

APPENDIX C

1995/95 WASTE CHARACTERIZATION STUDY

Sonoma County
Department of Transportation and Public Works
Integrated Waste Division

1995/96
Waste Stream Characterization Study
Final Report

prepared by
Cascadia Consulting Group, Inc.

in association with
Sky Valley Associates

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1. Introduction

Effective solid waste management planning and service delivery begins with knowing what is in the waste stream - how much of which types of material are disposed. This basic information is essential to all aspects of policy and program implementation. Therefore, the Sonoma County Department of Transportation and Public Works Integrated Waste Division commissioned a waste stream characterization study with two primary parts: a vehicle survey and comprehensive waste composition study. Cascadia Consulting Group served as the primary contractor for this project, and Sky Valley Associates performed the fieldwork.

The County's objectives for this study included:

- gathering information for characterizing the total waste stream
- obtaining data to compare with the 1991 EMCON Solid Waste Generation Study, and performing analyses to measure the success of recent waste diversion efforts
- determining the types and amounts of potentially recyclable materials remaining in Sonoma County's disposed waste stream
- understanding the differences between substreams so that targeted recycling programs can be designed, implemented, and monitored in the future

The purpose of this report is to present the results of the waste sampling and vehicle survey, and to compare them with the 1991 EMCON report.

To reach the goals which Sonoma County set forth, the Cascadia Team undertook a series of tasks, beginning with the collection of detailed data from waste haulers on the quantities of waste disposed by both commercial and residential generators. These data were used to construct a sampling plan that specified which vehicles were to be selected for sampling.

Field sampling was conducted in July and August of 1995, and in January and February of 1996. These two time periods were selected to account for differences in waste disposed between the dry and wet seasons typical of the climate in Sonoma County. A description of sampling methodology follows below in Section 2.2. The data gathered during the sampling periods were entered into a database twice and compared to eliminate errors, and composition estimates for each substream (commercial, residential, and self-haul) were calculated. A set of weighted data tables were prepared and are included in this report.

For each substream, 1995 tonnage estimates and corresponding composition estimates were combined to create an overall annual profile of disposed waste. These data, together with a description of methodology and results, are presented in this report.

It is important to note that the 1995 overall disposed tonnage figure used in this report (412,529.59 tons) does not include 11,800 tons of biosolids disposed at Sonoma County's landfills during calendar year 1995. Biosolids were excluded from the study to better match previous solid waste studies performed for Sonoma County, which also excluded this waste. If biosolids are considered as part of Sonoma County's total waste stream, the disposed tonnage figure rises to 424,329.59 tons; biosolids represent 2.8% of that total.

2. Overview of Methodology

2.1 Vehicle Survey

The purpose of the vehicle survey was to obtain data regarding the numbers of each vehicle type by substream (residential, commercial, self-haul, or mixed), generator class (for the commercial substream only), and city of origin. These data, along with net vehicle weights from sample loads, were used to estimate total tonnage amounts for each substream.

As each vehicle approached the scalehouse, the surveyor observed and recorded the vehicle type. All vehicles were asked if their load contained clean green or wood for chipping, and in what city the load originated. If the vehicle was from a franchised hauling company, the driver was asked if his/her load was *residential*, *commercial*, or *mixed residential/commercial* in origin. Drivers with commercial loads were also asked to identify the type(s) of businesses or industries that generated the waste, choosing from a list which the surveyor provided. Self-haul drivers were asked if their loads were *commercial* or *residential* in nature, and if their load was primarily *construction and demolition debris*, or *mixed garbage*.

2.2 Waste Sorting and Characterization

The objective of waste sorting was to develop reliable estimates of wastes arriving at four of Sonoma County's disposal facilities, including the Central Landfill and the Guerneville, Healdsburg, and Sonoma Transfer Stations. The goal of this project was to sample systematically a total of 400 loads of waste divided equally between two sampling periods, one in July/August 1995 and the other in January/February 1996, to account for seasonal differences. Appendix B contains a detailed description of the methodology used to derive a sampling plan.

To maximize sorting crew efficiency, the sampling plan calls for 20 loads to be sorted per day, for a total of 20 days. These 20 days were divided equally between the sampling periods and distributed among the four disposal sites based upon the tonnages handled by each facility. The tonnage information was gathered from County data collected from January 1994 through April 1995.

The 400 samples were divided among three substreams, defined in Section 2.3 below, in the following manner:

- 100 residentially generated loads
- 150 commercially generated loads
- 150 self-hauled loads

More loads were allotted to the *commercial* and *self-haul* substreams to account for the greater variation among loads from these substreams.

Information regarding the number of vehicles arriving at each station during the same day of the week last year (e.g., July 25, 1994) was utilized to estimate how many vehicles to expect. These estimates allowed the calculation of a sampling interval, e.g., whether every third, sixth, or twentieth vehicle was to be sorted. Table 2.2.1 illustrates how sample loads were apportioned among the substreams and the transfer stations by date during the sampling periods.

Allocation of Samples by Date, Transfer Station, and Substream

Date	Site	Samples		
		Commercial	Residential	Self-Haul
7/24/95	Central	4	8	6
7/25/95	Central	8	9	6
7/26/95	Sonoma	5	4	11
7/27/95	Healdsburg	4	5	9
7/28/95	Guerneville	3	5	11
8/21/95	Central	8	6	6
8/22/95	Central	8	6	6
8/23/95	Central	7	6	6
8/24/95	Central	8	6	6
8/25/95	Sonoma	4	4	12
1/22/96	Sonoma	6	4	10
1/23/96	Healdsburg	6	5	9
1/24/96	Guerneville	5	3	12
1/25/96	Central	8	6	6
1/26/96	Central	8	6	5
2/12/96	Healdsburg	8	4	9
2/13/96	Central	8	5	7
2/14/96	Central	8	6	6
2/15/96	Central	8	5	7
2/16/96	Central	8	6	6
TOTAL		132	109	156

On sort days, vehicles were selected at the gate using the predetermined quota for each vehicle type. The selected drivers were then interviewed to determine the origin of their load (jurisdiction), the customer class (*construction and demolition, manufacturing, food and lodging, etc.*), and the source of the materials (*residential, commercial, self-haul*). Samples were extracted from the vehicle, hand-sorted into the prescribed component categories defined in Appendix A, and weighed. The raw data were checked by the director of field operations, and then entered into Excel spreadsheets to facilitate presentation and analysis.

2.3 Definitions of Waste Substreams

The total disposed waste stream is composed of various substreams. A “substream” is defined by the particular generation, collection, and disposal characteristics which make it a unique portion of the total waste stream. This study focused on the following waste substreams:

- **Residential** -- waste collected by commercial or public haulers which is 90% or more from single-family residences, multifamily residences, or a combination of single- and multifamily residences.
- **Commercial** -- waste collected by commercial or public haulers which is 90% or more from business, industry, government, and institutional generators.

- *Self-haul* -- any wastes that are hauled to the landfill or transfer station(s) by any vehicle other than commercial vehicles engaged in waste collection services.
- *Mixed* -- waste collected by commercial or public haulers which contains a mix of residential and commercial wastes where neither substream contributes more than 90% of the load. Usually, these loads consist primarily of commercial wastes and include multifamily wastes disposed in commercial dumpsters. It is important to note that in this study, such loads were counted as mixed in the vehicle survey but were *sorted* as commercial loads.

3. Vehicle Survey and Related Data

3.1 Tabulated Results of Vehicle Survey

The following tables present the results of the vehicle survey conducted during both the dry and wet sampling periods. Table 3.1.1 illustrates the distribution of vehicle loads by substream.

Table 3.1.1
Number of Vehicle Loads by Substream
(July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

<u>Substream</u>	<u>Count</u>	<u>Percent</u>
Self-Haul	4746	75%
Residential	768	12%
Commercial	714	11%
Mixed Residential and Commercial	99	2%
Total	6327	100%

As the table shows, far more self-haul vehicles arrived at Sonoma County's four facilities during the study period than any other type of vehicle. Nearly two-thirds of these 4,746 vehicles were *residential self-haul vehicles*; the remaining third were *commercial self-haul vehicles*, as Table 3.1.2 illustrates.

Table 3.1.2
Distribution of Self-Haul Vehicles Between Residential and Commercial Generators
(July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

<u>Self-Haul Substream Generators</u>	<u>Count</u>	<u>Percent</u>
Residential	3424	72%
Commercial	1322	28%
Total	4746	100%

The drivers of self-haul vehicles also were asked to characterize their loads as either *mixed garbage* or *construction and demolition*. Table 3.1.3 provides the tabulated results of that inquiry. Although most (68%) of the loads were characterized as *mixed garbage*, a significant

percentage (12%) were *construction and demolition* loads. Most of the *construction and demolition* loads were from the commercial self-haul substream.

Table 3.1.3
Distribution of Self-Haul Loads by Description
 (July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

Description	Commercial	Residential	Total Percent	
			Self-Haul	of Total
Construction & Demolition	401	184	585	12%
Mixed Garbage	666	2541	3207	68%
No Response	255	699	954	20%
Total	1322	3424	4746	100%

Haulers were also asked to characterize their commercial loads by seven customer classes. Table 3.1.4 lists the number of loads per customer class for the commercial substream. As the table shows, the *other commercial*, *construction and demolition*, and *wholesale/retail/warehouse* classes send the greatest number of commercial vehicles to Sonoma County's four transfer stations. The *other commercial* category included those vehicles which had collected waste from a *combination* of the customer classes (e.g. retail stores, offices, restaurants, and manufacturing facilities).

Table 3.1.4
Distribution of Commercial Vehicle Loads by Customer Class
 (July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

Customer Class	Count	Percent
Other Commercial	233	33%
Construction and Demolition	144	20%
Wholesale/Retail/Warehouse	104	15%
Office, Govt, Other Business Services	90	13%
Institution (education, health care)	51	7%
Manufacturing	45	6%
Food and Lodging	27	4%
Blank	20	3%
Total	714	100%

All vehicles were asked if their loads contained clean green or wood waste. The results of this query are tabulated in Table 3.1.5; as the table shows, well over half of the *clean green and wood waste* loads were from the residential self-haul substream.

Table 3.1.5
Number of Clean Green and/or Wood Loads by Substream
 (July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

Substream	Clean Green		Count	Percent of Clean Green Loads
	Yes	No		
Commercial	17	697	714	1%
Mixed Residential and Commercial	1	98	99	0.1%
Residential	124	644	768	10%
Self Haul: Commercial	302	1020	1322	25%
Self Haul: Residential	754	2670	3424	63%
Total	1198	5129	6327	100%

Table 3.1.6 provides a breakdown of vehicle loads by city of origin. The vehicle count from Santa Rosa significantly exceeds that of any other city; the count from the *unincorporated county* is a distant second. The category *other city* includes all loads which originated in any city other than the ones provided in list format to the consultants by the Integrated Waste Division for use in recording the answers to this question.

Table 3.1.6
Vehicle Count by City of Origin
 (July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

City	Number	Percent
Santa Rosa	2265	36%
Unincorporated County	1216	19%
Petaluma	1105	17%
Sebastopol	552	9%
Rohnert Park	464	7%
Cotati	221	3%
Sonoma	191	3%
Healdsburg	149	2%
Windsor	83	1%
Cloverdale	42	1%
Other City	39	1%
Total	6327	100%

Lastly, as each vehicle entered the landfill or transfer station, the surveyor recorded its vehicle type. Table 3.1.7 lists the numbers of vehicles by type which entered the Sonoma County facilities during the study period. According to the table, *pick-up trucks and vans* were by far the most numerous type of vehicle. The *large other* category included all vehicles larger than passenger vehicles, vans and pick-ups which were not included in any other category. For example, flat beds and dump trucks fit into the *large other* category.

Table 3.1.7
Number of Vehicles by Type
(July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

Vehicle Type	Count	Percent
Compactor	937	15%
Debris Box: Compacted	85	1%
Debris Box: Loose	582	9%
Large Other	1141	18%
Passenger	244	4%
Pick-up/Van	3335	53%
Blank	3	0%
Total	6327	100%

3.2 Portion of Waste Disposed by Substream

Substream and vehicle type information collected during the survey and net tonnage data recorded for the sample loads were used to estimate Sonoma County's overall waste distribution. As shown in Table 3.2.1, the total tonnage attributed to each substream was calculated by multiplying the number of vehicles (of each type and in each substream) by the corresponding average load weight. (Vehicles carrying "clean green" loads were excluded from the calculation.)

Table 3.2.1
Calculation of the Overall Waste Distribution
(July 24-28, 1995; August 21-24, 1995; January 22-26, 1996; February 12-16, 1996)

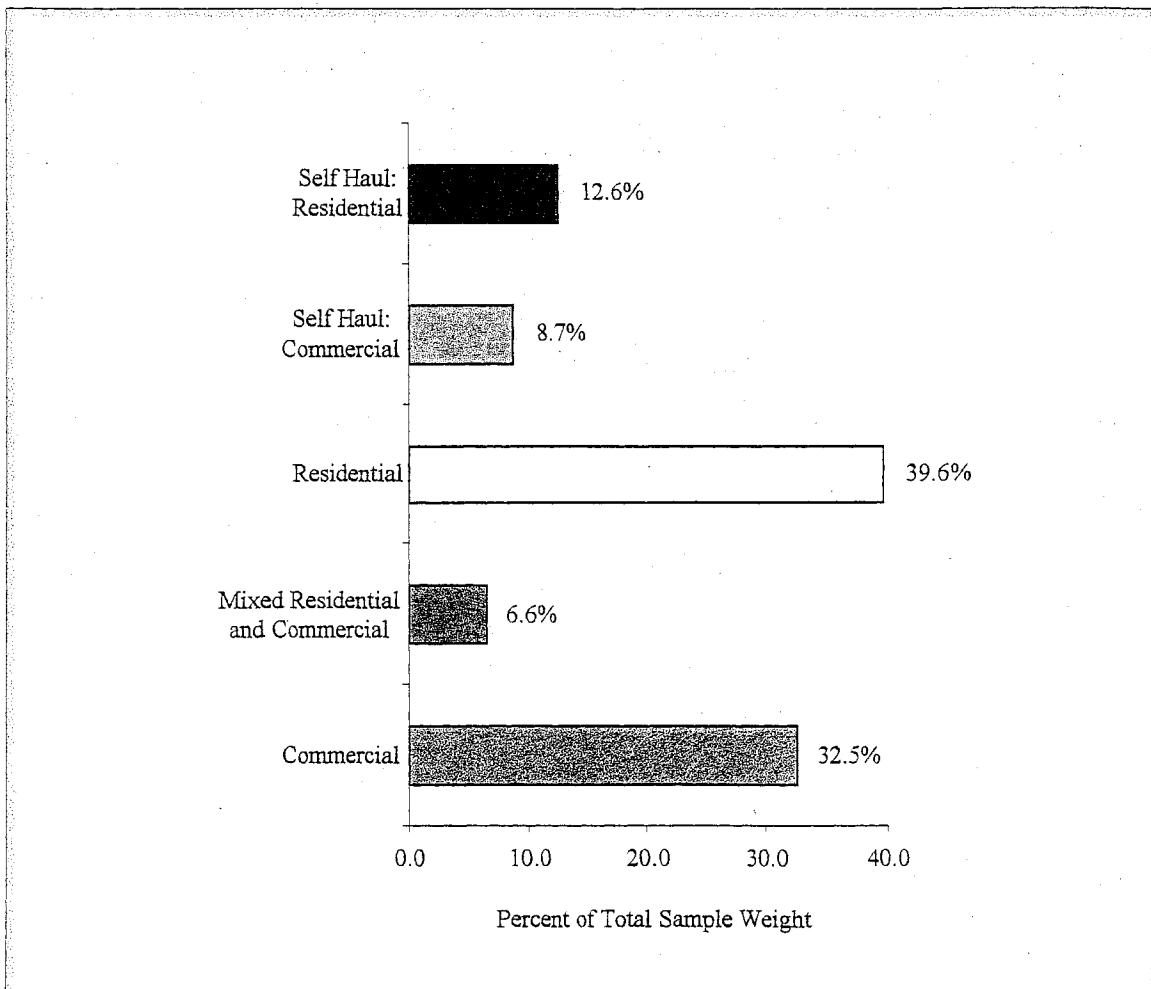
	Vehicle Count	Avg. Net Weight	Calculated Total Tons	
Commercial			3,507	32.5%
Compactor	240	7.64	1,832	
Debris Box: Compacted	78	4.49	350	
Debris Box: Loose	378	3.50	1,325	
Mixed Residential and Commercial			716	6.6%
Compactor	90	7.64	687	
Debris Box: Compacted	1	4.49	4	
Debris Box: Loose	7	3.50	25	
Residential			4,264	39.6%
Compactor	485	7.64	3,703	
Debris Box: Compacted	4	4.49	18	
Debris Box: Loose	155	3.50	543	
Self Haul: Commercial			940	8.7%
Compactor	9	7.64	69	
Debris Box: Compacted	10	3.50	35	
Large Other	538	1.19	641	
Passenger	10	0.15	1	
Pick-up/Van	452	0.43	194	
Self Haul: Residential			1,354	12.6%
Large Other	354	1.19	422	
Passenger	212	0.15	31	
Pick-up/Van	2,103	0.43	901	
Total	5,126		10,781	100.0%

Table 3.2.2 and Figure 3.2.1 show the percentage of the sample weights which each substream represents. These percentages were applied to the total Sonoma County 1995 disposal figure to project annual tons by substream. These data were used to calculate a weighted average overall waste composition in Sonoma County.

Table 3.2.2
Percentage of Total Sample Weight (Tons) by Substream for the Sampling Period and Annual Projections

Substream	Total Net Weight of Samples	Percent of Total Sample Net Weight	Projected Annual Tons
Commercial	3,507	32.5%	134,194
Mixed Residential and Commercial	716	6.6%	27,397
Residential	4,264	39.6%	163,160
Self Haul: Commercial	940	8.7%	35,969
Self Haul: Residential	1,354	12.6%	51,810
Total	10,781	100%	412,530

Figure 3.2.1
Percentage of Total Sample Weight by Substream



4. Waste Composition Data

During the study period, 397 loads were sorted into 67 different components, definitions of which are in Appendix A. At the conclusion of sampling, the sort data were analyzed to characterize the entire waste stream, as well as the following three substreams:

1. Residential
2. Commercial
3. Self-Haul

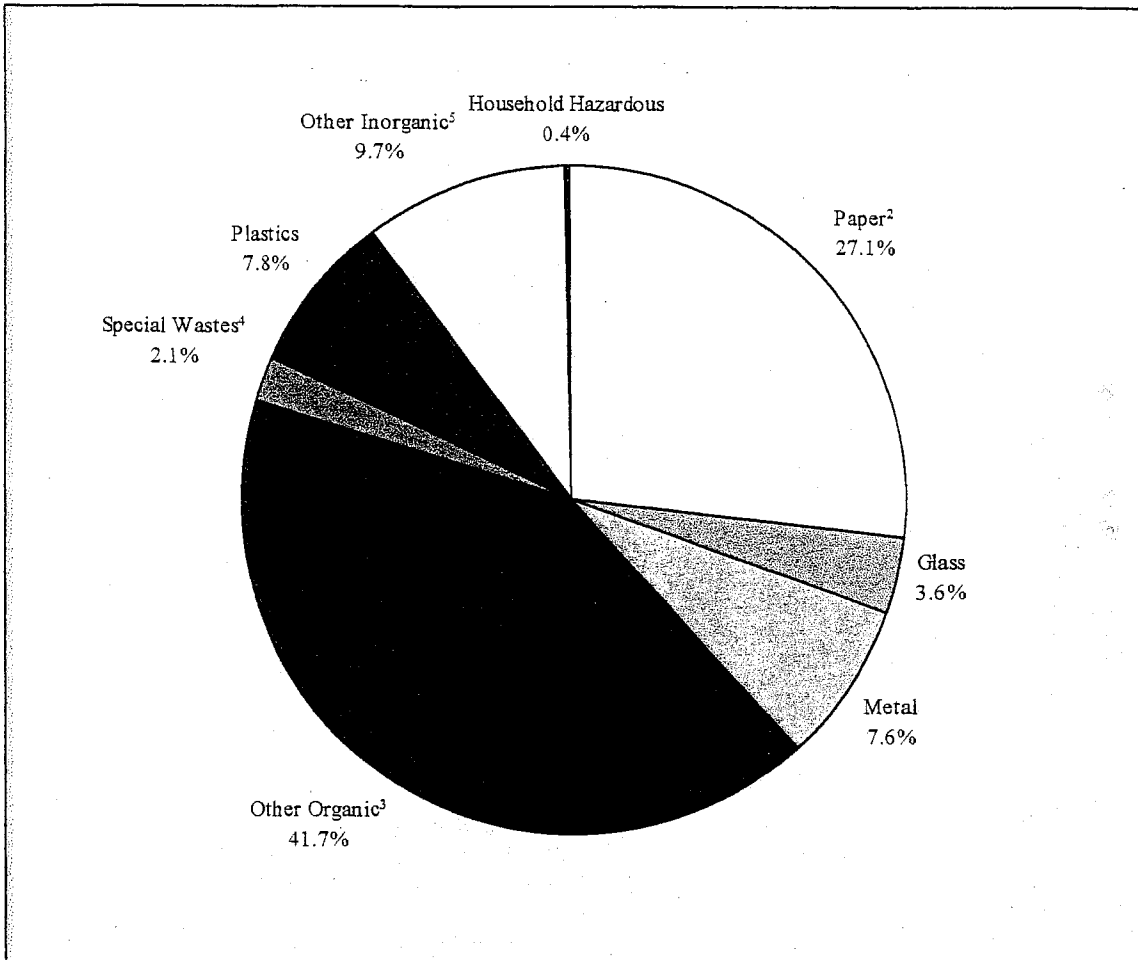
Figures 4.1.1 through 4.4.1 and Tables 4.1.1 through 4.4.3 illustrate the results of the waste characterization study, which Sections 4.1 through 4.4 summarize. The waste characterization has been calculated at a 90% confidence level. This means that we are 90% sure that any waste category percent will fall within the range shown on the tables.

4.1 Sonoma County Overall Waste Stream

As shown in Figure 4.1.1 and Table 4.1.1, *other organics* (41.7%) and *paper* (27.1%) were the two largest categories of waste in the Sonoma County waste stream during the study period.

Food (13.4%) and *wood* (10.2%) dominated the *other organics* category, although *leaves and grass* (4.3%) also contributed a noteworthy amount of waste. Sonoma County residents and businesses also disposed of considerable amounts of *other mixed paper* (7.4%), *remainder/composite paper* (6.4%), and *uncoated corrugated paper* (4.9%).

**Figure 4.1.1
Sonoma County Overall Waste Stream
Composition Percentages by Weight 1995/96 ¹**



¹ Waste sampling conducted in July and August of 1995 and January and February of 1996.

² The *paper* category includes such materials as *uncoated corrugated paper* (4.9%), *newspaper* (2.8%), and *remainder/composite paper* (6.4%).

³ The *other organic* category includes *food* (13.4%), *wood* (10.2%), *leaves and grass* (4.3%), and *prunings and trimmings* (2.4%).

⁴ The *special wastes* category includes *bulky items* (1.6%), *ash* (0.2%), and *treated medical waste* (0.1%).

⁵ The *other inorganic* category includes *concrete* (2.3%), *asphalt* (2.0%), and *soil and fines* (2.0%).

**Table 4.1.1
Sonoma County Overall Waste Stream
Composition Percentages by Weight**

Percent at 90% Confidence Interval

	Tons	Percent		Tons	Percent
PAPER	111,652	27.1%	PLASTICS	32,185	7.8%
Uncoated Corrugated	20,125	4.9%	#2 HDPE Natural RPPC	1,201	0.3%
Coated Corrugated	2,697	0.7%	#2 HDPE Colored RPPC	1,704	0.4%
Brown Paper Bags	4,714	1.1%	#1 PET RPPC	1,205	0.3%
Newspaper	11,475	2.8%	#1 PET Products/Packaging	92	0.0%
White Ledger	3,589	0.9%	Film Packaging	14,019	3.4%
Colored Ledger	695	0.2%	#3 PVC RPPC	175	0.0%
Computer Paper	217	0.1%	#4 LDPE RPPC	48	0.0%
Other Office Paper	392	0.1%	#5 PP RPPC	322	0.1%
Magazines and Catalogs	7,493	1.8%	#6 PS RPPC	137	0.0%
Phone Books and Directories	1,113	0.3%	#7 and Uncoded RPPC	349	0.1%
Other Mixed Paper	30,437	7.4%	#2 HDPE Products/Packaging	389	0.1%
Remainder/Composite Paper	26,489	6.4%	#3 PVC Products/Packaging	913	0.2%
Milk Cartons and Drink Boxes	2,215	0.5%	#4 LDPE Products/Packaging	9	0.0%
GLASS	14,866	3.6%	#5 PP Products/Packaging	127	0.0%
Clear Bottles and Containers	5,869	1.4%	#6 PS Products/Packaging	2,272	0.6%
Green Bottles and Containers	2,443	0.6%	#7 and Uncoded Products/Packaging	3,827	0.9%
Brown Bottles and Containers	2,355	0.6%	Polyurethane	2,192	0.5%
Flat Glass	1,470	0.4%	Other Mixed Plastic and Material	3,202	0.8%
Remainder/Composite Glass	2,729	0.7%	OTHER INORGANICS	40,188	9.7%
METAL	31,239	7.6%	Rock	2,536	0.6%
Tin/Steel Cans	4,960	1.2%	Concrete	9,369	2.3%
Other Ferrous	13,119	3.2%	Brick	1,221	0.3%
Aluminum Cans	1,501	0.4%	Soil and Fines	8,212	2.0%
Other Non-ferrous	2,159	0.5%	Asphalt	8,073	2.0%
White Goods	993	0.2%	Gypsum Board	4,585	1.1%
Remainder/Composite Metal	8,507	2.1%	Remainder/Composite Inorganic	6,191	1.5%
OTHER ORGANIC	172,120	41.7%	HOUSEHOLD HAZARDOUS	1,784	0.4%
Food	55,186	13.4%	Paint	264	0.1%
Leaves and Grass	17,873	4.3%	Automotive Fluids	312	0.1%
Prunings and Trimmings	9,904	2.4%	Household Batteries	211	0.1%
Branches and Stumps	1,776	0.4%	Vehicle Batteries	332	0.1%
Agricultural Crop Residue	0	0.0%	Remainder Composite HHW	666	0.2%
Manure	0	0.0%	SPECIAL WASTES	8,497	2.1%
Wood	42,007	10.2%	Bulky Items	6,588	1.6%
Textiles	9,662	2.3%	Ash	737	0.2%
Tires	591	0.1%	Industrial Sludge	0	0.0%
Miscellaneous Organics	7,173	1.7%	Treated Medical Waste	465	0.1%
Mixed Textiles/Materials	11,414	2.8%	Remainder Composite Special	707	0.2%
Animal By-Products	9,401	2.3%			
Disposable Diapers/Fem Hygiene	7,132	1.7%			
TOTAL	412,530	100.0%			

4.2 Residential Substream

This section describes the waste composition of the residential substream. Section 4.2.1 details the overall residential substream, while Sections 4.2.2 and 4.2.3 concern the residential substream during the wet and dry sampling periods respectively. In all of the tables which augment these discussions, the term “range” refers to the spread of possible values, indicated by the “+/-” or confidence interval column, within which the mean value for a given component’s composition percentage should fall nine times out of ten. For example, in the overall residential waste stream, the mean composition percentage of newspaper is 3.9%, with a confidence interval of +/- 0.4%. Therefore, nine times out of ten the mean composition percentage by weight of newspaper will be between 3.5% and 4.3%.

4.2.1 Overall Residential Substream

As shown in Figure 4.2.1 and Table 4.2.1, *other organics* (42.1%) account for the largest portion of the residential substream, followed by *paper* (32.3%).

At a more detailed level, *food* (18.2%) is the largest segment of the *other organics* category, while *animal by-products* (3.9%), *leaves and grass* (3.9%), *textiles* (3.3%), and *wood* (3.0%) each contribute a considerable amount. *Other mixed paper* (9.7%) and *remainder/composite paper* (8.0%) comprise the majority of the *paper* component, but it should be noted that residences in Sonoma County still dispose of substantial amounts of *newspaper* (3.9%) and *uncoated corrugated paper* (3.5%).

4.2.2 Residential Substream: Wet Sampling Period

During the wet sampling period, *other organics* (40.3%) and *paper* (35.7%) composed the two greatest segments of the residential substream, as Table 4.2.2 shows.

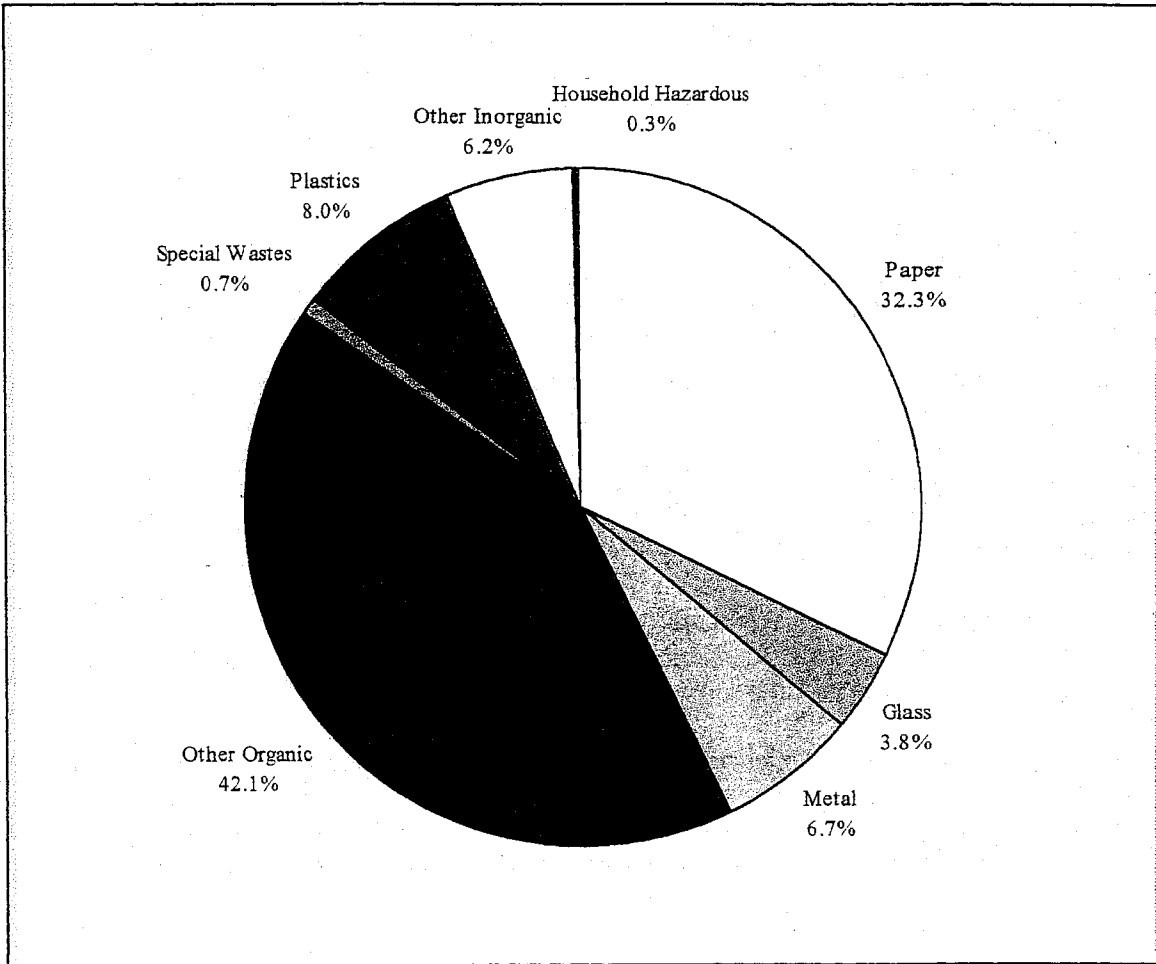
Food (18.2%) is the largest component within the *other organics* category, followed by *animal by-products* (5.3%), *prunings and trimmings* (4.1%), and *leaves and grass* (3.7%). *Remainder/composite paper* (8.9%) and *other mixed paper* (8.4%) again form the two greatest components of the *paper* category, and *uncoated corrugated paper* (4.4%) and *newspaper* (4.2%) are again significant.

4.2.3 Residential Substream: Dry Sampling Period

Other organics (43.6%) and *paper* (29.2%) were the two largest categories of the residential substream during the dry sampling period, as Table 4.2.3 illustrates.

The greatest component within the *other organics* category was *food* (18.1%), with *wood* (4.4%), *leaves and grass* (4.1%), and *textiles* (4.1%) each contributing noteworthy amounts. Within the *paper* category, *other mixed paper* (10.8%) dominated, with *remainder/composite paper* (7.1%) not far behind. *Newspaper* (3.7%) and *uncoated corrugated paper* (2.7%) were still significant.

Figure 4.2.1
Residential Substream
Composition Percentages by Weight



**Table 4.2.1
Residential Substream
Composition Percentages by Weight**

Percent & Range at 90% Confidence Interval

	Tons	Percent	+/-		Tons	Percent	+/-
PAPER	52,637	32.3%		PLASTICS	13,098	8.0%	
Uncoated Corrugated	5,717	3.5%	0.5%	#2 HDPE Natural RPPC	499	0.3%	0.0%
Coated Corrugated	314	0.2%	0.2%	#2 HDPE Colored RPPC	814	0.5%	0.1%
Brown Paper Bags	3,111	1.9%	0.3%	#1 PET RPPC	693	0.4%	0.0%
Newspaper	6,346	3.9%	0.4%	#1 PET Products/Packaging	43	0.0%	0.0%
White Ledger	1,179	0.7%	0.2%	Film Packaging	5,780	3.5%	0.3%
Colored Ledger	200	0.1%	0.1%	#3 PVC RPPC	90	0.1%	0.0%
Computer Paper	17	0.0%	0.0%	#4 LDPE RPPC	38	0.0%	0.0%
Other Office Paper	236	0.1%	0.1%	#5 PP RPPC	213	0.1%	0.0%
Magazines and Catalogs	4,800	2.9%	0.5%	#6 PS RPPC	98	0.1%	0.0%
Phone Books and Directories	489	0.3%	0.1%	#7 and Uncoded RPPC	223	0.1%	0.0%
Other Mixed Paper	15,818	9.7%	0.8%	#2 HDPE Products/Packaging	139	0.1%	0.0%
Remainder/Composite Paper	12,982	8.0%	0.8%	#3 PVC Products/Packaging	155	0.1%	0.1%
Milk Cartons and Drink Boxes	1,428	0.9%	0.9%	#4 LDPE Products/Packaging	6	0.0%	0.0%
GLASS	6,149	3.8%		#5 PP Products/Packaging	80	0.0%	0.0%
Clear Bottles and Containers	3,013	1.8%	0.3%	#6 PS Products/Packaging	1,109	0.7%	0.1%
Green Bottles and Containers	1,118	0.7%	0.1%	#7 and Uncoded Products/Packaging	1,395	0.9%	0.1%
Brown Bottles and Containers	1,242	0.8%	0.2%	Polyurethane	630	0.4%	0.3%
Flat Glass	136	0.1%	0.0%	Other Mixed Plastic and Material	1,093	0.7%	0.2%
Remainder/Composite Glass	640	0.4%	0.4%	OTHER INORGANICS	10,153	6.2%	
METAL	10,859	6.7%		Rock	1,238	0.8%	0.4%
Tin/Steel Cans	2,798	1.7%	0.2%	Concrete	1,135	0.7%	0.4%
Other Ferrous	2,970	1.8%	0.7%	Brick	87	0.1%	0.1%
Aluminum Cans	716	0.4%	0.2%	Soil and Fines	3,446	2.1%	0.7%
Other Non-ferrous	467	0.3%	0.1%	Asphalt	1,294	0.8%	0.8%
White Goods	755	0.5%	0.8%	Gypsum Board	890	0.5%	0.6%
Remainder/Composite Metal	3,152	1.9%	0.8%	Remainder/Composite Inorganic	2,064	1.3%	0.6%
OTHER ORGANIC	68,650	42.1%		HOUSEHOLD HAZARDOUS	476	0.3%	
Food	29,631	18.2%	1.7%	Paint	67	0.0%	0.0%
Leaves and Grass	6,384	3.9%	1.4%	Automotive Fluids	166	0.1%	0.1%
Prunings and Trimmings	4,183	2.6%	1.4%	Household Batteries	117	0.1%	0.0%
Branches and Stumps	644	0.4%	0.4%	Vehicle Batteries	5	0.0%	0.0%
Agricultural Crop Residue	0	0.0%	0.0%	Remainder Composite HHW	121	0.1%	0.0%
Manure	0	0.0%	0.0%	SPECIAL WASTES	1,138	0.7%	
Wood	4,874	3.0%	1.5%	Bulky Items	544	0.3%	0.3%
Textiles	5,427	3.3%	1.0%	Ash	591	0.4%	0.3%
Tires	37	0.0%	0.0%	Industrial Sludge	0	0.0%	0.0%
Miscellaneous Organics	2,555	1.6%	0.4%	Treated Medical Waste	2	0.0%	0.0%
Mixed Textiles/Materials	4,013	2.5%	2.1%	Remainder Composite Special	0	0.0%	0.0%
Animal By-Products	6,443	3.9%	2.0%				
Disposable Diapers/Fem Hygiene	4,460	2.7%	0.4%				
				TOTAL	163,160	100.0%	

Table 4.2.2
Residential Substream: Wet Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	35.7%		PLASTICS	7.5%	
Uncoated Corrugated	4.4%	0.8%	#2 HDPE Natural RPPC	0.3%	0.1%
Coated Corrugated	0.4%	0.5%	#2 HDPE Colored RPPC	0.5%	0.1%
Brown Paper Bags	2.4%	0.3%	#1 PET RPPC	0.4%	0.1%
Newspaper	4.2%	0.6%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	1.0%	0.3%	Film Packaging	3.4%	0.4%
Colored Ledger	0.1%	0.1%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.0%	0.0%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.3%	0.2%	#5 PP RPPC	0.1%	0.0%
Magazines and Catalogs	3.8%	0.7%	#6 PS RPPC	0.1%	0.0%
Phone Books and Directories	0.3%	0.2%	#7 and Uncoded RPPC	0.1%	0.0%
Other Mixed Paper	8.4%	0.8%	#2 HDPE Products/Packaging	0.2%	0.1%
Remainder/Composite Paper	8.9%	1.0%	#3 PVC Products/Packaging	0.1%	0.1%
Milk Cartons and Drink Boxes	1.6%	1.9%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	4.0%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	1.8%	0.3%	#6 PS Products/Packaging	0.7%	0.1%
Green Bottles and Containers	0.7%	0.2%	#7 and Uncoded Products/Packaging	0.6%	0.1%
Brown Bottles and Containers	0.8%	0.3%	Polyurethane	0.1%	0.1%
Flat Glass	0.0%	0.0%	Other Mixed Plastic and Material	0.8%	0.2%
Remainder/Composite Glass	0.7%	0.8%	OTHER INORGANICS	8.2%	
METAL	6.1%		Rock	1.1%	0.7%
Tin/Steel Cans	2.0%	0.2%	Concrete	0.9%	0.6%
Other Ferrous	1.6%	0.7%	Brick	0.1%	0.1%
Aluminum Cans	0.3%	0.0%	Soil and Fines	2.4%	1.1%
Other Non-ferrous	0.2%	0.1%	Asphalt	1.0%	1.3%
White Goods	1.0%	1.6%	Gypsum Board	0.9%	1.0%
Remainder/Composite Metal	1.0%	0.4%	Remainder/Composite Inorganic	1.7%	1.0%
OTHER ORGANIC	40.3%		HOUSEHOLD HAZARDOUS	0.3%	
Food	18.2%	2.0%	Paint	0.1%	0.1%
Leaves and Grass	3.7%	1.6%	Automotive Fluids	0.1%	0.1%
Prunings and Trimmings	4.1%	2.7%	Household Batteries	0.1%	0.0%
Branches and Stumps	0.1%	0.1%	Vehicle Batteries	0.0%	0.0%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.0%	0.0%
Manure	0.0%	0.0%	SPECIAL WASTES	0.5%	
Wood	1.4%	0.9%	Bulky Items	0.4%	0.5%
Textiles	2.4%	0.5%	Ash	0.0%	0.1%
Tires	0.0%	0.0%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	1.2%	0.3%	Treated Medical Waste	0.0%	0.0%
Mixed Textiles/Materials	1.4%	0.4%	Remainder Composite Special	0.0%	0.0%
Animal By-Products	5.3%	4.2%			
Disposable Diapers/Fem Hygiene	2.5%	0.5%			

Table 4.2.3
Residential Substream: Dry Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	29.2%		PLASTICS	7.5%	
Uncoated Corrugated	2.7%	0.5%	#2 HDPE Natural RPPC	0.3%	0.1%
Coated Corrugated	0.1%	0.1%	#2 HDPE Colored RPPC	0.5%	0.1%
Brown Paper Bags	1.5%	0.4%	#1 PET RPPC	0.4%	0.1%
Newspaper	3.7%	0.6%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	0.5%	0.2%	Film Packaging	3.4%	0.4%
Colored Ledger	0.1%	0.1%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.0%	0.0%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.0%	0.0%	#5 PP RPPC	0.1%	0.0%
Magazines and Catalogs	2.2%	0.5%	#6 PS RPPC	0.1%	0.0%
Phone Books and Directories	0.3%	0.1%	#7 and Uncoded RPPC	0.1%	0.0%
Other Mixed Paper	10.8%	1.3%	#2 HDPE Products/Packaging	0.2%	0.1%
Remainder/Composite Paper	7.1%	1.2%	#3 PVC Products/Packaging	0.1%	0.1%
Milk Cartons and Drink Boxes	0.3%	0.0%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	3.6%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	1.9%	0.4%	#6 PS Products/Packaging	0.7%	0.1%
Green Bottles and Containers	0.6%	0.2%	#7 and Uncoded Products/Packaging	0.6%	0.1%
Brown Bottles and Containers	0.8%	0.3%	Polyurethane	0.1%	0.1%
Flat Glass	0.1%	0.1%	Other Mixed Plastic and Material	0.8%	0.2%
Remainder/Composite Glass	0.2%	0.1%	OTHER INORGANICS	8.2%	
METAL	7.2%		Rock	1.1%	0.7%
Tin/Steel Cans	1.5%	0.2%	Concrete	0.9%	0.6%
Other Ferrous	2.0%	1.2%	Brick	0.1%	0.1%
Aluminum Cans	0.6%	0.4%	Soil and Fines	2.4%	1.1%
Other Non-ferrous	0.4%	0.1%	Asphalt	1.0%	1.3%
White Goods	0.0%	0.0%	Gypsum Board	0.9%	1.0%
Remainder/Composite Metal	2.8%	1.4%	Remainder/Composite Inorganic	1.7%	1.0%
OTHER ORGANIC	43.6%		HOUSEHOLD HAZARDOUS	0.3%	
Food	18.1%	2.6%	Paint	0.1%	0.1%
Leaves and Grass	4.1%	2.2%	Automotive Fluids	0.1%	0.1%
Prunings and Trimmings	1.3%	1.2%	Household Batteries	0.1%	0.0%
Branches and Stumps	0.7%	0.7%	Vehicle Batteries	0.0%	0.0%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.0%	0.0%
Manure	0.0%	0.0%	SPECIAL WASTES	0.5%	
Wood	4.4%	2.6%	Bulky Items	0.4%	0.5%
Textiles	4.1%	1.9%	Ash	0.0%	0.1%
Tires	0.0%	0.0%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	1.8%	0.6%	Treated Medical Waste	0.0%	0.0%
Mixed Textiles/Materials	3.4%	3.9%	Remainder Composite Special	0.0%	0.0%
Animal By-Products	2.8%	0.9%			
Disposable Diapers/Fem Hygiene	2.9%	0.6%			

4.3 Commercial Substream

This section describes the composition of the commercial substream. Section 4.3.1 summarizes the data for the entire substream, while Sections 4.3.2 and 4.3.3 present the data for the wet and dry sampling periods respectively.

4.3.1 Overall Commercial Substream

Figure 4.3.1 and Table 4.3.1 illustrate the composition of the entire commercial substream. Like the residential substream, the commercial substream's two largest categories were *other organics* (42.8%) and *paper* (28.1%).

Unlike the residential substream, *wood* (14.0%) is a slightly higher percentage of the commercial substream than *food* (13.7%). In the *paper* category, *remainder/composite paper* (7.0%), *other mixed paper* (6.8%), and *uncoated corrugated paper* (6.5%) each form noteworthy percentages of the commercial substream.

4.3.2 Commercial Substream: Wet Sampling Period

During the wet sampling period, *other organics* (43.8%) and *paper* (28.3%) were again the largest categories, as Table 4.3.2 shows.

Wood (15.8%) is again the greatest component of the *other organics* category, followed by *food* (12.1%) and more distantly, *leaves and grass* (6.1%). The same set of paper types again dominates the *paper* category: *remainder/composite paper* (7.6%), *uncoated corrugated* (7.0%), and *other mixed paper* (6.3%).

4.3.3 Commercial Substream: Dry Sampling Period

As Table 4.3.3 shows, *other organics* (41.3%) and *paper* (27.8%) constituted the greatest proportion of the commercial substream during the dry sampling period.

Within the *other organics* component, *food* (16.0%) and *wood wastes* (11.3%) were the two greatest contributors, while *other mixed paper* (7.6%), *remainder/composite paper* (6.3%), and *uncoated corrugated paper* (5.7%) dominated the paper category.

Figure 4.3.1
Commercial Substream
Composition Percentages by Weight

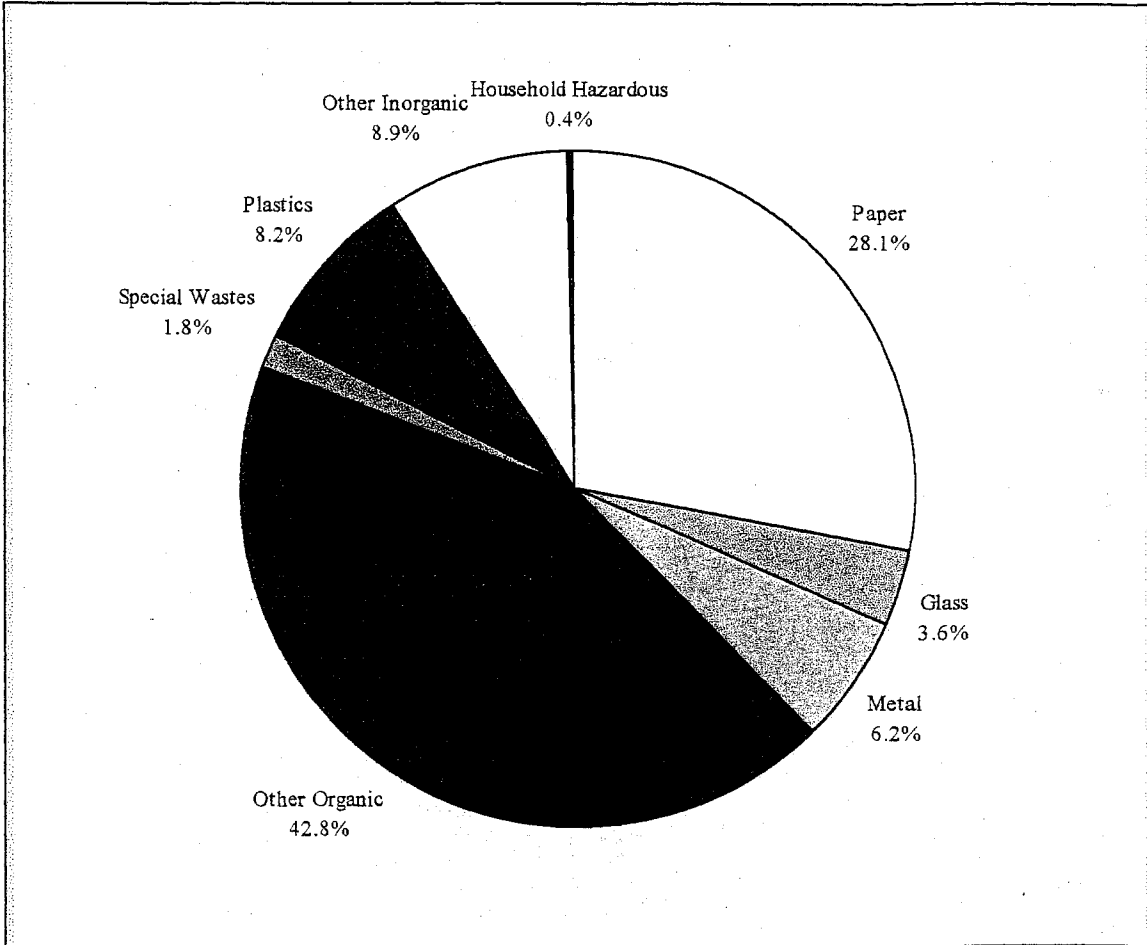


Table 4.3.1
Commercial Substream
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Tons	Percent	+/-		Tons	Percent	+/-
PAPER	45,424	28.1%		PLASTICS	13,181	8.2%	
Uncoated Corrugated	10,473	6.5%	1.0%	#2 HDPE Natural RPPC	546	0.3%	0.1%
Coated Corrugated	2,240	1.4%	0.9%	#2 HDPE Colored RPPC	603	0.4%	0.1%
Brown Paper Bags	1,156	0.7%	0.2%	#1 PET RPPC	379	0.2%	0.0%
Newspaper	3,634	2.2%	0.5%	#1 PET Products/Packaging	31	0.0%	0.0%
White Ledger	1,985	1.2%	0.4%	Film Packaging	6,379	3.9%	0.9%
Colored Ledger	403	0.2%	0.2%	#3 PVC RPPC	64	0.0%	0.0%
Computer Paper	192	0.1%	0.1%	#4 LDPE RPPC	9	0.0%	0.0%
Other Office Paper	92	0.1%	0.0%	#5 PP RPPC	81	0.0%	0.0%
Magazines and Catalogs	1,851	1.1%	0.3%	#6 PS RPPC	35	0.0%	0.0%
Phone Books and Directories	343	0.2%	0.1%	#7 and Uncoded RPPC	77	0.0%	0.0%
Other Mixed Paper	11,000	6.8%	1.2%	#2 HDPE Products/Packaging	48	0.0%	0.0%
Remainder/Composite Paper	11,342	7.0%	1.2%	#3 PVC Products/Packaging	596	0.4%	0.4%
Milk Cartons and Drink Boxes	714	0.4%	0.2%	#4 LDPE Products/Packaging	2	0.0%	0.0%
GLASS	5,892	3.6%		#5 PP Products/Packaging	32	0.0%	0.0%
Clear Bottles and Containers	1,946	1.2%	0.2%	#6 PS Products/Packaging	949	0.6%	0.2%
Green Bottles and Containers	725	0.4%	0.1%	#7 and Uncoded Products/Packaging	1,637	1.0%	0.3%
Brown Bottles and Containers	641	0.4%	0.1%	Polyurethane	344	0.2%	0.1%
Flat Glass	986	0.6%	0.7%	Other Mixed Plastic and Material	1,370	0.8%	0.4%
Remainder/Composite Glass	1,594	1.0%	1.4%	OTHER INORGANICS	14,371	8.9%	
METAL	10,060	6.2%		Rock	655	0.4%	0.4%
Tin/Steel Cans	1,482	0.9%	0.2%	Concrete	4,978	3.1%	2.4%
Other Ferrous	4,145	2.6%	0.7%	Brick	196	0.1%	0.1%
Aluminum Cans	463	0.3%	0.2%	Soil and Fines	3,796	2.3%	1.2%
Other Non-ferrous	1,057	0.7%	0.5%	Asphalt	1,933	1.2%	1.1%
White Goods	122	0.1%	0.1%	Gypsum Board	1,165	0.7%	0.6%
Remainder/Composite Metal	2,790	1.7%	0.7%	Remainder/Composite Inorganic	1,649	1.0%	0.7%
OTHER ORGANIC	69,094	42.8%		HOUSEHOLD HAZARDOUS	670	0.4%	
Food	22,202	13.7%	2.6%	Paint	61	0.0%	0.0%
Leaves and Grass	8,168	5.1%	2.2%	Automotive Fluids	85	0.1%	0.1%
Prunings and Trimmings	4,067	2.5%	1.2%	Household Batteries	64	0.0%	0.0%
Branches and Stumps	875	0.5%	0.5%	Vehicle Batteries	133	0.1%	0.1%
Agricultural Crop Residue	0	0.0%	0.0%	Remainder Composite HHW	326	0.2%	0.2%
Manure	0	0.0%	0.0%	SPECIAL WASTES	2,899	1.8%	
Wood	22,542	14.0%	3.4%	Bulky Items	2,405	1.5%	0.8%
Textiles	2,030	1.3%	0.3%	Ash	5	0.0%	0.0%
Tires	89	0.1%	0.1%	Industrial Sludge	0	0.0%	0.0%
Miscellaneous Organics	2,762	1.7%	1.0%	Treated Medical Waste	461	0.3%	0.5%
Mixed Textiles/Materials	3,073	1.9%	0.9%	Remainder Composite Special	28	0.0%	0.0%
Animal By-Products	1,447	0.9%	0.3%				
Disposable Diapers/Fem Hygiene	1,839	1.1%	0.4%				
				TOTAL	161,591	100.0%	

Table 4.3.2
Commercial Substream: Wet Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	28.3%		PLASTICS	7.9%	
Uncoated Corrugated	7.0%	1.4%	#2 HDPE Natural RPPC	0.3%	0.1%
Coated Corrugated	1.4%	1.0%	#2 HDPE Colored RPPC	0.4%	0.1%
Brown Paper Bags	0.8%	0.2%	#1 PET RPPC	0.2%	0.0%
Newspaper	1.8%	0.5%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	1.2%	0.5%	Film Packaging	4.0%	0.9%
Colored Ledger	0.3%	0.2%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.1%	0.1%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.1%	0.0%	#5 PP RPPC	0.0%	0.0%
Magazines and Catalogs	1.1%	0.3%	#6 PS RPPC	0.0%	0.0%
Phone Books and Directories	0.2%	0.1%	#7 and Uncoded RPPC	0.1%	0.0%
Other Mixed Paper	6.3%	1.6%	#2 HDPE Products/Packaging	0.0%	0.0%
Remainder/Composite Paper	7.6%	1.6%	#3 PVC Products/Packaging	0.3%	0.3%
Milk Cartons and Drink Boxes	0.5%	0.3%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	4.3%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	1.0%	0.2%	#6 PS Products/Packaging	0.5%	0.2%
Green Bottles and Containers	0.4%	0.2%	#7 and Uncoded Products/Packaging	1.3%	0.4%
Brown Bottles and Containers	0.3%	0.1%	Polyurethane	0.2%	0.2%
Flat Glass	1.0%	1.1%	Other Mixed Plastic and Material	0.6%	0.3%
Remainder/Composite Glass	1.5%	2.3%	OTHER INORGANICS	6.4%	
METAL	6.9%		Rock	0.1%	0.1%
Tin/Steel Cans	0.8%	0.2%	Concrete	1.8%	2.0%
Other Ferrous	3.0%	1.0%	Brick	0.0%	0.1%
Aluminum Cans	0.2%	0.0%	Soil and Fines	2.7%	1.9%
Other Non-ferrous	0.4%	0.2%	Asphalt	0.3%	0.2%
White Goods	0.1%	0.2%	Gypsum Board	0.8%	1.0%
Remainder/Composite Metal	2.4%	1.1%	Remainder/Composite Inorganic	0.7%	0.4%
OTHER ORGANIC	43.8%		HOUSEHOLD HAZARDOUS	0.3%	
Food	12.1%	3.1%	Paint	0.0%	0.1%
Leaves and Grass	6.1%	3.5%	Automotive Fluids	0.1%	0.1%
Prunings and Trimmings	2.1%	1.4%	Household Batteries	0.0%	0.1%
Branches and Stumps	0.5%	0.6%	Vehicle Batteries	0.0%	0.0%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.1%	0.2%
Manure	0.0%	0.0%	SPECIAL WASTES	2.0%	
Wood	15.8%	4.9%	Bulky Items	1.5%	1.2%
Textiles	1.4%	0.5%	Ash	0.0%	0.0%
Tires	0.0%	0.1%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	1.6%	0.9%	Treated Medical Waste	0.5%	0.8%
Mixed Textiles/Materials	2.1%	1.5%	Remainder Composite Special	0.0%	0.0%
Animal By-Products	0.6%	0.3%			
Disposable Diapers/Fem Hygiene	1.3%	0.6%			

Table 4.3.3
Commercial Substream: Dry Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	27.8%		PLASTICS	8.5%	
Uncoated Corrugated	5.7%	1.3%	#2 HDPE Natural RPPC	0.4%	0.1%
Coated Corrugated	1.4%	1.5%	#2 HDPE Colored RPPC	0.3%	0.1%
Brown Paper Bags	0.5%	0.2%	#1 PET RPPC	0.3%	0.1%
Newspaper	2.9%	0.9%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	1.2%	0.7%	Film Packaging	3.9%	1.7%
Colored Ledger	0.2%	0.2%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.1%	0.1%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.0%	0.0%	#5 PP RPPC	0.1%	0.0%
Magazines and Catalogs	1.2%	0.5%	#6 PS RPPC	0.0%	0.0%
Phone Books and Directories	0.2%	0.1%	#7 and Uncoded RPPC	0.0%	0.0%
Other Mixed Paper	7.6%	1.6%	#2 HDPE Products/Packaging	0.1%	0.0%
Remainder/Composite Paper	6.3%	1.6%	#3 PVC Products/Packaging	0.5%	0.9%
Milk Cartons and Drink Boxes	0.4%	0.4%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	2.7%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	1.5%	0.4%	#6 PS Products/Packaging	0.7%	0.3%
Green Bottles and Containers	0.4%	0.2%	#7 and Uncoded Products/Packaging	0.7%	0.2%
Brown Bottles and Containers	0.5%	0.2%	Polyurethane	0.2%	0.1%
Flat Glass	0.0%	0.0%	Other Mixed Plastic and Material	1.2%	0.9%
Remainder/Composite Glass	0.2%	0.1%	OTHER INORGANICS	12.4%	
METAL	5.3%		Rock	0.9%	1.0%
Tin/Steel Cans	1.0%	0.4%	Concrete	4.9%	5.2%
Other Ferrous	2.0%	1.1%	Brick	0.2%	0.3%
Aluminum Cans	0.4%	0.4%	Soil and Fines	1.8%	1.3%
Other Non-ferrous	1.0%	1.2%	Asphalt	2.4%	2.7%
White Goods	0.0%	0.0%	Gypsum Board	0.6%	0.5%
Remainder/Composite Metal	0.8%	0.5%	Remainder/Composite Inorganic	1.5%	1.5%
OTHER ORGANIC	41.3%		HOUSEHOLD HAZARDOUS	0.6%	
Food	16.0%	4.6%	Paint	0.0%	0.0%
Leaves and Grass	3.6%	1.8%	Automotive Fluids	0.0%	0.0%
Prunings and Trimmings	3.1%	2.3%	Household Batteries	0.0%	0.0%
Branches and Stumps	0.6%	1.0%	Vehicle Batteries	0.2%	0.3%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.3%	0.5%
Manure	0.0%	0.0%	SPECIAL WASTES	1.5%	
Wood	11.3%	4.6%	Bulky Items	1.5%	1.1%
Textiles	1.1%	0.4%	Ash	0.0%	0.0%
Tires	0.1%	0.1%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	1.9%	2.0%	Treated Medical Waste	0.0%	0.0%
Mixed Textiles/Materials	1.6%	0.9%	Remainder Composite Special	0.0%	0.0%
Animal By-Products	1.3%	0.6%			
Disposable Diapers/Fem Hygiene	0.9%	0.4%			

4.4 Self-Haul Substream

This section presents the composition data for the self-haul substream. Section 4.4.1 discusses the entire self-haul substream, while Sections 4.4.2 and 4.4.3 describe the self-haul substream during the wet and dry sampling periods respectively.

4.4.1 Self-Haul Substream: Overall

As Figure 4.4.1 and Table 4.4.1 indicate, *other organics* (39.2%) was the largest category within the self-haul substream. The *other inorganics* (17.6%), *paper* (15.8%), and *metal* (11.7%) categories dominated the remainder of the substream.

Wood (16.3%) was the main component of the *other organics* category; *asphalt* (5.4%) and *concrete* (3.6%) were the cardinal components of the *other inorganics* category. *Uncoated corrugated* (4.5%) was the most common type of *paper*, and *other ferrous* (6.7%) the most prevalent type of *metal*.

4.4.2 Self-Haul Substream: Wet Sampling Period

During the wet sampling period, *other organics* (39.2%) again formed the greatest portion of the self-haul substream. *Other inorganics* (18.7%) and *paper* (16.9%) also composed significant portions of the substream, with the metals category (10.3%) a distant fourth.

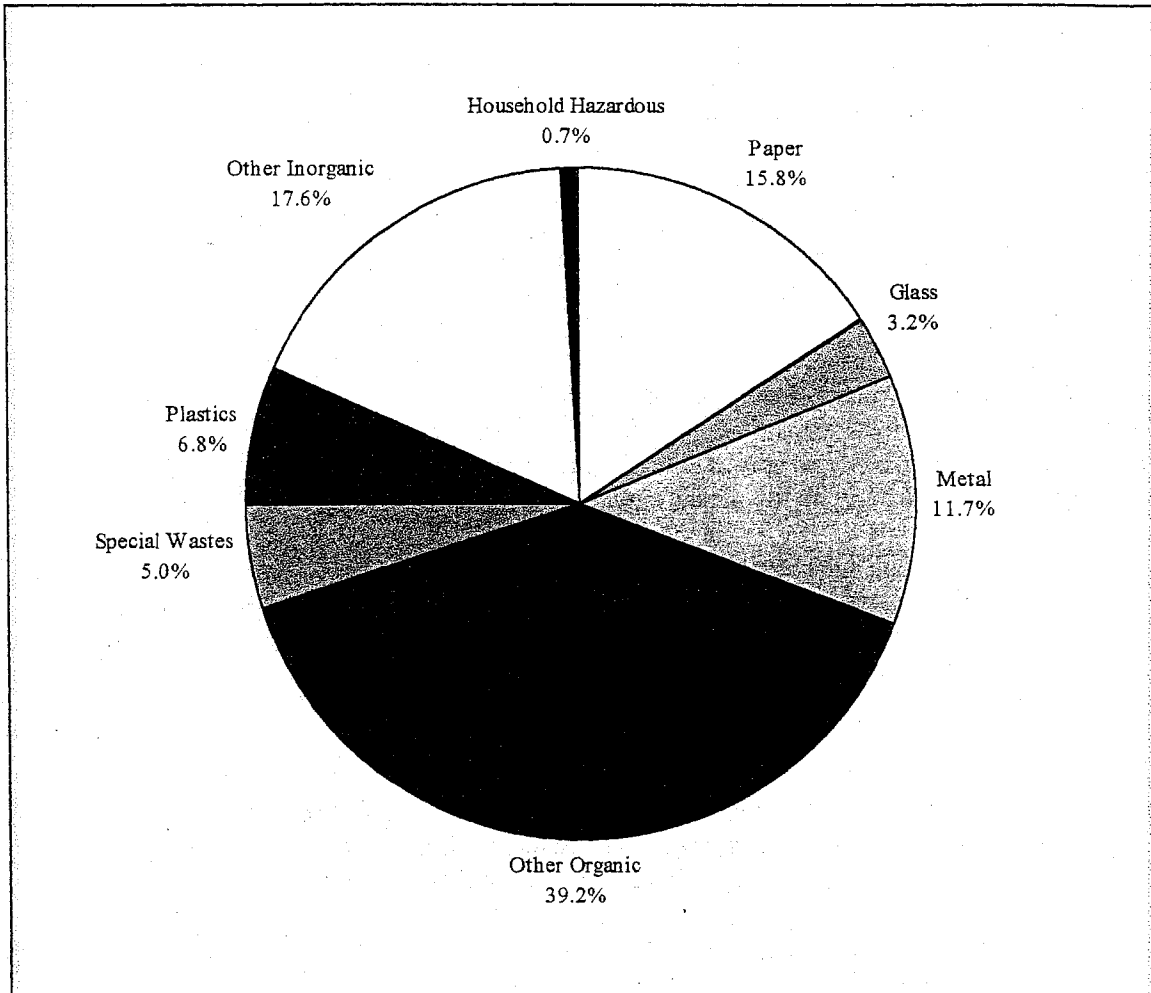
Like the overall self-haul substream, the largest component of the *other organics* category in the wet self-haul substream was *wood* (16.3%). *Asphalt* (5.1%) and *gypsum board* (4.8%) dominated the *other inorganics* category; *uncoated corrugated* (4.8%) and *other mixed paper* (4.0%) dominate the *paper* category; and *other ferrous metals* (6.3%) again commands the *metals* category.

4.4.3 Self-Haul Substream: Dry Sampling Period

As Table 4.4.3 shows, *other organics* (39.3%) was the largest category within the self-haul substream during the dry sampling period. The remainder of the substream was nearly evenly divided among the *other inorganics* (16.3%), *paper* (14.6%), and *metal* (13.2%) categories.

Wood (16.3%) was the main component of the *other organics* category; *asphalt* (5.8%) and *concrete* (4.9%) dominated the *other inorganics* category. *Other mixed paper* (4.6%) and *uncoated corrugated paper* (4.1%) split the *paper* category, and *other ferrous metals* (7.3%) was the primary component of the *metals* category.

Figure 4.4.1
Self-Haul Substream
Composition Percentages by Weight



**Table 4.4.1
Self-Haul Substream
Composition Percentages by Weight**

Percent & Range at 90% Confidence Interval

	Tons	Percent	+/-		Tons	Percent	+/-
PAPER	13,894	15.8%		PLASTICS	5,928	6.8%	
Uncoated Corrugated	3,910	4.5%	0.9%	#2 HDPE Natural RPPC	158	0.2%	0.1%
Coated Corrugated	139	0.2%	0.2%	#2 HDPE Colored RPPC	289	0.3%	0.1%
Brown Paper Bags	475	0.5%	0.2%	#1 PET RPPC	139	0.2%	0.0%
Newspaper	1,539	1.8%	0.5%	#1 PET Products/Packaging	19	0.0%	0.0%
White Ledger	428	0.5%	0.2%	Film Packaging	1,882	2.1%	0.6%
Colored Ledger	92	0.1%	0.1%	#3 PVC RPPC	22	0.0%	0.0%
Computer Paper	8	0.0%	0.0%	#4 LDPE RPPC	2	0.0%	0.0%
Other Office Paper	66	0.1%	0.1%	#5 PP RPPC	31	0.0%	0.0%
Magazines and Catalogs	882	1.0%	0.5%	#6 PS RPPC	6	0.0%	0.0%
Phone Books and Directories	281	0.3%	0.2%	#7 and Uncoded RPPC	51	0.1%	0.0%
Other Mixed Paper	3,725	4.2%	1.0%	#2 HDPE Products/Packaging	200	0.2%	0.2%
Remainder/Composite Paper	2,262	2.6%	0.6%	#3 PVC Products/Packaging	160	0.2%	0.1%
Milk Cartons and Drink Boxes	88	0.1%	0.0%	#4 LDPE Products/Packaging	0	0.0%	0.0%
GLASS	2,835	3.2%		#5 PP Products/Packaging	15	0.0%	0.0%
Clear Bottles and Containers	927	1.1%	0.3%	#6 PS Products/Packaging	222	0.3%	0.1%
Green Bottles and Containers	602	0.7%	0.3%	#7 and Uncoded Products/Packaging	794	0.9%	0.3%
Brown Bottles and Containers	477	0.5%	0.3%	Polyurethane	1,202	1.4%	1.3%
Flat Glass	341	0.4%	0.2%	Other Mixed Plastic and Material	736	0.8%	0.3%
Remainder/Composite Glass	490	0.6%	0.3%	OTHER INORGANICS	15,455	17.6%	
METAL	10,232	11.7%		Rock	645	0.7%	0.9%
Tin/Steel Cans	698	0.8%	0.2%	Concrete	3,197	3.6%	1.8%
Other Ferrous	5,915	6.7%	1.8%	Brick	921	1.0%	1.2%
Aluminum Cans	324	0.4%	0.2%	Soil and Fines	987	1.1%	0.5%
Other Non-ferrous	626	0.7%	0.4%	Asphalt	4,764	5.4%	2.7%
White Goods	122	0.1%	0.2%	Gypsum Board	2,489	2.8%	1.6%
Remainder/Composite Metal	2,548	2.9%	0.9%	Remainder/Composite Inorganic	2,452	2.8%	1.1%
OTHER ORGANIC	34,424	39.2%		HOUSEHOLD HAZARDOUS	630	0.7%	
Food	3,615	4.1%	1.0%	Paint	134	0.2%	0.1%
Leaves and Grass	3,319	3.8%	1.8%	Automotive Fluids	61	0.1%	0.1%
Prunings and Trimmings	1,667	1.9%	1.0%	Household Batteries	31	0.0%	0.0%
Branches and Stumps	258	0.3%	0.2%	Vehicle Batteries	190	0.2%	0.2%
Agricultural Crop Residue	0	0.0%	0.0%	Remainder Composite HHW	215	0.2%	0.2%
Manure	0	0.0%	0.0%	SPECIAL WASTES	4,381	5.0%	
Wood	14,321	16.3%	5.0%	Bulky Items	3,570	4.1%	1.5%
Textiles	2,225	2.5%	0.8%	Ash	146	0.2%	0.2%
Tires	456	0.5%	0.4%	Industrial Sludge	0	0.0%	0.0%
Miscellaneous Organics	1,846	2.1%	0.9%	Treated Medical Waste	0	0.0%	0.0%
Mixed Textiles/Materials	4,287	4.9%	2.3%	Remainder Composite Special	666	0.8%	1.2%
Animal By-Products	1,560	1.8%	1.0%				
Disposable Diapers/Fem Hygiene	869	1.0%	1.0%				
				TOTAL	87,779	100.0%	

Table 4.4.2
Self-Haul Substream: Wet Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	16.9%		PLASTICS	6.5%	
Uncoated Corrugated	4.8%	1.3%	#2 HDPE Natural RPPC	0.1%	0.1%
Coated Corrugated	0.2%	0.4%	#2 HDPE Colored RPPC	0.4%	0.2%
Brown Paper Bags	0.8%	0.3%	#1 PET RPPC	0.1%	0.0%
Newspaper	2.1%	0.9%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	0.5%	0.2%	Film Packaging	2.4%	1.1%
Colored Ledger	0.1%	0.0%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.0%	0.0%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.0%	0.0%	#5 PP RPPC	0.0%	0.0%
Magazines and Catalogs	1.0%	0.7%	#6 PS RPPC	0.0%	0.0%
Phone Books and Directories	0.4%	0.3%	#7 and Uncoded RPPC	0.0%	0.0%
Other Mixed Paper	4.0%	1.5%	#2 HDPE Products/Packaging	0.1%	0.1%
Remainder/Composite Paper	2.8%	0.9%	#3 PVC Products/Packaging	0.1%	0.1%
Milk Cartons and Drink Boxes	0.1%	0.0%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	2.6%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	0.8%	0.3%	#6 PS Products/Packaging	0.3%	0.1%
Green Bottles and Containers	0.6%	0.3%	#7 and Uncoded Products/Packaging	0.9%	0.4%
Brown Bottles and Containers	0.4%	0.2%	Polyurethane	1.3%	2.1%
Flat Glass	0.3%	0.2%	Other Mixed Plastic and Material	0.7%	0.4%
Remainder/Composite Glass	0.6%	0.4%	OTHER INORGANICS	18.7%	
METAL	10.3%		Rock	0.0%	0.0%
Tin/Steel Cans	1.0%	0.4%	Concrete	2.5%	1.5%
Other Ferrous	6.3%	2.6%	Brick	1.7%	2.3%
Aluminum Cans	0.1%	0.0%	Soil and Fines	1.5%	1.0%
Other Non-ferrous	0.6%	0.4%	Asphalt	5.1%	3.6%
White Goods	0.0%	0.0%	Gypsum Board	4.8%	3.0%
Remainder/Composite Metal	2.4%	1.3%	Remainder/Composite Inorganic	3.1%	1.6%
OTHER ORGANIC	39.2%		HOUSEHOLD HAZARDOUS	0.8%	
Food	4.7%	1.5%	Paint	0.0%	0.0%
Leaves and Grass	3.8%	1.9%	Automotive Fluids	0.1%	0.1%
Prunings and Trimmings	2.1%	1.8%	Household Batteries	0.0%	0.1%
Branches and Stumps	0.3%	0.4%	Vehicle Batteries	0.3%	0.3%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.4%	0.4%
Manure	0.0%	0.0%	SPECIAL WASTES	5.0%	
Wood	16.3%	8.8%	Bulky Items	3.4%	1.9%
Textiles	2.8%	1.2%	Ash	0.1%	0.1%
Tires	0.3%	0.4%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	1.4%	0.7%	Treated Medical Waste	0.0%	0.0%
Mixed Textiles/Materials	4.6%	2.9%	Remainder Composite Special	1.4%	2.3%
Animal By-Products	1.8%	1.2%			
Disposable Diapers/Fem Hygiene	0.8%	0.7%			

Table 4.4.3
Self-Haul Substream: Dry Sampling Period
Composition Percentages by Weight

Percent & Range at 90% Confidence Interval

	Percent	+/-		Percent	+/-
PAPER	14.6%		PLASTICS	7.0%	
Uncoated Corrugated	4.1%	1.2%	#2 HDPE Natural RPPC	0.2%	0.1%
Coated Corrugated	0.1%	0.1%	#2 HDPE Colored RPPC	0.3%	0.1%
Brown Paper Bags	0.3%	0.1%	#1 PET RPPC	0.2%	0.1%
Newspaper	1.3%	0.6%	#1 PET Products/Packaging	0.0%	0.0%
White Ledger	0.5%	0.3%	Film Packaging	1.8%	0.5%
Colored Ledger	0.2%	0.2%	#3 PVC RPPC	0.0%	0.0%
Computer Paper	0.0%	0.0%	#4 LDPE RPPC	0.0%	0.0%
Other Office Paper	0.1%	0.1%	#5 PP RPPC	0.1%	0.0%
Magazines and Catalogs	1.0%	0.6%	#6 PS RPPC	0.0%	0.0%
Phone Books and Directories	0.2%	0.1%	#7 and Uncoded RPPC	0.1%	0.0%
Other Mixed Paper	4.6%	1.2%	#2 HDPE Products/Packaging	0.4%	0.3%
Remainder/Composite Paper	2.3%	0.6%	#3 PVC Products/Packaging	0.3%	0.2%
Milk Cartons and Drink Boxes	0.1%	0.0%	#4 LDPE Products/Packaging	0.0%	0.0%
GLASS	3.9%		#5 PP Products/Packaging	0.0%	0.0%
Clear Bottles and Containers	1.4%	0.6%	#6 PS Products/Packaging	0.2%	0.1%
Green Bottles and Containers	0.8%	0.7%	#7 and Uncoded Products/Packaging	0.9%	0.3%
Brown Bottles and Containers	0.7%	0.6%	Polyurethane	1.4%	1.3%
Flat Glass	0.5%	0.4%	Other Mixed Plastic and Material	1.0%	0.5%
Remainder/Composite Glass	0.5%	0.3%	OTHER INORGANICS	16.3%	
METAL	13.2%		Rock	1.5%	1.9%
Tin/Steel Cans	0.6%	0.1%	Concrete	4.9%	3.6%
Other Ferrous	7.3%	2.5%	Brick	0.3%	0.4%
Aluminum Cans	0.7%	0.5%	Soil and Fines	0.7%	0.4%
Other Non-ferrous	0.9%	0.7%	Asphalt	5.8%	4.2%
White Goods	0.3%	0.5%	Gypsum Board	0.6%	0.4%
Remainder/Composite Metal	3.5%	1.4%	Remainder/Composite Inorganic	2.5%	1.3%
OTHER ORGANIC	39.3%		HOUSEHOLD HAZARDOUS	0.6%	
Food	3.4%	1.2%	Paint	0.3%	0.2%
Leaves and Grass	3.7%	3.1%	Automotive Fluids	0.0%	0.1%
Prunings and Trimmings	1.7%	0.8%	Household Batteries	0.0%	0.0%
Branches and Stumps	0.3%	0.3%	Vehicle Batteries	0.1%	0.2%
Agricultural Crop Residue	0.0%	0.0%	Remainder Composite HHW	0.1%	0.1%
Manure	0.0%	0.0%	SPECIAL WASTES	5.0%	
Wood	16.3%	4.0%	Bulky Items	4.8%	2.2%
Textiles	2.2%	0.9%	Ash	0.2%	0.4%
Tires	0.7%	0.8%	Industrial Sludge	0.0%	0.0%
Miscellaneous Organics	2.8%	1.7%	Treated Medical Waste	0.0%	0.0%
Mixed Textiles/Materials	5.2%	3.6%	Remainder Composite Special	0.0%	0.0%
Animal By-Products	1.7%	1.7%			
Disposable Diapers/Fem Hygiene	1.2%	0.8%			

5. Comparisons

The data presented above allow for comparisons of the composition of the substreams. Section 5.1 provides an overview of the more detailed comparisons presented in Sections 5.2 through 5.4. Section 5.2 compares the composition of the overall residential, commercial, and self-haul substreams; and Sections 5.3 and 5.4 contrast the three substreams' composition during the wet and dry sampling periods respectively. In general, *within the same substream* there were few differences between composition percentages by weight of particular components when comparing the wet sampling period to the dry sampling period. The major differences in the composition percentages by weight of particular components appear when two substreams are compared (e.g. residential vs. commercial, self-haul vs. residential, commercial vs. self-haul).

5.1 Overview of Comparisons

- In all of the substreams during both sampling periods, *other organics* is the largest category of waste, ranging from 39.2% in the self-haul stream to 42.8% in the commercial stream. The *other organics* category includes such materials as food, wood, leaves and grass, textiles, and animal by-products.
- *Paper*, including newspaper, brown paper bags, uncoated corrugated paper, and magazines, is the second largest category in all of the residential and commercial streams. In the self-haul streams, *other inorganics* is the second largest category. The *other inorganics* category includes, among other items, asphalt, concrete, gypsum board, and brick.
- *Food* is the largest component within the *other organics* category in both of the residential streams, as well as in the commercial dry season waste stream. *Wood* is the largest component in overall commercial waste, commercial wet season waste, and all self-haul streams.
- Within the *other inorganics* category of the self-haul streams, *asphalt* is the greatest component. *Concrete* is the second largest in the overall and dry season self-haul waste streams, while *gypsum board* is the second greatest in the self-haul wet season waste stream.
- The composition percentage by weight of *uncoated corrugated paper* is always at a minimum in the residential substreams, and at a maximum in the commercial substreams (overall, wet season, and dry season).
- The composition percentages by weight of *other mixed paper* and *remainder/composite paper* were always at a minimum in the self-haul streams and at a maximum in the residential streams.
- The composition percentage by weight of *plastics*, including #1 PET RPPC, film packaging, polyurethane, and #2 HDPE natural and colored RPPC, was always at a maximum in the commercial streams, and at a minimum in the self-haul streams.
- The composition percentages by weight of *household hazardous wastes* and *special wastes* were both always at a minimum in the residential streams and at a maximum in the self-haul streams. *Household hazardous wastes*, including paint, automotive

fluids, and vehicle batteries, never composed more than 1% of any substream. *Special wastes* included ash, biosolids, and industrial sludge.

5.2 Annual Substream Comparisons

This section compares the overall composition by weight of the residential, commercial, and self-haul substreams.

- *Other organics* was the largest category in all three substreams (42.1% residential; 42.8% commercial; 39.2% self-haul); *paper* (32.3% residential; 28.1% commercial) was the second greatest in all but the self-haul substream (15.8%), in which *other inorganics* (17.6%) was the second largest.
- *Wood* is the primary component of the *other organics* category in both the commercial (14.0%) and self-haul (16.3%) streams, while *food* is dominant in the residential stream (18.2%).
- The composition percentage by weight of *uncoated corrugated paper* ranged from a low of 3.5% in the residential stream to a high of 6.5% in the commercial stream. The composition percentages by weight of *other mixed paper* (4.2%) and *remainder/composite paper* (2.6%) were both at their minimum in the self-haul stream, and at their height in the residential stream (9.7% and 8.0%, respectively).
- *Glass* was a fairly constant percentage of all three streams (3.8% residential; 3.6% commercial; 3.2% self-haul). *Plastics* also did not vary much (8.0% residential; 8.2% commercial; 6.8% self-haul).

5.3 Wet Sampling Period

This section compares the composition percentages by weight of all three substreams during the wet sampling period (January 22 through January 26, 1996, and February 12 through February 16, 1996).

- Again, *other organics* was the largest category of waste in all three substreams during the wet sampling period (40.3% residential; 43.8% commercial; 39.2% self-haul).
- Likewise, *paper* was the second largest category of both the residential and commercial substreams (35.7% and 28.3% respectively). *Other inorganics* was again the second largest category of the self-haul substream (18.7%).
- *Glass* was at its lowest in the self-haul substream (2.6%), and at its greatest in the commercial substream (4.3%).
- *Metals* comprised a noteworthy percentage of the self-haul substream (10.3%). They represented a slightly lower percentage of the commercial (6.9%) and residential (6.1%) substreams.

5.4 Dry Sampling Period

This section compares the composition percentages by weight of all three substreams during the dry sampling period (July 24 through July 28, 1995 and August 21 through August 25, 1995).

- *Other organics* was again the largest category of waste in all three substreams (43.6% residential; 41.3% commercial; 39.3% self-haul).
- *Paper* was again the second largest category of waste in the residential (29.2%) and commercial (27.8%) streams. In the self-haul substream, *other inorganics* was again the second largest category (16.3%).
- Within the *other organics* category, *food* was the greatest component of the residential (18.1%) and commercial (16.0%) streams. In the self-haul substream, *wood* (16.3%) dominated the category.

6. Comparison with 1991 EMCON Report

This section compares the waste composition findings of the 1991 EMCON Report with the waste composition findings of this study. The table below compares the tonnages and composition percentages by weight of selected categories in the two years.

The 1991 report contains two categories, *yard waste* and *other wastes*, the components of which the 1995/96 study includes in other categories. In order to more accurately compare data from the two years, the following material types from the 1995/96 report were reassigned to match the categories in the 1991 report:

- The *leaves and grass, prunings and trimmings, and branches and stumps* components were summed to create a *yard waste* category to compare with the 1991 report. The three components' tonnages and percentages were then subtracted from the 1995/96 *other organics* category.
- The *white goods* component, the *household hazardous waste* category, and the *other inorganics* category were summed to create an *other wastes* category to compare with the 1991 report. The *white goods* component tonnage and percentage were then subtracted from the *metals* category of the 1995/96 report.

As Table 6.1.1 shows, Sonoma County's waste stream has decreased over the past five years (541,506 tons in 1991 versus 412,529.59 tons in 1995), even though the population of the county has increased. The tonnages of *yard waste, other organics* (food, wood, textiles, etc.), and *paper* (uncoated corrugated, newspaper, white paper, etc.) decreased the most notably. This decrease is most likely due to the successful recycling and waste reduction programs the county has initiated since 1991.

The table also shows that in many cases, the percentage of the waste stream that a category comprises increased over the five year period even though its tonnage decreased. Since the composition percentage by weight that each component comprises is relative to all of the other components in the waste stream, this phenomenon is most likely due to the removal from the

waste stream of significant amounts of other wastes, especially yard wastes, through the recycling and waste reduction programs.

The most dramatic diversion which the table highlights is that of *yard waste*. Between 1991 and 1995/96, the amount of *yard waste* arriving at Sonoma County's disposal facilities and transfer stations decreased by 54,423 tons. In the same time period, *yard waste*'s composition percentage by weight also fell 8.4%, from 15.5% in 1991 to 7.1% in 1995/96. The *metals* category also witnessed decreases in both tonnage (-13,162 tons) and percentage by weight (-0.6%).

Table 6.1.1
Sonoma County Overall Waste Stream: 1991 vs. 1995/96

Component	1991 Tons	1995/96 Tons	Difference	1991%	1995/96 %	Difference
Paper	141,760	111,652	-30,108	26.2	27.1	0.9
Plastics	37,508	32,185	-5,323	6.9	7.8	0.9
Glass	15,505	14,866	-639	2.9	3.6	0.7
Metals	43,408	30,246	-13,162	8.0	7.4	-0.6
Yard Waste	83,976	29,553	-54,423	15.5	7.1	-8.4
Other Organics	174,916	142,567	-32,349	32.3	34.6	2.3
Other Wastes	37,858	42,965	5,107	7.0	10.3	3.3
Special Wastes	6,576	8,497	1,921	1.2	2.1	0.9
Totals	541,507	412,531	-128,976	100	100	0

Appendix A: Sorting Component Definitions

PAPER CATEGORY DEFINITIONS

- (a) "Corrugated Cardboard and Paper Bags" includes the three subtypes defined below. The subtypes are "uncoated corrugated", "coated corrugated", and "paper bags".

- (1) "Uncoated Corrugated" is a complex paperboard. It usually has three layers and is brown. The center layer is wavy paper or paperboard sandwiched between the two outer layers. It does not have any wax, plastic, or other coating on the inside or outside. The surface is dull and absorbs water.

Examples: This subtype includes entire shipping boxes, sheets, and pieces. This subtype does not include single-layer paperboard like the gray type used for cereal boxes.

- (2) "Coated Corrugated" is a complex paperboard. It usually has three layers and is brown. The center layer is wavy paper or paperboard sandwiched between the two outer layers. It has a wax, plastic, or other coating on the inside and/or outside. The coated surface is shiny and resists water.

Examples: This subtype includes entire shipping boxes, sheets, and pieces. This type includes containers for produce, meat, or other food products. This subtype does not include single-layer paperboard like the gray type used for cereal boxes.

- (3) "Brown Paper Bags" means bags and wrappings made from paper.

Examples: This subtype includes brown paper grocery bags, white ice cream or fast food bags, department store bags, Kraft bags, and sheets of packing paper.

- (b) "Newspaper" means paper used in newspapers. This type does not include any subtypes.

Examples: This type includes newspaper, newsprint, and all inserts.

- (c) "Office Paper" includes the four subtypes defined below. The subtypes are "white ledger", "colored ledger", "computer paper", and "other office paper".

- (1) "White Ledger" means uncolored bond, rag, or stationery grade paper. It may have colored ink on it. When the paper is torn, the fibers are white.

Examples: This subtype includes white photocopy, letter, and notebook paper.

- (2) "Colored Ledger" means colored bond, rag, or stationery grade paper. When the paper is torn, the fibers are colored throughout.

Examples: This subtype includes colored photocopy, letter, and notebook paper. This subtype does not include fluorescent, fiesta, or goldenrod.

- (3) "Computer Paper" means paper used for computer printouts. This subtype usually has a strip of formfeed holes along two edges. If there are no holes, then the edges show tear marks. This subtype can be white or striped.

Examples: This subtype includes computer paper and printouts from continuous feed printers. This subtype does not include "white ledger" used in laser printers.

- (4) "Other Office Paper" means other kinds of paper used in offices.

Examples: This subtype includes manila folders, manila envelopes, and index cards. This subtype does not include "white ledger", "colored ledger" or "computer paper".

- (d) "Mixed Paper" includes the three subtypes defined below. The subtypes are "magazines", "phone books and directories", and "other mixed paper".

- (1) "Magazines and Catalogs" means items made of glossy coated paper. This paper is usually slick, smooth to the touch, and reflects light.

Examples: This subtype includes glossy magazines, catalogs, brochures and pamphlets.

- (2) "Phone Books and Directories" means thin, tissue grade paper between coated covers. These items are bound along the spine with glue. They are often made of colored paper with two or more ink colors.

Examples: This subtype includes whole or damaged telephone books, "yellow pages", real estate listings, and some non-glossy mail order catalogs.

- (3) "Other Mixed Paper" means a combination of any of the paper types and subtypes in subsections (a) through (d) of this section that has not been separated.

Examples: This subtype includes gray paperboard boxes, envelopes with windows or self stick adhesive, paper plates or cups, fiesta, and goldenrod paper.

- (e) "Remainder and Composite Paper" means paper that cannot be put in any other type or subtype. It includes items made mostly of paper but combined with other materials such as wax, plastic, or foil. This type does not include any subtypes.

Examples: This type includes tissue, paper towels, blueprints, sepia, onion skin, NCR paper, thermal facsimile paper, fast food wrappers, carbon paper, carbonless forms, self adhesive notes, photographs, aseptic packages, wax coated milk cartons, and wax paper.

GLASS CATEGORY DEFINITIONS

- (f) "Clear Glass Bottles and Containers" means clear glass carbonated beverage containers with or without a CRV label.

Examples: This type includes whole and broken clear soda and beer bottles, fruit juice bottles, peanut butter and mayonnaise jars, and noncarbonated beverage bottles.

- (g) "Colored Glass Bottles and Containers" includes two subtypes defined below. The subtypes are "Green Glass Bottles and Containers" and "Brown Glass Bottles and Containers".

- (1) "Green Glass Bottles and Containers" means green-colored glass containers with or without a CRV label.

Examples: This subtype includes whole or broken green soda and beer bottles, and whole or broken green wine bottles.

- (2) "Brown Glass Bottles and Containers" means brown-colored glass containers with or without a CRV label.

Examples: This subtype includes whole or broken brown soda and beer bottles, and whole or broken brown wine bottles.

- (h) "Flat Glass" means clear glass that is perfectly flat. This type does not include any subtypes.

Examples: This type includes glass window panes, doors, and table tops, flat automotive window glass (side windows) and architectural glass. This subtype does not include windshields or any curved glass.

- (i) "Remainder and Composite Glass" means glass that cannot be put in any other type or subtype. It includes items made mostly of glass but combined with other materials. This type does not include any subtypes.

Examples: This type includes Pyrex, Corningware, mirrors, and auto windshields.

METAL CATEGORY DEFINITIONS

- (j) The type "Ferrous Metals" includes two subtypes defined below. The subtypes are "Tin/Steel Cans" and "Other Ferrous".
- (1) "Tin/Steel Cans" means rigid containers made mainly of steel. These items will stick to a magnet and may be tin-coated. This subtype is used to store food, beverages, paint, and a variety of other household and consumer products.
- Examples: This subtype includes canned food and beverage containers, empty metal paint cans, empty spray paint and other aerosol containers, and bimetal containers (steel sides and aluminum ends).
- (2) "Other Ferrous" means any iron, steel, or stainless steel item that will stick to a magnet, except "tin/steel cans".
- Examples: This subtype includes structural steel beams, metal clothes hangers, metal pipes, stainless steel cookware, security bars, and scrap ferrous items. This subtype does not include steel, bimetal, or tin cans.
- (k) "Non-Ferrous Metals" includes the two subtypes defined below. The subtypes are "Aluminum Cans" and "Other Non-Ferrous".
- (1) "Aluminum Cans" means any food or beverage container made mainly of aluminum.
- Examples: This subtype includes aluminum soda or beer cans, and some cat food cans. This subtype does not include bimetal containers (steel sides and aluminum ends).
- (2) "Other Non-Ferrous" means any metal item, other than aluminum cans, that does not stick to a magnet. These items may be made of aluminum, copper, brass, bronze, lead, zinc, or other metals.
- Examples: This subtype includes aluminum window frames, aluminum siding, copper wire, shell casings, brass pipe, and aluminum foil.
- (l) "White Goods" means discarded major appliances. These items are often enamel-coated. This type does not include any subtypes.
- Examples: This type includes washing machines, clothes dryers, hot water heaters, stoves and refrigerators.

- (m) "Remainder and Composite Metal" means metal that cannot be put in any other type or subtype. This type includes items made mostly of metal but combined with other materials. This type does not include any subtypes.

Examples: This type includes brown goods (electronics and other small appliances), computers, televisions, radios, and electronic parts.

OTHER ORGANIC CATEGORY DEFINITIONS

- (n) "Food" means food material resulting from the storage, preparation, cooking, handling or consumption of food. This type does not include any subtypes.

Examples: This type includes discarded meat scraps, dairy products, egg shells, fruit or vegetable peels, and other food items.

- (o) "Yard and Landscape" includes the three subtypes defined below. The subtypes are "Leaves and Grass", "Prunings and Trimmings", and "Branches and Stumps".

- (1) "Leaves and Grass" means plant material, except woody material, from any public or private landscapes.

Examples: This subtype includes leaves, grass clippings, and plants. This subtype does not include woody material or material from agricultural sources.

- (2) "Prunings and Trimmings" means woody plant material up to 4 inches in diameter from any public or private landscape.

Examples: This subtype includes prunings, shrubs, and small branches with branch diameters that do not exceed 4 inches. This subtype does not include stumps, tree trunks, or branches exceeding 4 inches in diameter. This subtype does not include material from agricultural sources.

- (3) "Branches and Stumps" means woody plant material, branches and stumps that exceed 4 inches in diameter from any public or private landscape.

- (p) "Agricultural Crop Residues" means plant material from agricultural sources. This type does not include any subtypes.

Examples: This type includes orchard and vineyard prunings, rice hulls, vegetable by-products from farming, residual fruits, vegetables, and other crop remains after usable crop is harvested. This subtype does not include processed material from canneries, wineries, or other industrial sources.

- (q) "Manures" means manure and soiled bedding materials from domestic, farm, or ranch animals. This type does not include any subtypes.
- Examples: This type includes manure and soiled bedding from animal production operations, race-tracks, riding stables, animal hospitals, and other sources.
- (r) "Wood" means processed wood for building. This type does not include any subtypes.
- Examples: This type includes dimensional lumber, lumber cutoffs, engineered wood such as plywood and particleboard, wood scraps, pallets, and wood from construction and demolition.
- (s) "Textiles" means items made of thread, yard, fabric, or cloth. This type does not include any subtypes.
- Examples: This type includes clothes, fabric trimmings, draperies, and all natural and synthetic cloth fibers. This subtype does not include cloth covered furniture, mattresses, leather shoes, leather bags, or leather belts.
- (t) "Tires" means vehicle tires. This type does not include any subtypes.
- Examples: This type includes truck, automobile, motorcycle, heavy equipment, and bicycle tires.
- (u) The type "Miscellaneous Organics" means organic material that cannot be put in any other type or subtype. This type includes items made mostly of organic materials but combined with other materials. This type does not include any subtypes.
- Examples: This type includes leather items, carpets, cork, hemp rope, garden hoses, rubber items, and carpet padding.
- (v) "Mixed Textiles/Materials" means any of the textile types defined above combined with another material.
- Examples: This type includes mattresses, cloth-covered furniture, carpets, and upholstery.
- (w) The type "Animal By-Products" includes organic materials produced by animals. This type does not include any subtypes.
- Examples: This type includes animal carcasses and kitty litter.
- (x) "Disposable Diapers/Feminine Hygiene" means disposable diapers and feminine sanitary products. This type does not include any subtypes.

Examples: This type includes disposable diapers, adult protective undergarments, and products used during the female menstrual cycle.

PLASTIC CATEGORY DEFINITIONS

(y) "HDPE" includes the two subtypes defined below. The subtypes are "HDPE Natural RPPC" and "HDPE Colored RPPC".

(1) "HDEP Natural RPPC" means rigid HDPE packaging containers. This plastic is usually cloudy white, allowing light to pass through it. When marked for identification, it bears the number "2" in the triangular recycling symbol.

Examples: This subtype includes milk jugs, water jugs, and some other containers.

(2) "HDPE Colored RPPC" means opaque/solid colored rigid HDPE packaging containers. This plastic is usually of a solid color, preventing light from passing through it. When marked for identification, it bears the number "2" in the triangular recycling symbol.

Examples: This subtype includes detergent bottles, some hair-care bottles, empty motor oil, empty antifreeze and other empty automotive fluid containers.

(z) "#1 PET RPPC" means rigid plastic PET containers. When marked for identification, it bears the number "1" in the center of the triangular recycling symbol and may also bear the letters "PETE" or "PET". The color is usually transparent green or clear. A PET container usually has a small dot or nipple left from the manufacturing process, not a seam. It does not turn white when bent. This type does not include any subtypes.

Examples: This type includes soft drink and water bottles, some liquor bottles, cooking oil containers, aspirin bottles, and some microwave food trays.

(aa) "Film Plastic" means flexible plastic sheeting. It is made from a variety of plastic resins including LDPE. It can be easily contoured around an object by hand pressure. This type does not include any subtypes.

Examples: This type includes plastic garbage bags, food bags, dry cleaning bags, grocery store bags, packaging wrap, and food wrap.

(bb) The type "Other Plastic RPPC" includes five subtypes defined below. The subtypes are "#3 PVC RPPC", "#4 LDPE RPPC", "#5 PP RPPC", "#6 PS RPPC", and "#7 and Uncoded RPPC".

- (1) "#3 PVC RPPC" means rigid plastic packaging made of PVC. When marked for identification, it bears the number "3" in the triangular recycling symbol and may also have the letters "PVC" or "V". A PVC container usually has a seam at the bottom, not a small dot or nipple. This material has a shiny finish, and shows white stress marks when bent.

Examples: This subtype includes food containers such as bottles for salad dressings and vegetable oils, and flexible yogurt cups and lids.

- (2) "#4 LDPE RPPC" means rigid plastic packaging made of LDPE. When marked for identification, it bears the number "4" in the triangular recycling symbol and may also have the letters "LDPE".

- (3) "#5 PP RPPC" means rigid plastic packaging made of PP. When marked for identification, it bears the number "5" in the triangular recycling symbol and may also have the letters "PP".

Examples: This subtype includes food containers such as syrup bottles and some margarine tubs, hard plastic pill bottle caps, and some shampoo containers.

- (4) "#6 PS RPPC" means rigid plastic packaging made of solid PS or hardened PS foam. When marked for identification, it bears the number "6" in the triangular recycling symbol and may also have the letters "PS". Hardened PS foam has very small air pockets throughout. Solid PS may be brittle.

Examples: This subtype includes hardened PS foam items such as egg cartons. This subtype also includes solid PS: brittle yogurt and cottage cheese cups, and vitamin bottles.

- (cc) The type "Plastic Products/Packaging" means plastic products not included in the above definitions, and non-rigid plastic packaging. This type includes seven subtypes, defined below. The subtypes are "#1 PET Products/Packaging", "#2 HDPE Products/Packaging", "#3 PVC Products/Packaging", "#4 LDPE Products/Packaging", "#5 PP Products/Packaging", "#6 PS Products/Packaging", and "#7 and Uncoded Products/Packaging".

- (1) "#1 PET Products/Packaging" includes PET products not included in the above definitions, and non-rigid packaging products made of PET.

Examples: This subtype includes some microwave trays.

- (2) "#2 HDPE Products/Packaging" includes HDPE products not included in the above definitions, and non-rigid packaging products made of HDPE.

Examples: This subtype includes some toys, trash bags, fuel tanks, and crates.

- (3) “#3 PVC Products/Packaging” includes PVC products not included in the above definitions, and non-rigid packaging products made of PVC.

Examples: This subtype includes products such as plastic strapping and hair combs, and building materials such as house siding, window sashes and frames, and plastic pipes.

- (4) “#4 LDPE Products/Packaging” includes LDPE products not included in the above definitions, and non-rigid packaging products made of LDPE.

Examples: This subtype includes some pipes and mugs.

- (5) “#5 PP Products/Packaging” includes PP products not included in the above definitions, and non-rigid packaging products made of PP.

Examples: This subtype includes drinking straws, hard plastic pill bottle caps, and some shampoo containers.

- (6) “#6 PS Products/Packaging” includes PS products not included in the above definitions, and non-rigid packaging products made of PS.

Examples: This subtype includes clamshell-shaped fast food containers, Styrofoam, drinking cups, produce trays, foam packing blocks, and packing peanuts. It also includes brittle PS products such as cookie and muffin trays, most disposable cutlery, and disposable dishes and cups.

- (7) “#7 and Uncoded Products/Packaging” includes all plastic products and non-rigid packaging materials which are made of resins other than numbers one through six, and those containers whose resin type is unidentifiable.

- (dd) The type “Polyurethane” includes both rigid and flexible foam products and packaging made of polyurethane resin. This type does not include any subtypes.

Examples: This type includes building insulation, industrial insulation, and rug underlays.

- (ee) The type “Other Mixed Plastic and Material” means plastic that cannot be put in any other type or subtype. This type includes items made mostly of plastic but combined with other materials. This type does not include any subtypes.

Examples: This type includes disposable razors, pens, lighters, toys, 3-ring binders, and all other miscellaneous plastic items.

OTHER INORGANIC CATEGORY DEFINITIONS

- (ff) "Inerts" includes six subtypes defined below. The subtypes are "Rock", "Concrete", "Brick", "Soil and Fines", "Asphalt" and "Gypsum Board".
- (1) "Rock" means stone and rock of all origins or types.

Examples: This subtype includes gravel, landscape rock materials, miscellaneous roadbase, large rocks and boulders.
 - (2) "Concrete" means a hard material made from sand, gravel, aggregate, cement mix and water.

Examples: This subtype includes pieces of building foundations, concrete paving, and cinder blocks.
 - (3) "Brick" means a block of hardened clay used for building or paving.

Examples: This subtype includes whole or broken red brick, and some paving stones.
 - (4) "Soil and Fines" means soil, dirt, other matter less than 0.05 inch in diameter.
 - (5) "Asphalt" means a black or brown, tar-like material used as a roofing or paving material.
 - (6) "Gypsum Board" means interior wall covering made of a sheet of gypsum sandwiched between paper layers.

Examples: This subtype includes broken or whole sheets of sheetrock, drywall, gypsum board, plasterboard, gypboard, gyproc, and wallboard.
- (gg) The type "Remainder and Composite Inorganic" means inorganic material that cannot be put in any other type or subtype. This type includes items made mostly of inorganic materials but combined with other materials. This type does not include any subtypes.

Examples: This type includes ceramics, tiles, toilets, and sinks.

HOUSEHOLD HAZARDOUS AND SPECIAL WASTE CATEGORY DEFINITIONS

- (hh) "Household Hazardous" includes the four subtypes defined below. The subtypes are "Paint", "Automotive Fluids", "Batteries", and "Remainder and Composite Household Hazardous".
- (1) "Paint" means containers with paint in them.

Examples: This subtype includes latex paint, oil based enamel paint, and tubes of pigment or fine art paint. This subtype does not include empty paint cans or empty aerosol containers.

- (2) "Automotive Fluids" means containers with fluids used in vehicles or engines.

Examples: This subtype includes oil, antifreeze, and brake fluid. This subtype does not include empty vehicle fluid containers.

- (3) "Batteries" means any type of battery including both drycell and lead acid.

Examples: This subtype includes car, flashlight, small appliance, watch and hearing aid batteries.

- (4) "Remainder and Composite Household Hazardous" means household hazardous material that cannot be put in the "Paint", "Automotive Fluids", or "Batteries" subtypes. This subtype also includes household hazardous material that is mixed.

Examples: This subtype includes solvents, bleach, other cleaning products, pesticides, and swimming pool products.

- (ii) "Special Waste" includes five subtypes defined below. The subtypes are "Ash", "Industrial Sludge", "Treated Medical Waste", "Bulky Items" and "Remainder and Composite Special Waste".

- (1) "Bulky Items" means large hard to handle items that are not defined separately, including furniture, mattresses, and other large items.

Examples: This subtype includes wood, leather, vinyl, metal, or upholstered furniture. This subtype includes all sizes and types of mattresses, box springs, and base components.

- (2) "Ash" means a residue from the combustion of any solid or liquid material.

Examples: This subtype includes ash from fireplaces, incinerators, biomass facilities, waste-to-energy facilities, and barbecues.

- (3) "Industrial Sludge" means sludge from factories, manufacturing facilities, and refineries.

Examples: This subtype includes paper pulp sludge, and water treatment filter cake sludge.

- (4) "Treated Medical Waste" has the same meaning as treated medical waste in Section 25023.5 of the Health and Safety Code.

- (5) "Remainder and Composite Special Waste" means special waste, or waste that requires special handling, that cannot be put in any other subtype.

Examples: This subtype includes asbestos-containing materials, auto fluff, auto-bodies, trucks, trailers, truck cabs, certain types of pipe insulation and floor tiles, and artificial fireplace logs.

Appendix B: Sampling Methodology

Goals

Designing and executing the sampling plan is an important process in waste characterization studies, because the statistical validity of the resulting data depends on acquiring a systematic selection of waste from all appropriate generator types and facility locations. In order to ensure that the data collected from these samples accurately represent the total amount of waste in each substream, the planning phase of the sample methodology is developed in detail before the data collection begins.

The goal of the Sonoma County Solid Waste Characterization Study was to systematically sample 400 loads of waste arriving at the County's four facilities:

1. Central Landfill;
2. Sonoma Transfer Station;
3. Healdsburg Transfer Station; and
4. Guerneville Transfer Station.

To ensure that adequate data were collected for each generator type, the number of samples sorted was predetermined to be:

- ◆ 100 residentially generated loads;
- ◆ 150 commercially generated loads; and
- ◆ 150 self-hauled loads.

Because waste generation tends to differ by seasons, it was decided that one-half of the samples should be collected during the "dry" season and one-half of the samples should be collected during the "wet" season. Two weeks were arbitrarily chosen in July and August to represent the "dry" season, and two weeks were arbitrarily chosen in January and February to represent the "wet" season. One hundred samples were examined during each of the four weeks of data collection.

Further, for this sampling plan it was predetermined that 20 loads per sampling day would be examined. This decision was made in order to extend the data collection over the longest period of time possible, while still achieving sorting crew efficiency.

In general, these 20 days were distributed among the four sites based on tonnage handled by each facility. Tonnage information came from county data gathered from January 1994 through April 1995. **The exception was with the Guerneville Transfer Station.** According to its relative tonnage contribution, Guerneville would have been visited only one day during the study. There was a desire to visit the site at least twice, during different seasons. Thus, two sorting days were assigned to Guerneville.

Methodology

ALLOCATION OF SAMPLES TO SITES

For each site, the county's tonnage data were used to allocate the number of loads to be sorted by generator type for each site. Samples were assigned to each site based on the relative portion of waste received by each type of generator. For example, because Central Landfill received 70% of all residential tonnage at the four sites, 70% of the residential samples were assigned to be collected from Central Landfill.

The county tonnage information used as the basis for determining sampling allocation provided tonnage and number of vehicles for:

- ◆ debris boxes;
- ◆ residential compactor trucks; and
- ◆ commercial compactor trucks.

It was assumed that all waste delivered in debris boxes was commercially generated. Thus, the relative portions of commercial versus residential samples were estimated by combining the data for debris boxes with the data for commercial compactor trucks and comparing this to the data provided for residential compactor trucks.

Using this procedure, the number of samples to be collected for each type of generator at each site location was determined. Please refer to the attached spreadsheet for a display of the detailed calculations.

ALLOCATION OF SAMPLING DAYS TO SITES

It was predetermined that 20 samples would be collected per sampling day from each of the four sites. To determine the number of days during which the sorting crew would be on-site, the total number of samples needed (residential samples plus commercial samples plus self-haul samples) was divided by 20.

For instance, a total of 246 samples was needed from Central Landfill over the four week period, including:

- ◆ 70 residential samples;
- ◆ 106 commercial samples; and
- ◆ 70 self-haul samples.

To accomplish the goal of examining these 246 samples at Central Landfill, the sorting crew was scheduled to spend 12 days at this site (246 samples divided by 20 samples per day equals 12.3 sampling days).

As previously mentioned, the one exception incorporated into this approach was the decision to over-sample from the Guerneville Transfer Station. Remaining true to the methodology would have required that only one day be spent at the Guerneville Transfer Station. To accommodate

the desire to spend two days, very minor modifications were made to under-sample at the other three sites.

ASSIGNING SPECIFIC SAMPLING DATES TO SITES

Within the limits of the methodology, every attempt was made to examine an equal amount of waste during both the "wet" and "dry" seasons at all site locations. Thus, specific dates were allocated to each facility with the goal of providing data that accurately represented both seasons.

The last week of July and the third week of August 1995 were selected, in concert with the client, to represent the "dry" season, because the weather is normally predictable from year to year and would fairly represent the typical situation during the summer months. The last week of January and the second week of February 1996 were selected to represent the "wet" season, again because the weather is normally predictable from year to year and would accurately portray the amount and type of waste generated during this season.

Specific days within these weeks were assigned to each facility location.

CALCULATED SAMPLING INTERVALS BY DAY

Once the number of samples to be sorted, by type of generator, were assigned to each day (and thus to each facility), it was important to design a system for intercepting specific vehicles. For the accuracy of the projections for which the data will be used, it is important that this system incorporate a random selection process that will substantially reduce the possibility of bias in the waste that is examined. To do this, sampling intervals were determined for each type of incoming vehicle. A sampling interval indicates which of the vehicles will be selected for having its load sampled.

Information on numbers of vehicles arriving on the same day of the week during the previous year were used to estimate how many vehicles to expect (e.g., the number of vehicles entering on the first Monday during the last week of July 1994 was considered to predict the number of vehicles entering on the first Monday during the last week of July 1995).

Dividing the number of expected vehicles by the number of trucks from which samples would be selected created the sampling interval. For example, if 130 residential trucks were expected, from which 10 samples were needed, every 13th truck would be intercepted. Please refer to the attached documents to view the number of vehicles and the sampling interval for each location and day of data collection.

The number of samples to be examined, along with information regarding the sampling interval, were provided to the sorting crew for each day of data collection. The data collection forms are presented as part of this appendix.

Sample Calculations

ALLOCATION OF SAMPLES BY GENERATOR TYPE BY SITE									
Based on Data for January 1994 - April 1995									
	Residential			Commercial			Self-haul		
	Tons	% of Total Res	Samples from 100	Tons	% of Total Comm	Samples from 150	Tons	% of Total SH	Samples from 150
Central Landfill	89,836	70%	70	189,837	71%	106	56,582	48%	70
Sonoma TS	19,722	15%	15	27,238	12%	18*	28,478	23%	35
Healdsburg TS	15,435	12%	12	34,354	15%	22	25,101	21%	31
Guerneville TS	3,944	3%	3	6,715	3%	4	11,865	10%	14
TOTALS	128,937			235,142			121,826		
ALLOCATION OF SAMPLES FOR A TYPICAL SAMPLING DAY									
	Total Residential		Total Commercial		Total Commercial		Total Self-haul		Total Self-haul
	Residential Samples	Sampling Days	Residential Samples Per Day	Commercial Samples	Sampling Days	Commercial Samples Per Day	Self-haul Samples	Sampling Days	Self-haul Samples Per Day
Central Landfill	70	12	5.83	106	12	8.83	70	12	5.83
Sonoma TS	15	3	5.00	18	3	6.00	35	3	11.67
Healdsburg TS	12	3	4.00	22	3	7.33	31	3	10.33
Guerneville TS	3	2	1.50	4	2	2.00	14	2	7.00
TOTALS	100			150			150		
REALLOCATION OF SAMPLES TO MAKE 20 SAMPLES PER DAY									
	Total Residential		Total Commercial		Total Commercial		Total Self-haul		Total Self-haul
	Residential Samples	Sampling Days	Residential Samples Per Day	Commercial Samples	Sampling Days	Commercial Samples Per Day	Self-haul Samples	Sampling Days	Self-haul Samples Per Day
Central Landfill	70	12	5 to 6	106	12	8	70	12	6
Sonoma TS	13	3	4	19	3	6 to 7	35	3	9 to 10
Healdsburg TS	14	3	4	21	3	7 to 8	31	3	9
Guerneville TS	3	2	4	4	2	4	14	2	12
TOTALS	100			150			150		
* Had to change the number of samples to make it sum to quotas.									

Vehicles Per Sampling Day and Intervals

	Central		Sonoma		Healdsburg		Guerneville	
	Veh	Interval	Veh	Interval	Veh	Interval	Veh	Interval
Monday, July 24								
Residential Compactors	6	4th						
Commercial Debris Boxes	3	6th						
Commercial Compactors	5	6th						
Self-haul vehicles	6	30th						
Tuesday, July 25								
Residential Compactors	6	4th						
Commercial Debris Boxes	3	14th						
Commercial Compactors	5	5th						
Self-haul vehicles	6	35th						
Wednesday, July 26								
Residential Compactors			4	1st 4				
Commercial Debris Boxes			2	2nd				
Commercial Compactors			4	1st 4				
Self-haul vehicles			10	9th				
Thursday, July 27								
Residential Compactors					4	all*		
Commercial Debris Boxes					3	3rd		
Commercial Compactors					4	all*		
Self-haul vehicles					9	12th		
Friday, July 28								
Residential Compactors							4	1st 4
Commercial Debris Boxes							2	2nd
Commercial Compactors							2	all
Self-haul vehicles							12	5th
* There may not be 4 available. Substitute with self-haul and we'll make it up later.								

Vehicles Per Sampling Day and Intervals

	Central		Sonoma		Healdsburg		Guerneville	
	Veh	Interval	Veh	Interval	Veh	Interval	Veh	Interval
Monday, August 21								
Residential Compactors	6	4th						
Commercial Debris Boxes	3	15th						
Commercial Compactors	5	6th						
Self-haul vehicles	6	30th						
Tuesday, August 22								
Residential Compactors	6	4th						
Commercial Debris Boxes	3	17th						
Commercial Compactors	5	6th						
Self-haul vehicles	6	50th						
Wednesday, August 23								
Residential Compactors	6	4th						
Commercial Debris Boxes	3	12th						
Commercial Compactors	5	5th						
Self-haul vehicles	6	50th						
Thursday, August 24								
Residential Compactors	6	3rd						
Commercial Debris Boxes	3	12th						
Commercial Compactors	5	5th						
Self-haul vehicles	6	50th						
Friday, August 25								
Residential Compactors			4	4th				
Commercial Debris Boxes			2	5th				
Commercial Compactors			4	2nd				
Self-haul vehicles			10	13th				
Saturday, August 26								
Residential Compactors								
Commercial Debris Boxes	2	3rd						
Commercial Compactors								
Self-haul vehicles	18	23rd						

Vehicles Per Sampling Day and Intervals

	Central		Sonoma		Healdsburg		Guerneville	
	Veh	Interval	Veh	Interval	Veh	Interval	Veh	Interval
Monday, January 22								
Residential Compactors			4	4th				
Commercial Debris Boxes			2	4th				
Commercial Compactors			4	2nd				
Self-haul vehicles			10	6th				
Tuesday, August 22								
Residential Compactors					4	8th		
Commercial Debris Boxes					2	16th		
Commercial Compactors					5	10th		
Self-haul vehicles					9	6th		
Wednesday, August 23								
Residential Compactors							4	1st 4
Commercial Debris Boxes							3	1st 3
Commercial Compactors							1	1st 1
Self-haul vehicles							12	2nd
Thursday, August 24								
Residential Compactors	6	2nd						
Commercial Debris Boxes	5	5th						
Commercial Compactors	3	3rd						
Self-haul vehicles	6	33rd						
Friday, August 25								
Residential Compactors	6	1.5						
Commercial Debris Boxes	5	4th						
Commercial Compactors	3	3rd						
Self-haul vehicles	6	66th						

Vehicles Per Sampling Day and Intervals

	Central		Sonoma		Healdsburg		Guerneville	
	Veh	Interval	Veh	Interval	Veh	Interval	Veh	Interval
Monday February 12								
Residential Compactors					4	2nd		
Commercial Debris Boxes					2	3rd		
Commercial Compactors					6	1.5		
Self-haul vehicles					9	9th		
Tuesday, February 13								
Residential Compactors	5	9th						
Commercial Debris Boxes	3	16th						
Commercial Compactors	5	10th						
Self-haul vehicles	6	44th						
Wednesday, February 14								
Residential Compactors	6	6th						
Commercial Debris Boxes	3	16th						
Commercial Compactors	5	8th						
Self-haul vehicles	6	45th						
Thursday, February 15								
Residential Compactors	5	7th						
Commercial Debris Boxes	3	15th						
Commercial Compactors	5	8th						
Self-haul vehicles	6	53rd						
Friday, February 16								
Residential Compactors	6	6th						
Commercial Debris Boxes	2	15th						
Commercial Compactors	6	8th						
Self-haul vehicles	6	74th						