



Coors Brewing Company  
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July 15, 1994

Ms. Mary Beth Powell  
Manager - Solid Waste Reduction Pro  
State of North Carolina  
Office of Waste Reduction  
3825 Barrett Drive  
Raleigh, NC 27609

Dear Mary Beth:

Enclosed is an article that tells the interesting story of the development of the aluminum beverage can and the growth of recycling. The story is one of vision, innovation, and dogged persistence in the face of enormous challenges. It also is a tremendous example of the power of private enterprise to create opportunity, to advance technology and to contribute to society's needs, all done voluntarily without governmental mandates.

Certainly times have changed since 1959, but the birth of aluminum beverage cans illustrates important lessons as we address the environmental challenges today. Many environmentalists are concerned about packaging waste. One part of the answer will be found in technology; but another critical piece lies with consumers, how packaging preference is influenced by image, convenience and more. Comparatively speaking, technology development is a precise process; informing, motivating and persuading consumers is much more complex and dynamic. All consumer products companies are rightly concerned with consumer response to change. One answer must be rooted in consumer education, founded on sound science rather than the agendas of special interest groups.

Coors has continued to reduce, reuse and recycle aggressively in many areas of our business. Last month, we were recognized by the Coalition of Northeastern Governors (CONEG) for accepting and meeting the CONEG challenge. We are the only brewer to do so. And we are proud to have been named Colorado Recycler of the Year at the state's Recycling Expo and Summit on May 5.

Thanks to everyone who returned comments on our last Communique. We welcome your input and questions. A comment card is provided in every mailing; if you would like to speak directly with someone, please call Ms. Cary Baird, 303/277-7010.

Warm regards,

Peter H. Coors  
Vice Chairman  
Chief Executive Officer

Enclosure



Recycled Paper

# **THE COORS RECYCLING STORY:**

**Making Business Work for the Environment**

**Coors Brewing Company**

**July 1994**

# THE COORS RECYCLING STORY

## INTRODUCTION

In 1959, when Coors Brewing Company decided to market its product in aluminum cans, the beer industry saw it as an intriguing novelty. But when company President Bill Coors announced the intention to buy back and recycle those cans, the industry was skeptical and bemused. Disposability, after all, was one of the features that led consumers to prefer canned to bottled beer in the first place.

Clearly, times have changed. Today, the need to recycle used materials, shrink the flow of waste into our bulging landfills and conserve natural resources has achieved the status of a self-evident truth -- the basis for one of the most significant social movements of our era. And Bill Coors' quirky idea can now be seen as the inception of Coors' pioneering role and expanding involvement in efforts to make recycling part and parcel of the way America does business. This paper documents Coors' long experience with recycling and its importance to the firm's development from a small, regional brewery to the third largest beer-maker in the nation.

From the beginning, economic and environmental concerns have worked together to drive Coors' interest in recycling. We think this is an important part of the story. Too often, economic and environmental values are treated as inherently antagonistic. We talk of trade-offs between the environment and the economy as if improving our material well-being requires violating nature and preserving nature requires a sacrifice in material well-being.

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Coors believes the dichotomy between the economy and the environment is false -- and for a simple reason. Nature is the ultimate source of all our material wealth. Logically, care in sustaining this ultimate value source should result in positive, not negative, economic impacts.

Coors' experience in pioneering aluminum container recycling has borne this logic out. Recycling not only avoids the despoiling of land when it becomes a burial ground for waste, it enables us to leave resources in the ground that would otherwise be subtracted from nature's bounty. Once the recycling market was adequately developed, aluminum recycling also meant a net gain in economic efficiency and profit.

The convergence of environmental and economic values has been reaffirmed in a wide array of Coors' operations -- from using waste heat for energy to using spent grain for animal feed. They are the result of applying a simple maxim: Look at every form of waste and pollution as a

## COORS RECYCLING STORY

loss in potential economic benefits. The Coors recycling story is about how our company has profited from treating waste as something of value.

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*Look at every form of waste and pollution as a loss in potential economic benefits. The Coors recycling story is about how our company profited from treating "waste" as something of value.*

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While Coors feels justifiably proud of its record as a recycling innovator, we have attempted here not to indulge in self-congratulatory posturing. Recycling is a serious proposition -- economically, socially, and environmentally. Its importance to the integrity of the environment, the sustainability of our nation's prosperity, and, hence, to future generations is undeniable.

In presenting our role, past and present, in the evolving recycling movement, our aim is to share our story for whatever light it may shed on the benefits our society stands to reap -- and challenges it still must face -- in its pursuit of recycling's promise.

## A CLOSED LOOP

In January 1992, Golden Aluminum, then a wholly owned Coors' subsidiary (now a company of ACX Technologies), began full-scale commercial production of aluminum sheet stock from used beverage containers (UBC) at its new, state-of-the-art rolling mill in San Antonio, Texas.

The \$160 million plant is the first in the world to produce recycled aluminum body stock -- sheet for fabricating beverage container tubes -- using continuous casting technology. The plant has targeted a UBC content of 90 percent for aluminum sheet. That target is not an idle projection. Golden Aluminum's rolling mill at Ft. Lupton, Colorado, has been producing aluminum alloy for can tops with 90-95 percent recycled content since it opened in 1984.

Through Bill Coors' vision, Coors became the first company to launch aluminum containers into the marketplace and, eventually, to "close the loop" by recycling them. From the beginning, the two innovations -- the aluminum beverage container and container recycling -- operated in tandem. The story of their evolution from a pilot program to improve beer packaging to the foundation of the nation's most vital recycling industry is one of long-range calculation, dogged persistence and good fortune.

## PIONEERING THE ALUMINUM CONTAINER

In a move that eventually revolutionized the beverage container industry, Coors Brewing Company began developing the aluminum can for packaging its draft beer in the 1950s. Company President Bill Coors became interested in aluminum as a superior packaging material for a number of reasons: aluminum is light and cheaper to transport; beer also chills more quickly in aluminum, thereby reducing energy costs; and the brewery's experience with aluminum kegs demonstrated the metal's superior potential for protecting, instead of altering its contents. The prevailing tin-lined steel can affected the quality and flavor of Coors beer, reducing the beer's potential shelf-life.

## COORS RECYCLING STORY

The idea of producing an all-aluminum can, however, ran against the grain of the container industry at the time. Therefore, Coors took the unique step of becoming the first brewery to manufacture its own cans.

On January 22, 1959, Colorado consumers encountered something new on their grocery store shelves: an aluminum can containing seven ounces of Coors beer. The aluminum can prototype had taken Coors five years and \$10 million to develop. For this innovative effort, the industry journal *Modern Metals* named Bill Coors "Man of the Year" in the light metals industry.

Met by favorable consumer response, Coors expanded its use of the aluminum can. Despite concerted efforts at improvement, the production technology Coors had engineered -- using a method called impact extrusion -- was uneconomical. The firm continued producing cans, but at a loss of \$100,000 a month.

Convinced the aluminum can was the wave of the future, Coors went in search of a better technology. It found the technology it was seeking at Kaiser Aluminum Company which, in the 1960s, was experimenting with a method called D&I -- draw and iron. Developing the D&I method into its own proprietary technology, Coors began building in 1965 what would become the world's largest beverage container plant and began producing 11- and then 12-ounce size beer cans that were significantly downweighted from the original seven-ounce size can. The seven-ounce can weighed .94 ounces, equating to 17 cans per pound of aluminum. By contrast, today's 12-ounce can, at .55 ounces, or 29 cans per pound, is 42 percent lighter than the original Coors' seven-ouncer.

The company never looked back. The plant soon achieved an annual output of two billion cans. In 1971, Coors abandoned the steel can and adopted the aluminum can exclusively.

**The Recycling Corollary.** To Bill Coors, the idea of buying back and recycling aluminum cans was a natural corollary to making them. Key to this idea were the austere business principles deeply ingrained in the firm's corporate culture by company founder Adolph Coors -- the principles of frugality and self-sufficiency. If Coors envisioned the aluminum container to be the packaging of the future, it needed also to have a secure source of material for their production. What better source than the cans you put out to market?

Other considerations argued for recycling as well.

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*Recycling was deeply ingrained in the firm's corporate culture by the principles of frugality and self-sufficiency.*

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Bill Coors was impressed by aluminum recycling's potential for energy conservation. Transforming bauxite ore into aluminum stock consumes vast quantities of energy. By comparison, producing aluminum stock using reclaimed aluminum realizes an energy savings of 95 percent. The energy efficiency of recycling old aluminum cans into new ones looked economically promising. If that much energy could be saved, then there must be a cost savings as well -- if the right recycling system could be developed.

Recycling would also keep littered cans off of the American landscape, an eyesore and issue that was of mounting public concern in the late 1950s.

## COORS RECYCLING STORY

**Creating a Recycling Market from Scratch.** Coors' interest in recycling, however, confronted serious obstacles. In 1959, container recycling was virtually unheard-of. Initially, as the only producer of aluminum containers, Coors was virtually the only market for used ones -- and no infrastructure was in place for reclaiming them. While Coors had developed the technology to make aluminum cans, it was dependent on aluminum manufacturers for sheet. Closing the recycling loop required getting the aluminum industry into the loop to process reclaimed aluminum.

To solve the supply problem, in 1959 Coors piloted the world's first aluminum can buy-back program that offered Colorado consumers a penny for every container they returned. At the time, consultants told Coors to expect a maximum return rate of two percent. In fact, the rate reached 10 percent; and the company was overwhelmed by the volume of returns. Between 1959 and 1965, Coors collected 60 million cans.

However, the cans were largely stockpiled because Coors was as yet unable to recycle a single one of these cans into making new ones. The technology was not in place to feed reclaimed aluminum back into the production process.

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*Coors piloted a buy-back program that offered consumers a penny for every container they returned.*

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**The UBCs of Recycling.** Coors stopped buying back its aluminum beer containers between 1965 and 1970 in order to concentrate on closing a crucial gap in the recycling market. Collection by itself is not recycling. Unless reclaimed materials are actually reused -- and old cans transformed into new ones -- recycling has not actually taken place.

The critical missing link in the recycling market was the absence of an aluminum industry ready to process UBCs into recycled aluminum stock. Still wed to their origins as miners and processors of bauxite, the aluminum companies were reluctant to pursue recycling. The concept of recycling was perceived as exotic. UBCs needed first to be cleaned and purged of beverage residues, coatings and labeling inks. The industry did not have the equipment for these processes. Moreover, with Coors virtually alone as a source of demand for the requisite aluminum alloy, the industry had little reason to purchase or develop the machinery. Coors' push for recycling appeared to be at an impasse.

The key to breaking the impasse was Coors' growing popularity as a beer-maker and the profitable mass production capabilities of its new can plant. Coors' beer shipments had leapt from 922,000 barrels in 1954 to more than 3.4 million barrels in 1964. And with D&I knocking out aluminum cans at 1,500 a minute to package its beer, between 1965 and 1970, Coors was able to adopt a strategy to pull the aluminum industry into the recycling loop.

Coors had the option of becoming a major force in the can-making industry -- using its D&I technology, not just for its own can-making needs, but for the open market. It chose, however, to stick to its core business -- brewing beer. Coors decided to sell its D&I technology to manufacturers at large, even helping competitors like Schlitz and Anheuser-Busch set up their own aluminum can-making facilities. The policy was based on a sober business calculation. Coors' central interest in manufacturing cans was to have a reliable source of supply at reasonable prices. Enlarging the aluminum container market, reasoned Coors' executives, would enhance supplies and lower prices for both stock and finished cans.

## COORS RECYCLING STORY

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*Coors used its leverage within the market to persuade its aluminum suppliers to begin recycling.*

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The result was to spark a massive move toward the commercial use of the all-aluminum beverage container. By 1969, can makers were producing 3.2 billion aluminum containers for beer and soft drinks. In 1971, the number more than doubled to 6.6 billion. Aluminum was beginning to make serious inroads into a domain where the steel can once reigned supreme.

Coors then made another strategic move. It used its leverage within that market to bring its aluminum suppliers into the recycling loop: Coors would buy aluminum stock from them equivalent to the amount of UBC they purchased from Coors. The first agreements were signed in the mid-1960s.

**Strengthening the Collection Infrastructure.** Coors' success with the aluminum industry was a critical breakthrough in the development of the recycling market. Coors could now move to develop that market on another front: the collection infrastructure.

In 1970, Coors resumed buy-back. It established the nation's first distributor-based collection system. The ambitious and aggressive program was called "Cash for Cans" and operated throughout Coors' 11-state marketing area.

Under "Cash for Cans," Coors' 116 distributors set up recycling reclamation centers that paid consumers for returned cans. To support the system, Coors paid their distributors for the cans plus a handling fee, then bailed the containers and sold them to the company's aluminum stock suppliers.

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In local schools, Coors promoted recycling with activities highlighting recycling's resource conservation and aesthetic benefits. Can collection became popular with non-profit organizations doing fundraising.

The program was a huge success. Where Coors' original buy-back program achieved a 10 percent return rate, "Cash for Cans" realized a return rate of 25 percent in the first year and 46 percent in the second.

In addition, in 1973 Coors helped found Tri-Cycle -- a network of street-level bulk buy-back centers in the Boulder/Denver area which collects glass, newspapers and plastic, as well as aluminum. Originally, part owned by soft-drink makers and retailers, Tri-Cycle pioneered supermarket recycling by setting up hundreds of in-store collection centers.

By the end of 1989, "Cash for Cans" realized a return rate of 95 percent; and, cumulatively, Coors had paid consumers \$350 million for the 1.6 billion pounds of aluminum cans they returned.

Coors also held the first patents for the reverse vending machine. In 1982, it developed the Aluminum CanBank, a fully automated reverse vending machine that receives, weighs and then pays out cash for empty cans deposited into it.

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In 1980, Coors formed Golden Recycle Company, a wholly owned subsidiary, in order to formalize its recycling operations. The stage was set for the next step in the quest for fully-integrated recycling self-sufficiency. In 1984, Golden Recycle opened its Ft. Lupton continuous casting mill; and Coors became the first brewery to produce recycled aluminum sheet for can making. In 1987, Golden Recycle changed its name to Golden Aluminum and acquired Lauener Engineering, a Swiss company that was pivotal in developing continuous casting technology utilizing the Lauener Block Caster. The Lauener Block Caster is the heart of both Ft. Lupton and San Antonio rolling processes. The acquisition of Lauener clearly emphasized Coors' commitment to enhancing the technology for producing quality container sheet from recycled materials.

**A Decisive Stage in Self-Sufficiency.** The quest for self-sufficiency drove Coors' initial efforts to recycle its aluminum cans in 1959. This quest entered a decisive, new stage in 1984 with the opening of the Ft. Lupton continuous casting aluminum rolling mill.

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*Coors marked another first in the history of recycling: It became the first brewery to produce recycled aluminum sheet and transform it into new containers.*

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For some years, Coors had put aside thoughts of producing its own aluminum stock. In any case, aluminum producers, led by Alcoa in 1979, now offered holders of UBCs an arrangement for processing them at a substantial savings. Rather than sell its UBCs to the manufacturer, Coors remained owner of the material and simply paid the manufacturer a "tolling fee" for transforming it into new sheet.

The arrangement worked well for a few years, but eventually its attractiveness waned as manufacturers squeezed the savings margin. Building a sheet-making plant again became an attractive and economically viable option. In mid-1982, Coors gave the project the go-ahead.

With the opening of Ft. Lupton in 1984, Coors entered the business of casting its own recycled aluminum stock. It was another Coors' first in the history of recycling. Coors had truly closed the recycling loop. It was not only producing, marketing and then collecting post-filled aluminum containers for reuse, it was also converting UBCs into new aluminum sheet. Coors became the first company to become a total recycler.

Being a total recycler did not relieve Coors of its need for external suppliers for manufacturing containers. Ft. Lupton's caster was designed to make aluminum sheet for can lids and tabs. It is not wide enough to produce stock for container bodies.

With the advent of Golden Aluminum's San Antonio plant and its newly designed and wider caster, Coors is able to produce cans with the industry's highest average recycled content -- about 70 percent -- with some cans exceeding 90 percent. The 70 percent average reflects the fact that Coors purchases only a portion of its can body stock from Golden Aluminum and must rely on other vendors, who have lower recycled content levels, for the remainder of its can body stock.

Coors' status as a total recycler boiled down to two factors: First, Coors had internalized and integrated all aspects of the chain of activities that make up recycling; and, second, Coors circulated aluminum through this recycling chain in quantities at least equivalent to the aluminum it used for its core business of brewing and marketing beer. In fact, in 1990, Coors became the first brewer to recycle more cans than it produced, when

## COORS RECYCLING STORY

its recycling rate hit 107 percent. In essence, Coors had fulfilled the economic and environmental commitment to aluminum recycling forged by Bill Coors in 1959.

The road from 1959 to the present has been long and filled with obstacles; but, today, aluminum recycling is not only the nation's greatest recycling success story, but has become a major profit center as well. This is clearly evidenced by that fact that by 1993, Coors had spun off Golden Aluminum Company into ACX Technologies, where it is part of a new Fortune 500 corporation.

While recycling is simple in concept, it is complicated in execution. If there is any moral to our tale, it is the following: The key to making recycling work is to create a market for the material. Coors' aluminum experience provides the ultimate example of this axiom.

## RECYCLING AS A CORE BUSINESS ETHIC

The aluminum container is central to the Coors recycling story. But it is only one aspect of a business ethic that finds expression in a wide variety of company activities. They include:

**Glass Recycling.** The glass bottle was the original material for marketing beer to the consumer. Before opening his own glass plant in 1887, company founder Adolph Coors tried getting consumers to return Coors' bottles for reuse to meet his growing supply needs. Ironically, he was frustrated by the high value consumers placed on them. Colorado families often kept their empty Coors' bottles for other household uses.

Today, Coors packages about 27 percent of its beer in bottles. At the Coors' bottle manufacturing plant in Wheat Ridge, Colorado, the use of cullet -- crushed glass from reclaimed bottles -- has risen from 15 percent of total feed three years ago to approximately 35 percent today. Thanks to a \$5 million expansion and state-of-the-art upgrade completed in May 1994, the glass plant is targeted to achieve 50 percent recycled content by 1995.

The energy savings derived from using cullet to make glass are less impressive than they are for aluminum. Every 10 percent increase in cullet content represents an energy savings of only one to two percent when compared to the energy costs of melting virgin raw materials. However, cullet realizes additional environmental and resource benefits in air quality, landfill availability and resource conservation. Every increase of cullet in processing glass decreases proportionally emissions of nitrous oxides and sulphur -- both contributors to acid rain -- as well as particulates that dirty the sky. Cullet use also reduces the flow of glass into landfills and the mining of raw materials.

Downweighting -- that is, making lighter bottles using less material and energy -- is another approach Coors is taking with its glass. Because beer spoils if over-exposed to light, the main obstacle to downweighting is producing glass at a color level sufficient to protect the beer without increasing weight.

**Making Use of Brewery "Waste."** Coors reuses a number of wastes from the brewing of beer to make commercial products.

One is animal feed made from brewing by-products, primarily spent grains and hops, which are filtered out of the beer prior to fermentation. Since the mid-1950s, Coors has been using these spent grains to produce an

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animal feed -- mainly cattle feed -- in the form of dried pellets. The pellets have a mid-level protein value of 23 percent. Coors produces more than 65,000 tons of these Coors Malt Pellets a year, realizing a profit from their sale as well as a savings from not having to pay to transport and bury the spent grains in landfills.

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The yeast reproduction process yields excess yeast which Coors dries, packages in 50-pound bags and sells to the pet food industry in amounts between nine and 13 million pounds a year. Brewer's yeast is high in protein and Vitamin B.

Finally, more than a decade ago, Coors found a use for waste beer as an energy source. Coors sells the waste beer to outside contractors who distill it into approximately 200-proof ethanol. In addition, Coors produces 190-proof alcohol at its own still to provide its power plants with supplemental fuel.

**Reusing Heat.** As with other consumer food products, beer-making is energy intensive. Since the mid-1930s, Coors Brewing Company has persistently striven to maximize steam efficiency by adopting a co-generation approach. For example, 800 pounds of steam are processed in company boilers and utilized for electrical generation. Half of that is extracted and used as an auxiliary energy source for refrigeration, air compression and turbine drives. Steam is also used as a return energy source to maximize boiler efficiency. Overall, the system saves enough energy to provide 10,000-12,000 average households with all their energy needs for one year.

**Plastic Recycling.** Each year, Colorado businesses use several million pounds of stretch wrap, a thin polyethylene film wrapped around a load of products to hold and protect it during shipping. Despite the tremendous volume, no individual company generates enough waste wrap to cost-effectively recycle it, so most is sent to landfills.

In June 1993, Coors Brewing Company, Pepsi Cola Company, Coca-Cola Bottling Company of Denver, Safeway Beverage Plant, Columbine Beverage Company Inc., Full Service Beverage Company of Colorado, and Ball Metal Beverage Container Group formed the Workplace Recycling Alliance for Plastic (WRAP) and began collecting waste wrap.

By pooling their waste wrap, the group was able to contract with a local trucking broker and ship the plastic to Exchange Plastics Corporation in Akron, Ohio, where it is recycled. The recycled plastic is used to produce a variety of products, including garden edging, rain ponchos, tarpaulins, plant trays, heavy equipment pads and parking lot stops. In 1993, WRAP members collected and recycled more than 400,000 pounds of waste film -- just enough to remain cost-effective.

By June 1994, the group had more than doubled from 7- to 18-member companies; a partnership had been formed with Goodwill Industries which will prepare the film for shipment to Mobil Chemical Company. After purchasing the wrap from Goodwill, Mobil will recycle the plastic into waste bags, trash receptacles, composite wood polymer products and stretch film. The sale of the collected film will enable Goodwill to provide job training and placement for about 17 disabled or disadvantaged people. Goodwill Industries and the WRAP

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members hope to use the program as a model for other groups to band together to recycle materials, reduce the amount and cost of materials sent to landfills and provide an income stream for non-profits like Goodwill.

**Slip Sheets.** Rather than using traditional wooden pallets to stack, separate and cushion beer during shipping, Coors has manufactured and recycled its own recyclable slip sheets for the past 20 years. The slip sheets, made of polypropylene, are lighter, smaller, more durable and less expensive to make than wooden pallets. Slip sheets also dramatically reduce transportation energy costs.

Coors makes approximately 2.6 million of the 5-foot-square, 1/8-inch-thick slip sheets every year. Distributors collect, stack and bundle the slip sheets and periodically ship them back to the brewery, where they are ground into pellets.

The recycled pellets are combined with a small amount of virgin polypropylene to create new slip sheets. The sheets are typically composed of at least 93 percent recycled material.

**Paper Packaging.** Some 96 percent of all corrugated cardboard packaging leaving the Coors' facility in Golden consists of 100 percent post-consumer recycled fiber. The shift to 100 percent post-consumer waste (collected mostly from supermarkets and shopping malls) saves 1,695 acres of virgin timber each year. The electricity saved through lower energy costs of producing the recycled material would supply 169,476 homes for one month. Finally, had the cardboard ended up in a landfill, it would fill a hole the size of a football field 71 feet deep.

A traditional stumbling block for many manufacturers, particularly those whose products produce or encounter moisture, has been the need for *wet-strength* packaging. Coors faces this problem with paperboard carriers, or "sleeves," in which 6, 12 and 24 cans are packaged. Coors has eliminated wet-strength chemicals from these packages and relies on thin polyethylene film for moisture protection. This also results in a package that is easily recycled.

Finally, while recycling office paper is a relatively common practice in today's corporate environment -- and Coors is no exception, with 10 to 15 tons of white paper collected each month for recycling -- the company also recycles all corrugated materials. As a result, not only office paper, but all cardboard and paperboard shipped to the company are now collected for recycling.

**Wood Pallets.** Although Coors long ago replaced wooden pallets with polypropylene slip sheets to ship its beer, pallets are still used in receiving and moving materials shipped to Coors from its many vendors. Rather than send the approximately 30,000 cubic yards of wood accumulated annually to landfills, Coors uses several innovative programs to compost and reuse the pallets.

Pallets not sold to outside vendors are placed on the *company woodpile* which is free to employees. Some of the pallets are ground into wood chips for employee use as mulch in their gardens and for landscaping.

In 1991, the company began combining some of the wood chips with by-products from the brewing process to produce a high-grade compost. The compost is sold to employees in 50-pound bags. Proceeds from the compost sales are used to fund new, employee-initiated recycling programs. The compost is also sold or donated to local community groups, golf courses and garden projects.

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Coors saves more than \$100,000 annually in transportation and tipping fees by not disposing wooden pallets in landfills. In fact, the company has shipped no wood to landfills since 1991.

**Motor Oil and Tires.** Coors began its oil recycling program in the early 1970s and now recycles virtually 100 percent of the motor oil it uses in its vehicles, forklifts and machines. Approximately 275,000 gallons of used oil a year are sold to a recycling company for resale and reuse. Used tires from company trucks and cars -- approximately 1,000 a year -- are sold to a retreader rather than sent to landfills.

**Salvage and Scrap.** Rather than send thousands of tons of valuable materials to landfills, Coors collects its scrap material, obsolete and replaced equipment, and sells it for a profit. Since 1968, Coors has operated a salvage yard which now sells nearly \$1 million a year in used and surplus materials and equipment generated by the company. The items include furniture, office machines, laboratory equipment and industrial machines.

The company's machine and fabrication shops and maintenance and construction departments recycle approximately 3,000 tons of metal each year. Collection bins are located throughout the brewery. The metals are sold to local recycling firms.

**Office Material.** Thirty-eight pickup locations have been established throughout the company for the approximately 10 tons of white office paper a month the company recycles. A program to recycle copier toner cartridges has also been established.

## CONCLUDING REFLECTIONS

At Coors, recycling has become a significant profit center because we have approached it, not merely as a public service, but also as a business -- namely, the business of reclaiming potentially valuable materials from the waste stream. In the case of recycling the aluminum can, the key to realizing its economic potential was the development of adequate demand. Unless market demand supports adequate prices for a material, its value as a resource will be lost.

Our own experience bears this out. When we started taking back our aluminum containers in 1959, we knew we were collecting a valuable resource, but we had no means to realize that value because there were no end-users for it. It was years before we managed to create a market for those containers. But once we did, we were able to put aluminum recycling on a firm business footing.

Today, businesses and communities across the country are facing the same dilemma Coors faced then. Many are spending millions to collect paper and plastics and then find they have nowhere to sell them. Worse, they have neither the time nor the landfill space to store the materials they collect.

Understandably, market demand has become the focus for policy makers, environmentalists, businesses and economists concerned with recycling. For market demand is the critical "X factor" in the recycling equation. As a company firmly committed to the business of recycling, Coors is keenly interested in helping to meet the complex challenges before us.

## COORS RECYCLING STORY

### COORS ALUMINUM CAN RECYCLING CHRONOLOGY

1959: Coors manufactures and markets the first aluminum beverage can. The cans are produced using impact extrusion technology. For eventual recycling of cans, Coors offers to buy back cans from consumers for one cent each.

1959-1965: Coors buys back 60 million cans, most of which are stockpiled due to the absence of a market in which to recycle them.

1965-1970: Coors stops buying back cans due to market conditions -- there is no market, aluminum manufacturers do not want used beverage containers.

1965: Coors perfects draw and iron (D&I) technology, which further facilitates aluminum can manufacturing and opens up market doors. Coors will feature D&I technology in its newly planned aluminum can plant. When operational in 1967, it becomes the world's largest aluminum beverage container plant. Coors offers its can technology to other beer companies in order to further promote aluminum can use and expand the aluminum market.

Mid-1960s: Coors contracts to buy aluminum from major aluminum companies in amounts equal to UBCs that Coors ships them -- recycling and recycling markets become a reality.

1969: Aluminum can production in the U.S. hits 3.2 billion.

1970: Due to market expansion and recycling efforts by aluminum manufacturers, Coors again begins to buy-back aluminum cans. Coors initiates "Cash for Cans," a distributor buy-back program. In its first year, "Cash for Cans" achieves a 25 percent return rate, which soars to 46 percent in the second year.

1971: Aluminum can production in the U.S. soars to 6.6 billion cans. Coors no longer uses any steel cans.

1973: Coors co-founds Tri-Cycle, a network of bulk buy-back centers and supermarket recycling centers.

1980: Coors creates Golden Recycle, a wholly owned subsidiary, to recycle aluminum beverage containers.

1982: Golden Recycle markets the Aluminum CanBank, an automated reverse vending machine that pays cash for deposited cans.

1984: Golden Recycle opens its Ft. Lupton, Colorado, plant, the world's first continuous casting aluminum production facility. The plant produces aluminum sheet for the manufacture of can ends and tabs with up to 95 percent UBC content. For the first time, Coors now has the capability to buy used cans, melt them down and remake them into new can parts. The Coors' recycling loop is closing.

1987: Golden Recycle is renamed Golden Aluminum Company.

1989: "Cash for Cans" by now has paid consumers \$350 million for 1.6 billion pounds of cans.

## **COORS RECYCLING STORY**

1990: For the year, Coors collects 4.1 billion cans, slightly more than the nearly 4 billion the company produces, creating a recycling rate of 107 percent.

1991: Golden Aluminum opens for testing its new San Antonio, Texas, plant, which will produce can body stock with a minimum 75 percent UBC content. That figure will later be raised to 90 percent when operations reach full efficiency. Coors has now truly closed the recycling loop, and within its own operations can collect used aluminum cans and transform them into new Coors' cans.

1992: Between its Ft. Lupton, San Antonio and Golden facilities, Coors has the capacity to produce 6.5 billion recyclable aluminum cans annually.

1993: Coors spins off Golden Aluminum and several other companies into a new Fortune 500 corporation called ACX Technologies. Prior to the spinoff, Coors had historically collected nearly 2 billion pounds of cans and paid consumers nearly \$400 million.