Is used oil transported off-site via a permitted hauler?

which should be easily correctible with addition training and guidance. Facilities in violation of Questions 23 and 16 must upgrade their facilities' physical plant to include storage and drainage floors constructed of concrete or equivalent material. Many facilities have already implemented these upgrades.

Questions 1 and 18e involve broader, more long-term issues that are being addressed by the Department. Illegal storage of tires is a historic problem at VDFs. Permits to store greater than 1,000 tires are available from the Department, and a program

for remediating illegal tire piles is proceeding. Airbags are a special issue in New York State, given that New York is the only state where resale of airbags on a secondary market is illegal. VDF personnel have asked the Department for additional training in proper deployment of airbags, or, preferably for them, support for an amendment to the statutes so that they can derive value from what in other states is a primary commodity in the automobile recycling industry.

CONCLUSION AND RECOMMENDATIONS

The reporting rate of VDFs in 2007 is highly encouraging, given that this was the first full year in which the requirements of Article 27, Title 23 were in place. Further outreach and maturation of the program, along with enforcement against non-reporters, should increase reporting rates even further.

First, a few observations: in many instances seen above, data from large facilities with high recovery rates and recovery volumes drove data analysis results and skewed overall regional recovery rates and recovery volumes. The results are correct for the region, but do not represent the average facility. In future analyses, we will look for ways to differentiate large- and small-scale operations in order to more accurately summarize how each type of facility performs.

Similarly, many factors may contribute to variations in recovery rates among regions. Area-specific operations may result in ELVs that are delivered to VDFs with empty gasoline tanks, for example, which in turn would lead to low recovery rates for gasoline in that region. Facility operations may have no bearing at all. However, now that we can see these variations

across regions, it is essential for regional staff to investigate the causes of low recovery rates to ensure that materials are not lost to the environment, causing harm to human health and the environment.

Three major conclusions are observable from the data presented above:

1) The recovery rates analyzed above seem to indicate that highly efficient removal operations are distributed across the State based on material. Region 1 facilities show high recovery rates in antifreeze; Region 3 facilities in used oil, diesel, gasoline, and battery recovery; Region 4 in gasoline, windshield washer fluid, mercury switches, and batteries; Region 7 in refrigerant, antifreeze, and mercury switches; and Region 9 in diesel, windshield washer fluid, and mercury switches. Each region should be encouraged to investigate the operating practices of highly efficient facilities, so that this expertise can be collected and distributed to lower-operating areas of the State.

2) Data indicate that almost half of facilities are small operators taking in less than 100 ELVs per year. High numbers of smaller facilities increase the difficulty and expense of inspection, compliance enhancement, and enforcement. In areas where low-throughput, high storage area facilities are located, Department staff should focus on facilities' leak inspection procedures, continuing leak observation procedures, and timely decommissioning of ELVs, since long storage times could lead to increased soil and water contamination in the storage areas. Data also suggest that the majority of ELVs are handled by a few high-throughput facilities. The top 16 facilities handle 46% of New York's ELVs, while the top 80 facilities handle 81%. Clearly, increased focus

on compliance and operating procedures at these facilities could lead to increased material collection volumes and compliance rates on a per car basis. These facilities should be directed towards improved and enhanced decommissioning operating procedures to maximize fluids and material recovery. High-throughput facilities are located in almost every region; however, most operate in Regions 2 and 9.

3) Data also indicate that during 2007, an inventory of ELVs was not accumulating in VDF storage. The Department concludes that favorable economic conditions and scrap metal markets drove this condition of high throughput and low storage buildup. In light of current economic conditions, VDFs with large storage capacity may begin to collect ELVs without processing them, in anticipation of higher metal prices in the future. The Department must remain vigilant under these circumstances as long-term storage and potential improper management may affect environmental conditions.