

Chapter 12: Lamar

COMMUNITY PROFILE

The City of Lamar is the county seat of Barton County and is located in Southwest Missouri. It is a member of Solid Waste Management District "M". The leading areas of employment in the county are manufacturing, agriculture, and retail trade. All of the waste sorts were conducted at the BFI Landfill, four miles north of Lamar. A majority of the waste sampled during all three sorts was generated in Lamar and Barton County.

Lamar is located on highway 71. It is 74 miles west of Springfield, 122 miles south of Kansas City, and 284 miles southwest of St. Louis.

Demographics:

	Lamar	Barton County
Area (sq. miles)	3.4	594
Population (1992)	4,168	11,478
Density (per sq. mile)	1226	19
Pop. Change since 1980	2.8%	1.6%
Number of households	1721	4524
Persons per household	2.29	2.46
High school graduates	64.9	68.2%
Median Family Income	\$28,847	\$25,447
Percent below poverty level	14.2%	14.2%

Solid waste collection

The City of Lamar collects residential trash with the city limits. A private hauler, Sunshine Sanitation collects much of the commercial trash in Lamar and rural residential areas around Lamar. Solid waste collection in other areas is provided by both private and municipal waste haulers.

Solid waste disposal

The Lamar Landfill is located 4 miles north of Lamar on highway 71. It is the only approved landfill in the District. It is privately owned and operated by Browning Ferris Inc. (BFI). The landfill receives approximately 200,000 tons of waste per year. The current tipping fee is \$22.75 per ton.

Waste reduction and recycling programs

There is a drop-off center for recyclables at the BFI Landfill. The landfill manages the drop-off center and markets the recyclables. Approximately 10 tons of recyclable materials are collected at the landfill yearly.

Lamar Results

Information about sample size and composition are listed in tables 12-1 through 12-8

All weights are listed in pounds and all volumes are in cubic feet.

SORT #1

Sort Conditions

The first sort was conducted April 8th through the 12th. The sort facility was set up on a grassy area next to the administrative building, approximately 500 yards from the tipping area. The samples were transported to and from the facility by trailer. Weather conditions were mild and sunny.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	2,017,600
Total Sample Weight (lbs)	3,470.7
Significance Test Results	.000
Number of Samples	16

OTHER WASTE CATEGORIES			
Over-the-counter Medication (OTC)	8	Beauty/Hygiene Aerosol Products	2
Prescription Medication (Rx)	5	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	15	Gardening/Yard Care Products	1
Household Cleaning Products	5	Pet Groom Products	0
Sharps/Blades	3	Disposable Razors	40
Syringes	10	Alkaline Batteries	33
Hardware/Shop Products	32	Automobile Maintenance/Cleaning Products	1
Aerosol Cans	5		
Miscellaneous items: 1 package of moth balls, 3 battery packs, 1 intravenous nutrition supply, 1 container of shoe polish, 1 lighter			

LAMAR SORT #1

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	220	49.8	80%	20%	drop-off	Carthage & Joplin
2	243	48.9	90%	10%	curbside/drop-off	Lamar
3	167	52	50%	50%	curbside/drop-off	Lamar
4	283	63.4	100%	0%	none	Granby
5	191.1	43.8	50%	50%	curbside/drop-off	Lamar
6	237.1	47.4	0%	100%	drop-off	Neosho
7	230	50.3	50%	50%	none	McDonald Co.
8	246	47.1	50%	50%	drop-off	Neosho
9	221	49.9	75%	25%	none	Goodman
10	239	49.4	50%	50%	curbside/drop-off	Lamar
11	148	40.2	50%	50%	curbside/drop-off	Lamar
12	268	57.7	85%	15%	none	Seneca
13	193.5	45.8	90%	10%	curbside/drop-off	Lamar
14	197	41.3	90%	10%	curbside/drop-off	Lamar
15	161.5	46	50%	50%	curbside/drop-off	Lamar
16	225.5	49.8	50%	50%	curbside/drop-off	Lamar
TOTALS	3470.7	782.8				
AVERAGE	216.9	48.9	63%	36%		

TABLE 12-1

CATEGORY	LAMAR				SORT # 1	
	TOTALS		AVERAGE		PERCENTAGE	
	wt.	vol.	wt.	vol.	Pct. by wt.	Pct. by vol.
Cardboard	240.7	100.6	15.0	6.3	6.94%	12.84%
Newsprint	205.6	37.3	12.9	2.3	5.93%	4.76%
Magazines	103.5	10.5	6.5	0.7	2.98%	1.33%
High Grade	63.0	18.4	3.9	1.2	1.82%	2.35%
Mixed	557.1	139.5	34.8	8.7	16.06%	17.81%
PAPER TOTALS	1169.9	306.2	73.1	19.1	33.73%	39.09%
Clear	89.0	7.7	5.6	0.5	2.57%	0.98%
Brown	48.0	4.2	3.0	0.3	1.38%	0.53%
Green	13.5	1.3	0.8	0.1	0.39%	0.17%
Other	22.0	2.5	1.4	0.2	0.63%	0.32%
GLASS TOTALS	172.5	15.7	10.8	1.0	4.97%	2.00%
Alum. Cans	38.0	15.5	2.4	1.0	1.10%	1.98%
Other Alum	25.0	11.0	1.6	0.7	0.72%	1.40%
Non ferrous	8.5	0.8	0.5	0.1	0.25%	0.10%
Food Cans	102.2	21.2	6.4	1.3	2.95%	2.70%
Ferrous	56.5	5.5	3.5	0.3	1.63%	0.70%
Oil Filters	6.0	0.5	0.4	0.0	0.17%	0.06%
METAL TOTALS	236.2	54.5	14.8	3.4	6.81%	6.95%
PET # 1	69.0	43.3	4.3	2.7	1.99%	5.52%
HDPE # 2	78.2	48.3	4.9	3.0	2.25%	6.16%
Film	136.3	63.8	8.5	4.0	3.93%	8.15%
Other Plastic	286.5	99.0	17.9	6.2	8.26%	12.64%
PLASTIC TOTALS	570.0	254.3	35.6	15.9	16.43%	32.47%
Food Waste	610.5	48.5	38.2	3.0	17.60%	6.19%
Wood Waste	14.5	1.8	0.9	0.1	0.42%	0.23%
Textiles	212.6	37.5	13.3	2.3	6.13%	4.79%
Diapers	176.0	18.8	11.0	1.2	5.07%	2.39%
Other Organics	126.3	24.2	7.9	1.5	3.64%	3.09%
ORGANIC TOTALS	1139.9	130.8	71.2	8.2	32.86%	16.69%
Fines	118.5	13.0	7.4	0.8	3.42%	1.66%
Other Inorganics	61.5	8.9	3.8	0.6	1.77%	1.14%
INORGANIC TOTALS	180.0	21.9	11.3	1.4	5.19%	2.80%
GRAND TOTAL	3468.5	783.2	216.8	49.0	100.00%	100.00%

TABLE 12-2

SORT # 2

Sort Conditions

The second sort was conducted July 15th through the 17th. The sort facility was set up approximately in the same location as the first sort. Weather conditions were sunny and very warm.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	2,017,600
Total Sample Weight (lbs)	2616.7
Significance Test Results	.000
Number of Samples	12

OTHER WASTE CATEGORIES			
Over-the-counter Medication (OTC)	23	Beauty/Hygiene Aerosol Products	2
Prescription Medication (Rx)	6	Household Cleaning Aerosol Products	1
Beauty/Hygiene Products	3	Gardening/Yard Care Products	0
Household Cleaning Products	4	Pet Groom Products	0
Sharps/Blades	1	Disposable Razors	7
Syringes	0	Alkaline Batteries	26
Hardware/Shop Products	1	Automobile Maintenance/Cleaning Products	5
Aerosol Cans	5		
Miscellaneous items: 1 freezer pack, 1 container of lighter fluid, 1 package of fireworks.			

**LAMAR
SORT # 2**

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	201	38.2	80%	20%	curbside/drop-off	Lamar
2	156	25.2	50%	50%	curbside/drop-off	Monet
3	232	47.7	95%	5%	none	Carthage
4	197.5	67.4	50%	50%	curbside/drop-off	Lamar
5	219	42.7	50%	50%	curbside/drop-off	Lamar
6	225.7	59.8	50%	50%	curbside/drop-off	Lamar
7	233	53.7	50%	50%	curbside/drop-off	Lamar
8	174	32.4	50%	50%	curbside/drop-off	Monet
9	243	54.3	50%	50%	curbside/drop-off	Lamar
10	258	54.6	50%	50%	curbside/drop-off	Lamar
11	259	50.9	50%	50%	curbside/drop-off	Lamar
12	218.5	49.8	50%	50%	curbside/drop-off	Oneida
TOTALS	2616.7	576.7				
AVERAGE	218.1	48.1	56%	44%		

TABLR 12-3

CATEGORY	LAMAR				SORT # 2	
	TOTALS	AVERAGE			Pct. by wt.	Pct. by vol.
	wt.	vol.	wt.	vol.		
Cardboard	185.0	75.7	15.4	6.3	7.08%	13.13%
Newsprint	132.0	20.3	11.0	1.7	5.05%	3.52%
Magazines	135.0	12.2	11.3	1.0	5.16%	2.12%
High Grade	72.5	11.1	6.0	0.9	2.77%	1.92%
Mixed	407.0	113.7	33.9	9.5	15.57%	19.72%
PAPER TOTALS	931.5	233.0	77.6	19.4	35.62%	40.40%
Clear	87.0	8.1	7.3	0.7	3.33%	1.40%
Brown	12.0	1.4	1.0	0.1	0.46%	0.24%
Green	1.0	0.3	0.1	0.0	0.04%	0.05%
Other	18.0	1.6	1.5	0.1	0.69%	0.28%
GLASS TOTALS	118.0	11.4	9.8	1.0	4.51%	1.98%
Alum. Cans	46.5	8.9	3.9	0.7	1.78%	1.54%
Other Alum	24.5	2.4	2.0	0.2	0.94%	0.42%
Non ferrous	13.0	1.7	1.1	0.1	0.50%	0.29%
Food Cans	84.0	15.2	7.0	1.3	3.21%	2.64%
Ferrous	23.1	2.4	1.9	0.2	0.88%	0.42%
Oil Filters	0.0	0.0	0.0	0.0	0.00%	0.00%
METAL TOTALS	191.1	30.6	15.9	2.6	7.31%	5.31%
PET # 1	68.0	29.9	5.7	2.5	2.60%	5.18%
HDPE # 2	70.0	33.2	5.8	2.8	2.68%	5.76%
Film	81.0	37.0	6.8	3.1	3.10%	6.42%
Other Plastic	181.7	78.1	15.1	6.5	6.95%	13.54%
PLASTIC TOTALS	400.7	178.2	33.4	14.9	15.32%	30.90%
Food Waste	487.0	46.1	40.6	3.8	18.62%	7.99%
Wood Waste	17.0	2.1	1.4	0.2	0.65%	0.36%
Textiles	146.0	25.8	12.2	2.2	5.58%	4.47%
Diapers	121.0	11.2	10.1	0.9	4.63%	1.94%
Other Organics	105.5	27.0	8.8	2.3	4.03%	4.68%
ORGANIC TOTALS	876.5	112.2	73.0	9.4	33.52%	19.46%
Fines	64.0	9.3	5.3	0.8	2.45%	1.61%
Other Inorganics	33.0	2.0	2.8	0.2	1.26%	0.35%
INORGANIC TOTALS	97.0	11.3	8.1	0.9	3.71%	1.96%
GRAND TOTAL	2614.8	576.7	217.9	48.1	100.00%	100.00%

TABLE 12-4

SORT # 3

Sort Conditions

The third sort was conducted November 11th and 12th. The sort facility was set in the same location as Sort # 2. Weather conditions were overcast, windy, and cool. Only 10 samples were collected due to weather conditions.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	2,017,600
Total Sample Weight (lbs)	1,976.1
Significance Test Results	.000
Number of Samples	10

OTHER WASTE CATEGORIES			
Over-the-Counter Medication (OTC)	0	Beauty/Hygiene Aerosol Products	0
Prescription Medication (Rx)	1	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	3	Gardening/Yard Care Products	0
Household Cleaning Products	0	Pet Groom Products	0
Sharps/Blades	0	Disposable Razors	9
Syringes	5	Alkaline Batteries	2
Hardware/Shop Products	0	Automobile Maintenance/Cleaning Products	0
Aerosol Cans	1		
Miscellaneous items: None.			

**LAMAR
SORT # 3**

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	195	37.2	50%	50%	Curbside/Drop-off	Lamar (rural)
2	202	42.5	70%	30%	None	Pierce City
3	189	39.2	50%	50%	Curbside/Drop-off	Lamar (rural)
4	179	46.2	100%	0%	Curbside/Drop-off	Lamar (city)
5	186.6	35.8	50%	50%	Curbside/Drop-off	Lamar (rural)
6	223.5	49.2	0%	100%	Curbside/Drop-off	Lamar
7	157	36.8	0%	100%	Curbside/Drop-off	Lamar
8	232	46.4	50%	50%	None	Nevada
9	233	34.4	100%	0%	None	Rich Hill
10	179	46.1	90%	10%	None	Lockwood (rural)
TOTALS	1976.1	413.8				
AVERAGE	197.6	41.4	56%	44%		

TABLE 12-5

CATEGORY	LAMAR				SORT # 3	
	TOTALS		AVERAGE		PERCENTAGE	
	wt.	vol.	wt.	vol.	Pct. by wt.	Pct. by vol.
Cardboard	136.5	48.7	13.7	4.9	6.91%	11.77%
Newsprint	149.0	23.5	14.9	2.4	7.54%	5.68%
Magazines	102.0	8.0	10.2	0.8	5.16%	1.93%
High Grade	51.5	10.1	5.2	1.0	2.61%	2.44%
Mixed	295.5	80.5	29.6	8.1	14.95%	19.45%
PAPER TOTALS	734.5	170.8	73.5	17.1	37.17%	41.28%
Clear	69.0	5.2	6.9	0.5	3.49%	1.26%
Brown	20.5	1.9	2.1	0.2	1.04%	0.46%
Green	6.5	0.5	0.7	0.1	0.33%	0.12%
Other	10.3	1.3	1.0	0.1	0.52%	0.31%
GLASS TOTALS	106.3	8.9	10.6	0.9	5.38%	2.15%
Alum. Cans	20.5	6.9	2.1	0.7	1.04%	1.67%
Other Alum	14.5	4.1	1.5	0.4	0.73%	0.99%
Non ferrous	13.0	1.4	1.3	0.1	0.66%	0.34%
Food Cans	85.0	14.2	8.5	1.4	4.30%	3.43%
Ferrous	13.0	1.2	1.3	0.1	0.66%	0.29%
Oil Filters	3.0	0.5	0.3	0.1	0.15%	0.12%
METAL TOTALS	149.0	28.3	14.9	2.8	7.54%	6.84%
PET # 1	34.5	14.0	3.5	1.4	1.75%	3.38%
HDPE # 2	53.5	24.0	5.4	2.4	2.71%	5.80%
Film	55.5	27.0	5.6	2.7	2.81%	6.52%
Other Plastic	135.0	71.5	13.5	7.2	6.83%	17.28%
PLASTIC TOTALS	278.5	136.5	27.9	13.7	14.09%	32.99%
Food Waste	479.5	38.8	48.0	3.9	24.27%	9.38%
Wood Waste	7.7	0.8	0.8	0.1	0.39%	0.19%
Textiles	62.5	10.1	6.3	1.0	3.16%	2.44%
Diapers	52.0	4.7	5.2	0.5	2.63%	1.14%
Other Organics	43.0	5.6	4.3	0.6	2.18%	1.35%
ORGANIC TOTALS	644.7	60.0	64.5	6.0	32.63%	14.50%
Fines	31.5	5.2	3.2	0.5	1.59%	1.26%
Other Inorganics	31.5	4.1	3.2	0.4	1.59%	0.99%
INORGANIC TOTALS	63.0	9.3	6.3	0.9	3.19%	2.25%
GRAND TOTAL	1976.0	413.8	197.6	41.4	100.00%	100.00%

TABLE 12-6

SORT SUMMARY

Seasonal variations

- The percentage of food waste was higher during the third sort. Several samples included restaurant waste.
- The percentage of magazines were higher during the second sort. Two samples contained large amounts of old magazines.

Sort results

- Chart 12-1 graphically compares the three seasonal waste sort results and shows the average waste composition, by major category, for Lamar.
- The sample data for all Lamar sorts is listed on table 12-7.
- The sort results for all Lamar sorts are listed on table 12-8.
- The summary of statistical relevance for the Lamar sorts is located on page 194.
- The total for all “other wastes” found during the Lamar sorts is on page 194.

All weights are in pounds and volumes are listed in cubic feet.

Comparisons of the Clinton waste stream to previous studies and other communities can be found in chapter 13.

LAMAR RESULTS BY WEIGHT

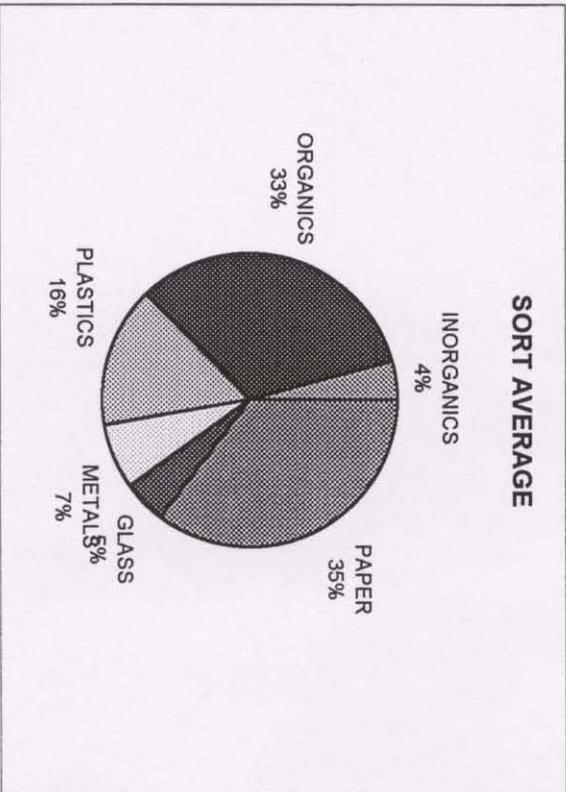
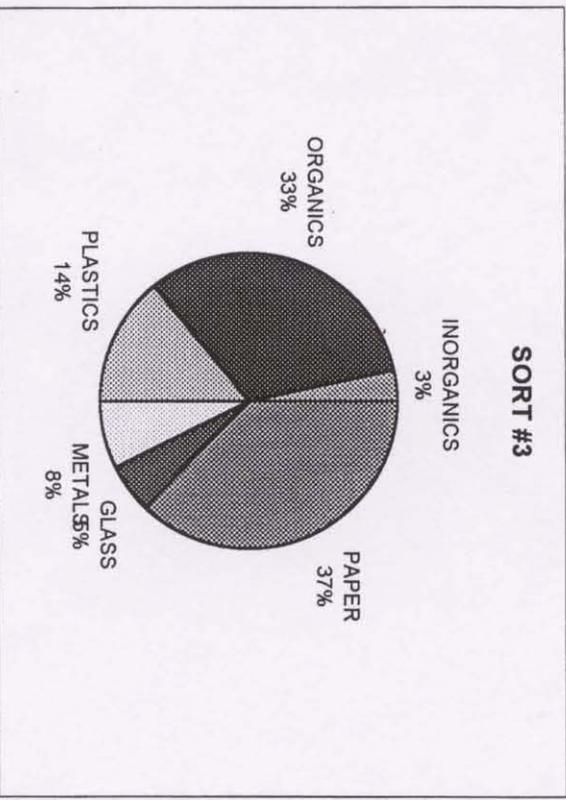
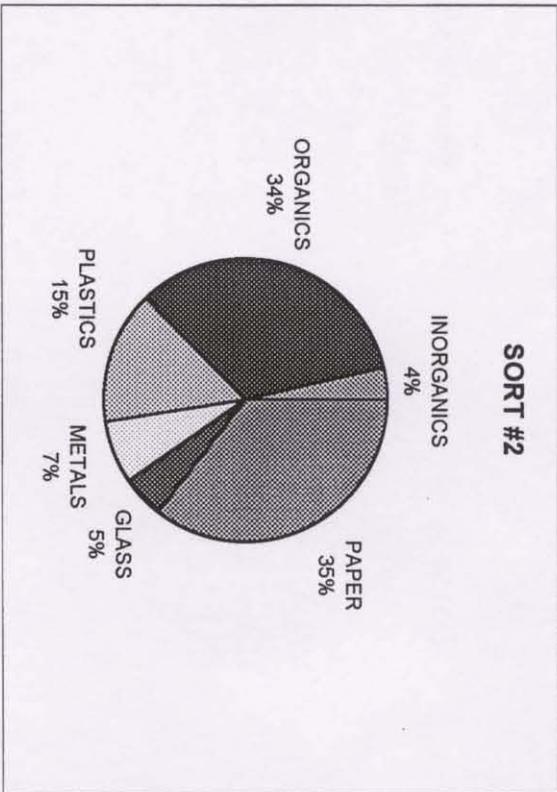
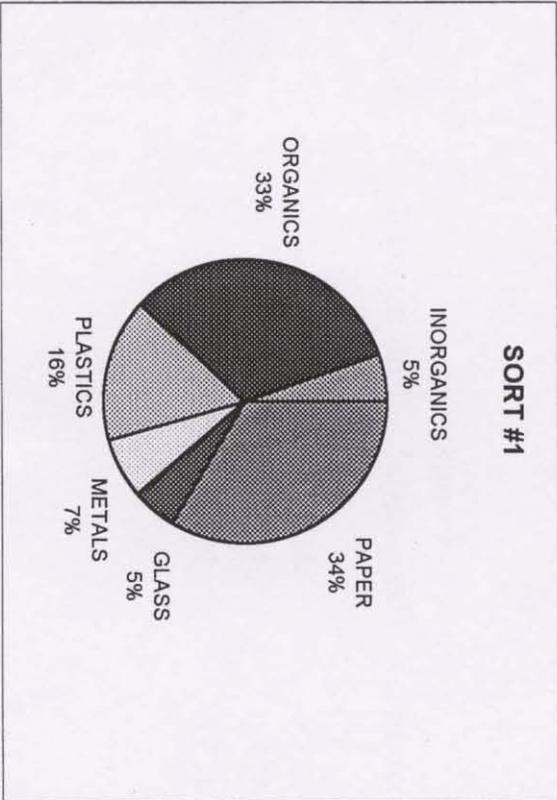


CHART 12-1

**LAMAR
SAMPLE SUMMARY**

Sort #	Dates	Number of Samples	Sample Size		Composition	
			Weight	Volume	Residential	Commercial
1	4/8-4/10	16	3471.0	783.0	47%	53%
2	7/15-7/17	12	2617.0	577.0	56%	44%
3	11/11-11/13	10	1976.1	413.8	56%	44%
TOTALS		38.0	8064.1	1773.8	53%	47%
AVERAGE		12.7	2688.0	591.3	53%	47%

TABLE 12-7

CATEGORY	LAMAR						SUMMARY	
	SORT # 1		SORT # 2		SORT #3		AVERAGE	
	WT.	VOL.	WT.	VOL.	WT.	VOL.	WT.	VOL.
Cardboard	6.9%	12.8%	7.1%	13.1%	6.9%	11.8%	7.0%	12.7%
Newsprint	5.9%	4.8%	5.0%	3.5%	7.5%	5.7%	6.0%	4.6%
Magazines	3.0%	1.3%	5.2%	2.1%	5.2%	1.9%	4.2%	1.7%
High Grade	1.8%	2.3%	2.8%	1.9%	2.6%	2.4%	2.3%	2.2%
Mixed	16.1%	17.8%	15.6%	19.7%	15.0%	19.5%	15.6%	18.8%
PAPER TOTALS	33.7%	39.1%	35.6%	40.4%	37.2%	41.3%	35.2%	40.0%
Clear	2.6%	1.0%	3.3%	1.4%	3.5%	1.3%	3.0%	1.2%
Brown	1.4%	0.5%	0.5%	0.2%	1.0%	0.5%	1.0%	0.4%
Green	0.4%	0.2%	0.0%	0.1%	0.3%	0.1%	0.3%	0.1%
Other	0.6%	0.3%	0.7%	0.3%	0.5%	0.3%	0.6%	0.3%
GLASS TOTALS	5.0%	2.0%	4.5%	2.0%	5.4%	2.2%	4.9%	2.0%
Alum. Cans	1.1%	2.0%	1.8%	1.5%	1.0%	1.7%	1.3%	1.8%
Other Alum	0.7%	1.4%	0.9%	0.4%	0.7%	1.0%	0.8%	1.0%
Non ferrous	0.2%	0.1%	0.5%	0.3%	0.7%	0.3%	0.4%	0.2%
Food Cans	2.9%	2.7%	3.2%	2.6%	4.3%	3.4%	3.4%	2.9%
Ferrous	1.6%	0.7%	0.9%	0.4%	0.7%	0.3%	1.1%	0.5%
Oil Filters	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%	0.1%	0.1%
METAL TOTALS	6.8%	7.0%	7.3%	5.3%	7.5%	6.8%	7.2%	6.4%
PET # 1	2.0%	5.5%	2.6%	5.2%	1.7%	3.4%	2.1%	4.9%
HDPE # 2	2.3%	6.2%	2.7%	5.8%	2.7%	5.8%	2.5%	5.9%
Film	3.9%	8.1%	3.1%	6.4%	2.8%	6.5%	3.4%	7.2%
Other Plastic	8.3%	12.6%	6.9%	13.5%	6.8%	17.3%	7.5%	14.0%
PLASTIC TOTALS	16.4%	32.5%	15.3%	30.9%	14.1%	33.0%	15.5%	32.1%
Food Waste	17.6%	6.2%	18.6%	8.0%	24.3%	9.4%	19.6%	7.5%
Wood Waste	0.4%	0.2%	0.7%	0.4%	0.4%	0.2%	0.5%	0.3%
Textiles	6.1%	4.8%	5.6%	4.5%	3.2%	2.4%	5.2%	4.1%
Diapers	5.1%	2.4%	4.6%	1.9%	2.6%	1.1%	4.3%	2.0%
Other Organics	3.6%	3.1%	4.0%	4.7%	2.2%	1.4%	3.4%	3.2%
ORGANIC TOTALS	32.9%	16.7%	33.5%	19.5%	32.6%	14.5%	33.0%	17.1%
Fines	3.4%	1.7%	2.4%	1.6%	1.6%	1.3%	2.7%	1.6%
Other Inorganics	1.8%	1.1%	1.3%	0.3%	1.6%	1.0%	1.6%	0.8%
INORGANIC TOTALS	5.2%	2.8%	3.7%	2.0%	3.2%	2.2%	4.2%	2.4%
SORT TOTALS	100%	100%						

TABLE 12-8

Lamar Statistical Summary	
Estimated MSW (lbs) Collected by Site During Sampling Period	6,000,000
Total Sample Weight (lbs)	8,062.8
Total Number of Samples Collected	38
Significance Test Results	.000
Mean Sample (lbs) and Confidence Interval (95%)	212.2 (+/-) 10.95

Lamar "Other Waste" Summary			
Over-the-Counter Medication (OTC)	31	Beauty/Hygiene Aerosol Products	4
Prescription Medication (Rx)	12	Household Cleaning Aerosol Products	1
Beauty/Hygiene Products	21	Gardening/Yard Care Products	1
Household Cleaning Products	9	Pet Groom Products	0
Sharps/Blades	4	Disposable Razors	56
Syringes	5	Alkaline Batteries	61
Hardware/Shop Products	33	Automobile Maintenance/Cleaning Products	6
Aerosol Cans	11		
Miscellaneous items: 1 freezer pack, 1 container of lighter fluid, 1 package of fireworks, 1 package of moth balls, 3 battery packs, 1 intravenous nutrition supply, 1 container of shoe polish, 1 lighter.			