



**CHAMPION INTERNATIONAL CORPORATION
CANTON MILL**

SOLID WASTE MANAGEMENT PLAN

JULY 1, 1996 - JUNE 30, 2006

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INTRODUCTION

Champion International Corporation's Canton facility is a pulp and paper mill that manufactures uncoated paper and bleached paperboard. The Canton Mill employs nearly 1,400 people and operates three uncoated paper machines and one paperboard machine around the clock. The four machines annually produce over 500,000 tons of paper and board.

This Solid Waste Management Plan was prepared in accordance with North Carolina General Statute 130A-309.09D (c), as amended in 1996 by the North Carolina General Assembly in HB859. These amendments provide for the owner of an industrial waste landfill to establish a waste management plan with the following components:

1. A waste reduction goal established by the generator
2. Options for the management and reduction of wastes evaluated by the generator
3. A waste management strategy, including plans for waste reduction and waste disposal, for the 10-year period covered by the plan

Through implementation of this comprehensive solid waste management plan, as well as updates that will follow every three years, the Canton Mill provides for the management of solid waste for the next 10 years. The long-range vision of the Canton Mill is to develop and maintain a comprehensive waste management program that provides the necessary disposal capacity, waste collection and transport services, efficient collection and marketing of recyclable materials, and on-going waste reduction capability. Included is improved solid waste cost management in an on-going effort to facilitate the mill's goal of achieving financial viability as a low-cost producer into the 21st Century.

Since 1991, impressive strides have been met at the mill in solid waste reduction. The Canton Mill Modernization Project (CMP), completed in 1994 at a cost of \$300 million, puts the mill on the cutting edge of pollution preventive technology in North America. As a result of this and other mill programs since the 1989/90 fiscal year (July 31, 1989 through June 30, 1990), process solid waste generation at the mill has been reduced significantly by an average total of 84,000 tons per year, or approximately 20%. Work continues to further enhance in-mill waste minimization. With an in-mill recycling program, non-process waste streams have declined by approximately 90% over the period.

Specific Canton Mill goals for waste management and waste minimization include:

1. To minimize the production of process waste streams (wastewater treatment plant sludge, lime mud, flyash and woodwaste)
2. To further develop an efficient non-process waste stream recycling program
3. To continue to develop an informed-workplace regarding waste management issues
4. To increase the efficiency and cost-effectiveness of the solid waste programs

PART I

GEOGRAPHIC AREA AND SOLID WASTE STREAM EVALUATION

GEOGRAPHIC AREA

This plan provides only for the solid waste streams generated by the Canton Pulp & Paper Mill of Champion International Corporation, located in Canton, North Carolina, Haywood County. The Canton Mill is located approximately 14 miles west of Asheville, North Carolina. The location of the mill and its associated Champion-owned landfill (Landfill No. 6, Permit No. 44-06), are shown on the map in Appendix A.

WASTE STREAM EVALUATION

Four basic types of wastes are generated at the Canton Mill:

Process Wastes, including waste water treatment sludge, lime mud, flyash and woodwaste (note that only process wastes are received at the Canton Mill Landfill No. 6);

Hazardous Wastes, including paint waste and parts washer degreasers;

Construction and Demolition Wastes, including inert bricks, blocks, concrete and wood; and

General Trash, including office waste and non-recyclables.

Many of the materials recycled in the mill, including paper and container board, are salvaged and sorted from the general trash waste stream. Some of these materials are recycled through local recycling vendors, as discussed below and in Appendix B. Other materials such as clean, unmarketable paper (broke and trimmings), wood fines, and polyethylene from depoly, are reused in the process or burned for energy recovery. Recyclable metals are mainly generated from construction and demolition activities, as well as mill maintenance. When appropriate, inert construction and demolition debris have been disposed in a Beneficial Fill in cooperation with Haywood County.

PAPER AND PAPERBOARD PRODUCTION

For this study, the basis of Canton Mill waste generation is the annual mill production of paper and paperboard products. Table 1 shows the rate of production by fiscal year from FY 1991-92 through FY 1995-96. The fiscal year estimates are based upon calendar year paper and paperboard production. It should be noted that production has remained consistent throughout the period, with total production exceeding 500,000 tons each year. A slight decrease in production is noticeable in FY 1992-93 due to Canton Modernization Project (CMP) construction activities.

**Table 1 - Canton Mill Paper and Board Production
Fiscal Year 1991-92 Through Fiscal Year 1995-96 - Tons**

Fiscal Year	Paper and Board Production - Tons
1991-92	569,583
1992-93	520,113
1993-94	514,640
1994-95	558,462
1995-96	548,357

PROCESS WASTE GENERATION

The vast majority of the wastes generated at the Canton Mill are the Process Wastes described below. These are the waste materials generated through the wood-handling, pulp-making, chemical-recovery and paper-making production processes. These wastes are disposed in the Canton Mill industrial landfill, North Carolina Solid Waste Management Permit No. 44-06. The landfill (Landfill No. 6) is wholly owned, operated and managed by Champion International Corporation. Wastes are delivered to the landfill from the mill site by truck on a daily basis. A summary of process waste disposal at Landfill No. 6 from FY 1989-90 through FY 1995-96 is shown in Table 2.

**Table 2 - Estimated Process Waste Disposal by Type
Fiscal Year 1989-90 Through Fiscal Year 1995-96
Canton Mill Landfill No. 6 (Permit No. 44-06)**

Fiscal Year	WWTP Sludge (Tons)	Lime Mud (Tons)	Boiler Flyash (Tons)	Boiler Cinders (Tons)	Wood Waste (Tons)	Total (Tons)
1989-90	225,916	116,560	72,066	8,940	6,315	429,797
1990-91	230,038	93,775	68,085	7,020	5,670	404,538
1991-92	220,343	96,959	63,727	6,668	1,992	389,689
1992-93	221,599	89,326	60,052	5,475	3,447	379,899
1993-94	149,746	110,092	53,379	6,420	8,596	328,233
1994-95	135,650	88,962	60,944	9,906	7,848	303,310
1995-96	132,935	117,553	71,148	11,943	12,095	345,674

ASBESTOS-CONTAINING MATERIAL GENERATION

In addition to the above waste streams, Landfill No. 6 is also permitted to receive for disposal asbestos-containing material (ACM) removed from roofing, pipe insulation, siding and related activities at the mill. The dedicated asbestos disposal area was permitted by the Division of Solid Waste Management on September 27, 1990. Although records are not available for ACM disposal prior to May 1992, a summary of disposal since that time is provided in Table 3.

Increases in ACM disposed typically represent capital projects, such as the CMP, or facility siding work to replace transite.

**Table 3 - Total ACM Disposed at Canton Mill Landfill No. 6
Fiscal Year 1991-92 Through Fiscal Year 1995-96**

Fiscal Year	Total Delivered	
	Pounds	Tons
1991-92	54,100	27
1992-93	379,970	190
1993-94	230,100	115
1994-95	79,240	40
1995-96	339,233	170

No other wastes are permitted for disposal at the Canton Mill No. 6 Landfill. All other waste streams are disposed via the Haywood County Waste Management System, by contractor, reused within the mill, or are recycled.

NON-PROCESS WASTE GENERATION

It is estimated that in FY 1991/92, 4% of the total waste stream (process wastes, etc.) consisted of deliveries to the municipal (town of Canton) landfill. The Town of Canton Landfill closed in April of 1994. Since that time, pallets/wood and construction and demolition (C&D) waste have been delivered to the Haywood County Wood Waste Landfill. Regular trash has been taken to the Haywood County Materials Recovery Facility (MRF) for subsequent processing and disposal at the Haywood County White Oak Landfill.

In addition to the above, metal, container board, waste white paper (from the paper-making process), and office paper has been recycled. A summary of the Canton Mill recycling program is provided in Appendix B. Please note that this information is available by calendar year only. Also, during 1996, an additional 4,100 tons of metal were recycled by contract and 17,740 tons of C&D waste were disposed in a Beneficial Fill in cooperation with Haywood County, saving valuable municipal landfill space and creating usable space for future activities. Because these materials were recycled and used in the Beneficial Fill, the tonnage is excluded from the Non-process Waste Generation.

Given the above, it is estimated that the following volumes of non-process wastes (wastes not disposed in the Canton Mill No. 6 Landfill, including pallets/wood, C&D material and regular trash) were generated by fiscal year.

**Table 4 - Estimated Canton Mill Total Non-process Waste Generation
Fiscal Year 1991-92 Through Fiscal Year 1995-96**

Fiscal Year	Tons
1991-92	18,050
1992-93	22,650
1993-94	11,859
1994-95	1,938
1995-96	1,563

The significant decrease of approximately 90% in the non-process waste landfill disposal is due to the completion of the CMP construction and demolition, and the implementation of the recycling program within the mill in 1994.

HAZARDOUS WASTE GENERATION

Hazardous wastes are also generated at the Canton Mill and disposed in compliance with Resource Conservation and Recovery Act (RCRA) standards. Hazardous wastes generated at the mill include paint solvents, spent parts washer degreasers, surplus laboratory and process chemicals, and electrical or instrument components. The amount of hazardous waste disposed by fiscal year is shown in Table 5, below.

**Table 5 - Canton Mill Hazardous Waste Disposal
Fiscal Year 1991-92 Through Fiscal Year 1995-96**

Fiscal Year	Total Disposed	
	Pounds	Tons
1991-92	25,426	12.7
1992-93	22,030	11.0
1993-94	22,272	11.1
1994-95	47,640	23.8
1995-96	16,665	8.3

TOTAL WASTE GENERATION

Total waste disposed by fiscal year, including process, non-process, ACM and hazardous wastes is provided in Table 6.

**Table 6 - Canton Mill Total Estimated Waste Generation
Fiscal Year 1991-92 Through 1995-96**

Fiscal Year	Tons Disposed				Total
	Process	Non-Process	ACM	Hazardous	
1991-92	389,689	18,050	27	13	407,779
1992-93	379,879	22,650	190	11	402,730
1993-94	328,233	11,859	115	11	340,218
1994-95	303,310	1,938	40	24	305,312
1995-96	345,674	1,563	170	8	347,415

When compared to the pre-CMP basis year FY 1989-90, a 20% reduction in process wastes has been realized. The generation rate of all mill waste streams has been reduced by capital programs where resource utilization and waste generation were integral components. For example, the CMP (1993) resulted in the production of over 30% less waste water treatment plant sludge than previously generated.

These aspects of the Canton Mill waste management program will be discussed further in the sections below.

PART II

WASTE REDUCTION INITIATIVES

As discussed in the Introduction and detailed in Part I, above, it is the Canton Mill's goal to continue to incorporate into its process the means to reduce the generation of waste at the source. Further waste generation reduction will result from diversions from the various waste streams as a result of recycling efforts, beneficial fills, and by-product use.

Waste disposal rates are calculated for fiscal year 1991-92 through fiscal year 1996-97 as shown in Table 7, below.

Table 7 - Waste Disposal Rates, FY 1991-92 Through FY 1995-96

Fiscal Year	Paper and Board Production - Tons	Total Waste Disposal - Tons	Disposal Rate Per Ton of Production
Baseline year 1991-92	569,583	407,752	0.716
1992-93	520,113	402,540	0.774
1993-94	514,640	340,103	0.661
1994-95	558,462	305,272	0.547
1995-96	548,357	347,245	0.633

SOURCE REDUCTION, RECYCLING, REUSE, AND ENERGY RECOVERY

Process Waste Management

At present, greater than 98% of the total waste generated in the Canton Mill consists of process wastes. To date, only major changes to the process involving capital investment or system retirement have significantly affected the Canton Mill disposal rate. Beyond the source reduction benefits of the Canton Modernization Project, multiple process waste reduction projects are under evaluation at the present time, although, to date, none have progressed beyond the conceptual phase.

Recycling, Reuse and Energy Recovery Management

It is evident from the Canton Mill waste generation history detailed above that continuous source reduction progress is being made with both, process and non-process waste streams. Although not significant by comparison to the tonnage of process wastes disposed at Landfill No. 6, the social and practical importance of the recycling program cannot be overstated. Over 90% (by weight) of in-mill non-process waste is now recycled annually, and a great deal of landfill space, as well as natural resources, saved.

Further efficiency and source reduction is planned for the recycling program as the system is expanded throughout the mill and more recyclables captured. Table 8, below, shows

the estimated tonnage of waste materials reused in the Canton Mill paper production process, burned for energy recovery, recycled, or used for beneficial fill.

Table 8 - Total Estimated Tons of Waste Materials Reused in the Canton Mill Process for Paper Production and Energy Recovery, Commercially Recycled, or Used for Beneficial Fill

	Calcarb ^{1/}	Broke & Trim ^{2/}	Wood Dust/ Screen Rejects, Cores & Depoly ^{3/}	-----Recycled ^{4/} -----				
				Mixed Metal	Container Board	Paper Broke	Office Paper	Beneficial Fill
1991	0	72,200	23,360	NA	--	--	--	--
1992	0	85,402	22,265	NA	--	--	--	--
1993	0	78,564	23,360	NA	--	--	--	--
1994	0	83,595	22,265	874	33	1,002	4	--
1995	1,757	70,423	22,265	1,724	58	728	83	--
1996	2,727	73,031	22,265	5,358	63	918	50	17,740

^{1/} Champion marketed agricultural liming product

^{2/} Paper reused in the paper-making process

^{3/} Burned for energy recovery -- Dry Tons. Department Estimate.

^{4/} Recycled via local recycling firms or by contractor. In 1996, 4,100 tons of metal were recycled by contractor, and 1,256 tons recycled through a local recycler.

NA -- Not available

Although not available on a fiscal year basis, the totals in Table 8, above, represent the annual volume of wastes that are diverted from the Champion landfill or the Haywood County White Oak Landfill. In addition, these materials have maintained a useful life as agricultural lime, fill material, recycling raw material, or energy. No materials are burned without energy recovery, thus lessening our dependence on coal.

Opportunities exist to further reduce the in-mill, non-process waste streams, including the recycling of paper baling wire and wooden pallets. In addition, project-based wastes handled by contractors represent an opportunity for increased sorting and recycling prior to disposal.

PART III

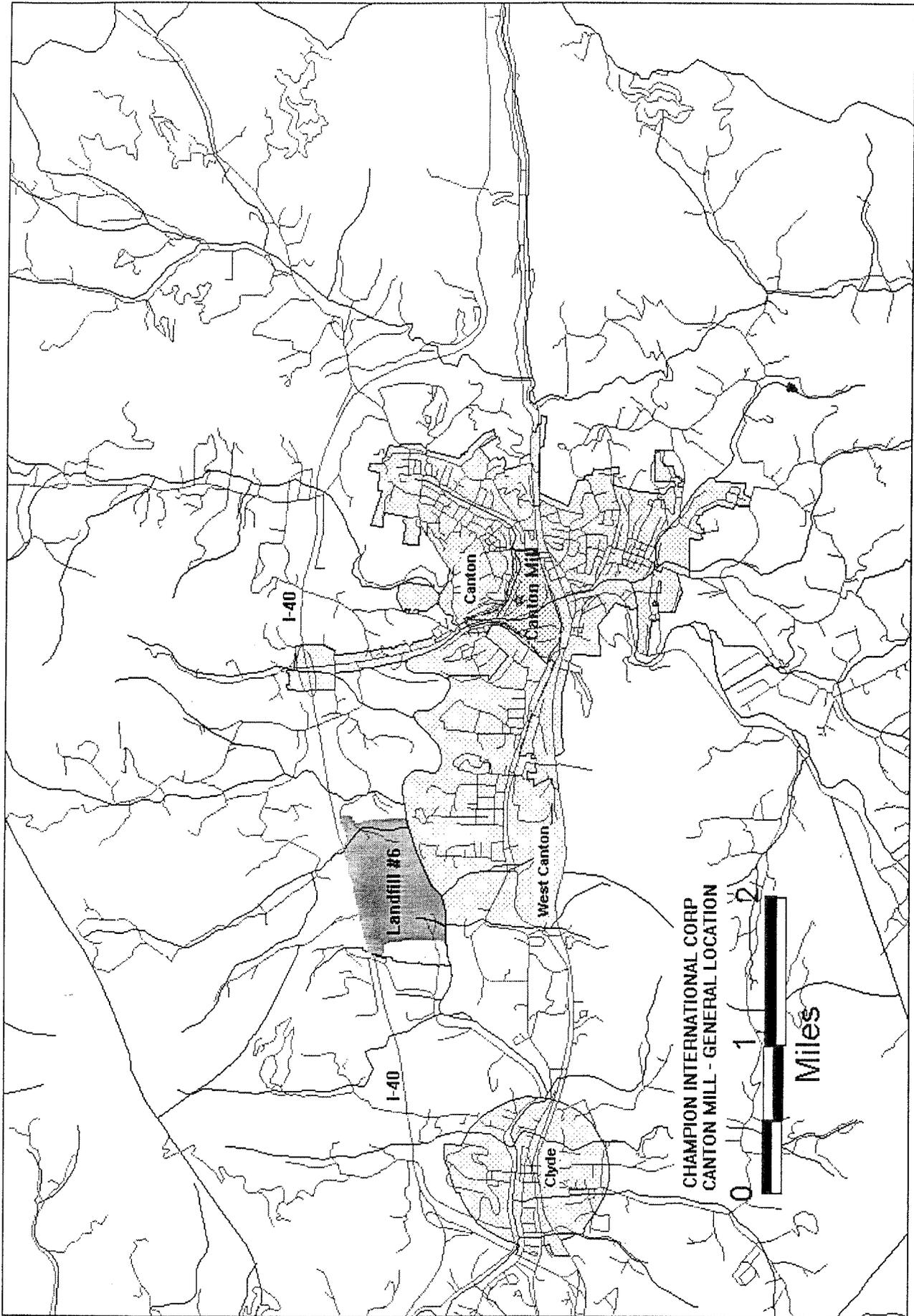
SUMMARY

For the purpose of this report, it has been assumed that mill production levels for pulp, paper, paper board, chemical recovery, and energy generation remain relatively constant through the next decade. Likewise, the resultant waste generation and associated waste management described in this document, including recycled materials, beneficial fill disposal, source reduction of process and non-process wastes, and the on-going investigation for further process waste reduction and beneficial reuse, will continue. Several solid waste source reduction and beneficial reuse projects are being evaluated, and market analysis continues.

To date, greater than 20% of the mass of in-process waste streams has been reduced, and non-process waste streams have been reduced by 90%, illustrating Champion's commitment to solid waste reduction. In addition, market development for calcarb, the waste lime product, continues with approximately 4,484 tons used for agricultural purposes to date.

Given the waste-handling and minimization programs as presently defined herein, the Canton Mill anticipates reducing the rate of waste generation through June 30, 2006. Waste generation is monitored regularly so that annual updates to the waste management system are possible. An updated plan will be completed every three years and made available to the Solid Waste Section, with reports outlining the plan implementation completed by August 1 of each year.

APPENDIX A



CHAMPION INTERNATIONAL CORP
CANTON MILL - GENERAL LOCATION

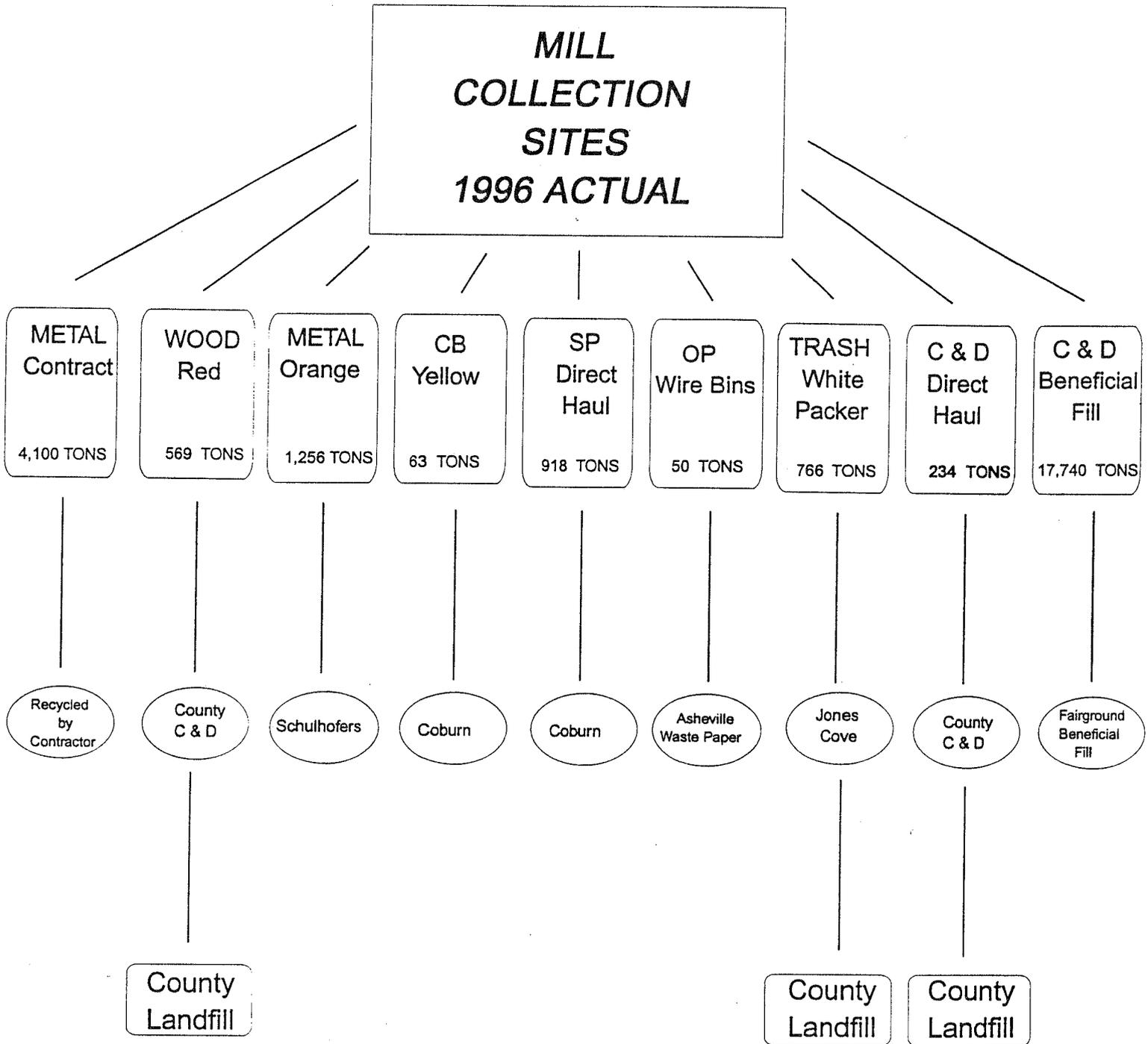


Miles

APPENDIX B

B-1

CHAMPION'S CANTON MILL NON-PROCESS SOLID WASTE PROGRAM



C & D = Construction and Demolition Waste

OP = Office Paper

CB = Cardboard

SP = Scrap Paper

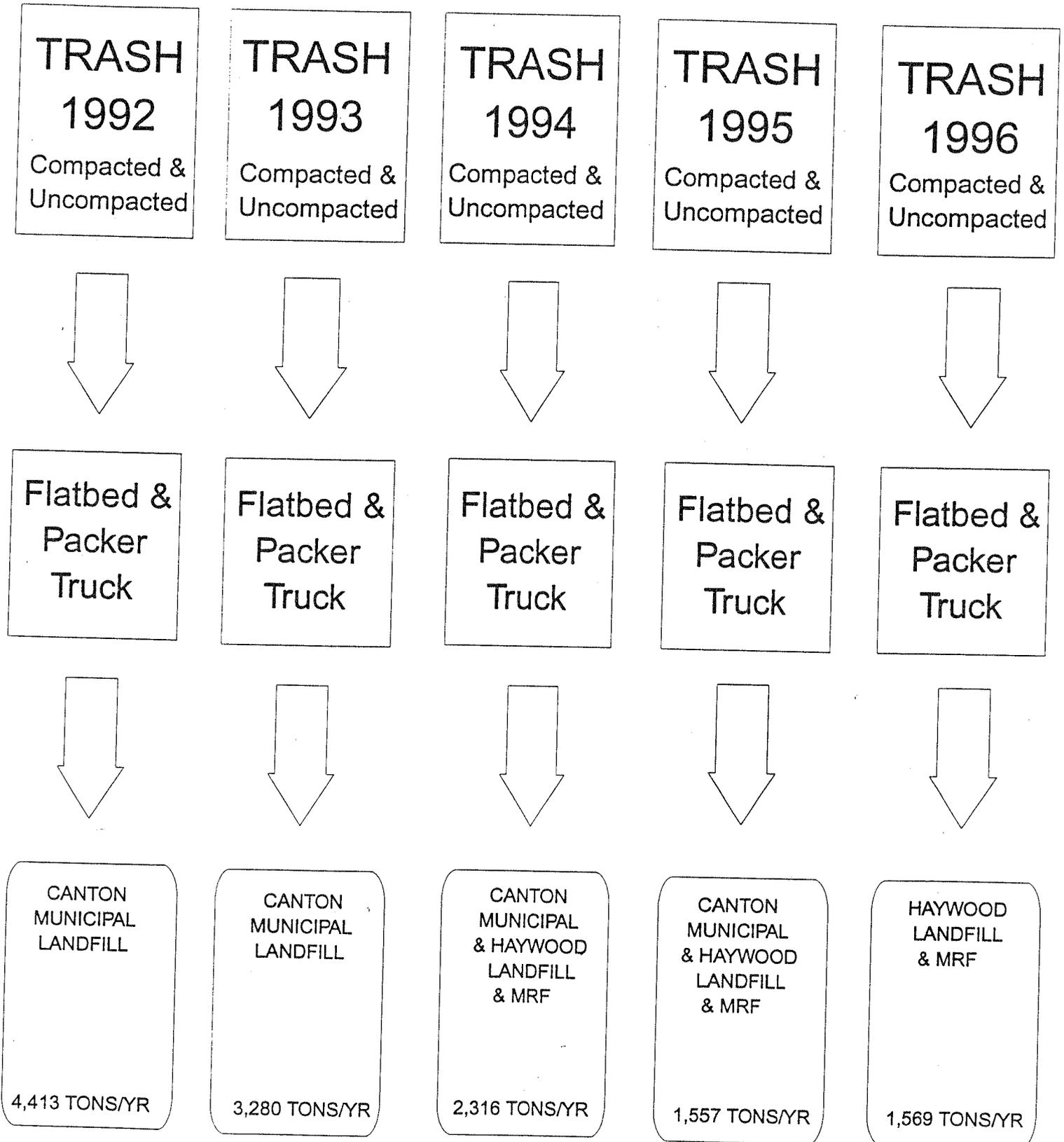
Wood = Pallets + Clean Wood

Red, Orange, Yellow, and White represent the color of each bin by material type.

Schulhofers, Coburn, and Jones Cove are recycling destinations.

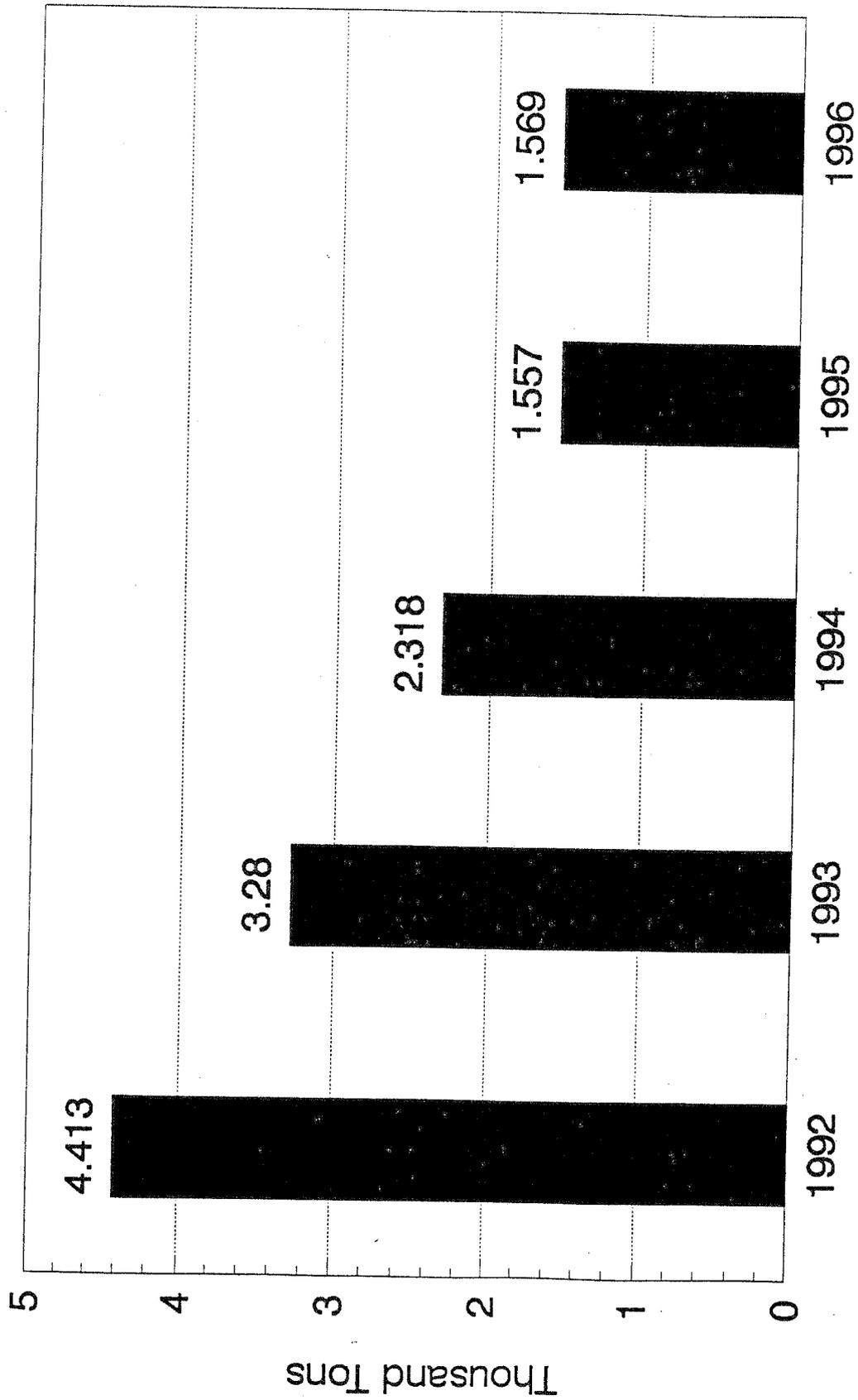
IN-MILL SOLID WASTE PROGRAM - TRASH

1992 - 1996

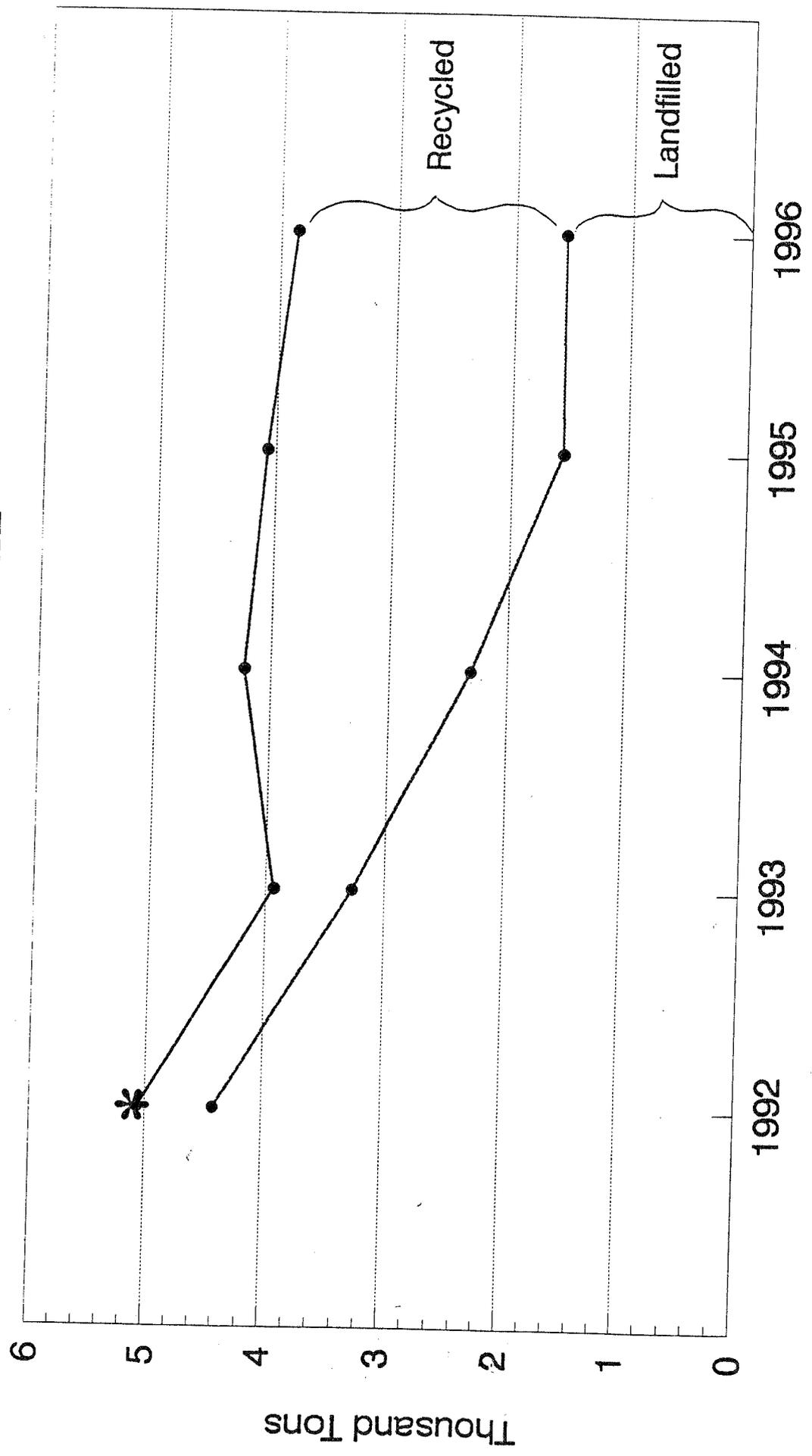


CANTON MILL NON-PROCESS SOLID WASTE COUNTY LANDFILL DISPOSAL

1992 - 1996

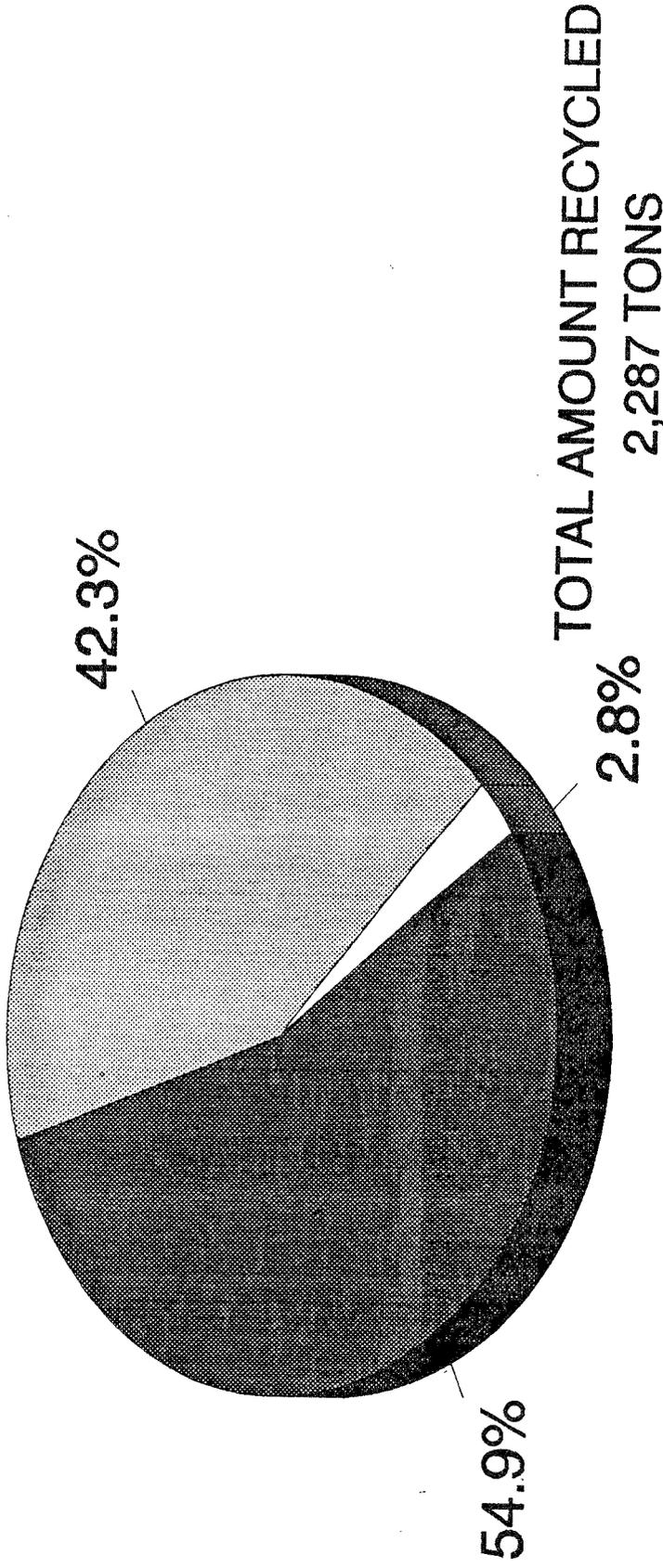


1992 - 1996 TOTAL SOLID WASTE LANDFILLED & RECYCLED CANTON MILL



* = Estimated ● = Actual

1996 TOTAL MATERIAL RECYCLED CANTON MILL



METAL	1,256 TONS/YR
CARDBOARD	63 TONS/YR
SCRAP PAPER	968 TONS/YR

1996 ACTUAL



July 14, 1997

Mr. James Patterson
Waste Management Specialist
North Carolina Department of Environment, Health,
and Natural Resources
Division of Solid Waste
59 Woodfin Place
Asheville, North Carolina 28802

Dear Mr. Patterson:

Per your telephone request of this date, attached is a copy of the Champion International Corporation, Canton Mill, 10-Year Solid Waste Management Plan, as required by House Bill 859, Solid Waste Amendments, Section 130A-309.09D(c).

Should you have questions regarding the document, please call me at 704-646-2028.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jim Giaouque', written over the printed name.

Jim Giaouque

Attachment

Copy: Derric Brown (letter only)
John Bengel (letter only)
Bob Williams (letter only)

file:plan97_1.doc



To:
10-Year Solid Waste
Management Plan

From:
Jim Giauque

Date:
July 1, 1997

Subject:
10-Year Solid Waste
Management Plan

Enclosed is the above plan for the Champion International Corporation Canton Mill in compliance with House Bill 859, Solid Waste Amendments, as detailed in Section 130A-309.09D(c). As determined by the above regulations, a copy of the plan shall be available upon request by the North Carolina Department of Environment, Health and Natural Resources, Solid Waste Section, by July 1, 1997, and shall be updated every three years. Additionally, a report regarding the plan's implementation shall be filed by August 1, 1998, and annually thereafter.

Questions regarding this plan should be directed to the Canton Mill, Environmental Occupational Health and Natural Resources Department (EOHS), Solid and Hazardous Waste Coordinator (704-646-2028), or the EOHS Department Supervisor (704-646-2318).


Jim Giauque
EOHS Solid & Hazardous
Waste Coordinator

Enclosures
file:plan1997.doc

Copy: John Bengel
Derric Brown.