

Zero Waste Businesses

Companies from A-Z highlighted below provided tremendous leadership in approaching Zero Waste. These companies have reported that they have diverted over 90% of its wastes from landfill and incineration.¹ GRRN will be documenting more businesses that are leading the way to Zero Waste at: www.grrn.org/zerowaste/articles/companies_zw.html. If you know of any other Zero Waste Businesses, please email those to Gary Liss at 916-652-7850 or gary@garyliss.com, GRRN Zero Waste Business Project Leader.²

Amdahl Corporation, Santa Clara, CA - Winner of 1998 National Recycling Coalition Outstanding Corporate Leadership Award, 90% Waste Diversion since 1990, Reuse and Recycle: Loose Fill, Polystyrene, Polyurethane Foam, Polyethylene Foam, Polypropylene, Instapak Packaging Foam, #1 and 2 Plastic Containers, Manufacturing Plastic Scrap, Office Paper, Cardboard, Wood, Cans, Bottles, Metals, Wire, Circuit Boards, Building and Demolition Materials, Furniture, CRTs, Fluorescent Tubes, Tooling, Copier and Laser Printer Tone Cartridges, Reusable Product Packaging, Used Products, Donate Perishable Food to Second Harvest, Bulk Pump Dispensers for Condiments, Double Side Copies, Email to Reduce Paper, Electronics Bulletin Board and Web pages for Online Access to Jobs, Forms, Benefits and Other Company Info.

Anheuser-Busch, Fairfield, CA – The Fairfield plant opened in 1976, employs 485 people and brews over four million barrels of beer each year. It is one of the first breweries in the United States to be ISO 14001 certified by the International Organization of Standardization. The facility sent over 94,000 tons of spent grain to cattle feed alone in 2001. An additional 1,500 tons of aluminum, glass, cardboard, scrap metals, office paper, computer paper, phone books, plastic and glass soda bottles, aluminum cans, ink, oil and toner cartridges were recycled. The facility also diverted some 220 tons of beechwood chips to composting and recovered almost 970 tons of alcohol from fermentation bottoms, waste yeast and waste beer for use in fuel blending. As a result, the facility achieved a 98% diversion rate from landfill and incineration in 2001. Diatomaceous Earth, a filtering agent, makes up 85% of the plant's landfilled material. However, Robert Wachter, Resident Environmental Health and Safety Manager, believes he will have an agricultural use for this material by the end of 2002, which should bring the plant to a 99% plus diversion rate.

The facility has received numerous awards including recognition from the Governor's Economic and Environmental Leadership Award and the 2001 "WRAP of the Year" award from the California Integrated Waste Management Board.

¹ All information was provided by the companies themselves without independent verification, or is taken from a website that is indicated.

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For more information, contact: Robert Wachter, P.O. Box AB, Fairfield, CA 94533, bob.wachter@anheuser-busch.com.

Apple Computer, Elk Grove, CA – According to the 2000 California Integrated Waste Management Board Awards news release, the Elk Grove computer manufacturing plant recycled 91%, or nearly 6,000 tons of waste, in fiscal year 1999. The plant achieved this result by forming a core team of employee volunteers to promote recycling and discover waste reduction solutions. Among the materials it has been able to capture are paper, glass, cardboard, wood pallets and polystyrene. The Elk Grove facility is a six-time Waste Reduction Awards Program (WRAP) award winner and continues to search for recycling and waste reduction opportunities to increase its recycling rate.

For more information, contact: Tamara Weil-Hearon, Public Relations, tamarawh@apple.com.

Battery Council International (BCI) reported in the June 19, 2000 edition of Waste News that the average annual recycling rate for the lead in lead-acid batteries is now 94.6%. The lead-acid battery industry has been recycling its products for more than 70 years, and today operates an infrastructure of retailers and service providers that collect spent batteries from customers. The same trucks that deliver new batteries pick up the spent batteries for delivery to secondary lead smelters. Consumer, commercial and industrial users turn in spent batteries for recycling when they buy new batteries. The lead and plastic from spent batteries are used to produce new batteries. The recovered sulfuric acid electrolyte also can be used as new product, or neutralized. BCI is a nonprofit association that conducts education campaigns. BCI has drafted model recycling laws that have been adopted by 37 states, which prohibit disposal and require retail collection of spent batteries.

For more information, contact: Ronald Pogue, BCI, 401 North Michigan Avenue, Chicago, Illinois 60611, 312-644-6610, Fax: 312/321-6869, info@batteryCouncil.org or www.batteryCouncil.org.

Brewers of Ontario, Province of Ontario, Canada – Brewers of Ontario serves 12 million people and has 6,000 employees. In 1997, it had US\$1.4 billion in sales, 32 breweries in the system, 429 retail stores and 16,000 licensed locations. The system has a 99% Bottle Takeback Rate (15-20 times), 97.6% of all packaging is diverted and 80% are refillable bottles (with a 10 cent deposit). In 1998, it reported that its system provided a reduced cost/bottle (one cent vs. 10 cents for Al and twelve cents for 1 way Glass) and reduced disposal costs by 89% (from \$1.5 Million to \$170,000, 1992-1997). The Brewers invested \$75 Million in 1992 in industry-standard bottles. It recovers: Aluminum Cans, PET Containers, Plastic Bags, Stretch Wrap, Photodegradable Tear-Away Hi-Cone Plastic Rings, Office Paper, Computer Paper, Corrugated, and Steel (caps). In a survey it had done in April 1997, it found that 89% of the public want tougher environmental laws; 74% believe manufacturers and consumers should be financially responsible for containers (i.e., curbside programs should not be subsidized by taxpayers). In March 1998 exit interviews it found that its deposit and recycling system was viewed as more valuable than well-organized stores, polite, friendly staff or convenient days and times of operation.

Collins and Aikman, Dalton, GA – Sent zero manufacturing waste to landfill in 1998. Implemented waste minimization programs and energy efficiency programs that over the past four years (1998) have allowed them to increase production 300%, lower all corporate waste 80% and use no more energy than what it did four years ago.

For more information, contact: Dobbin Callahan, 800-241-4902x2309, mresearch@aol.com

Epson, Inc., Hillsboro, OR - This is the sole U.S. manufacturing affiliate of Japan's Seiko Epson Corporation. There are 2 major buildings, with 1,100 employees in 392,000 square feet of space on 38 acres of land. This facility manufactures inkjet printers, including the printer assemblies, circuit board assemblies, plastic injection molding, manufacturing of ink cartridges and warehousing. The facility achieved zero solid waste to landfill in March, 2000.

Epson reuses or recycles 90% of its materials.³ In FY2000, Epson also decreased the overall amount of materials wasted by 36%.

Epson recycles the following materials at its facility: ABS plastic; alcohol/flux waste from manufacturing; aluminum cans; batteries; blood borne pathogen waste; cardboard; CDs; circuit board scrap; computer scrap; GPPS (black trays from printer assembly); HIPS (black, random and mixed polystyrene; ink cartridges and toner; ink sludge from ink treatment; ink treatment resin filters; laminated copper; lamps and ballast; magazines (manuals); manufacturing equipment; metal - (steel, tin); metal special (copper, brass, etc.); mixed paper (desk side recycling); office furniture; packing material (peanuts); PBT regrind (plastic's black regrind); pins on tape; plastic bags, film, and wraps; polycarbonate (heat proof trays); polycarbonate (multi color parts); polypropylene (battery trays); polypropylene (ink cartridges); polystyrene foam #6; polystyrene trays; printer cords and cables; pure water resin filters; PVC plastic trays, MPA tape, IC tubes; solder dross ; solder scrap; sorted white ledger (print test paper); used oil and grease from kitchen; used oil from compressors and mold machines; used printers / computer / electrical equipment; wood (pallets, scrap); yard debris; and plastic film.

Epson achieved this success through a variety of recycling partnerships, including:

- ? Timbron International - Polystyrene processed into simulated wood products
- ? Greenbeans - Polyethylene foam ground for use in beanbag chairs
- ? Carton Services - Reuses boxes and packing "peanuts"
- ? Trex and Quantum

Epson has established goals to accomplish by 2004 as

- ? Zero hazardous waste and VOC's
- ? 100% of purchases "environmentally green"
- ? Manufacture products with recovered or recycled content
- ? All packaging > 50% post-consumer content
- ? Publication/promotion of environmental aspects
- ? Green Purchasing program:
- ? Surveying suppliers for chemical use and EMS status
- ? An EMS will eventually be required to remain our supplier

For more information, contact: George W. Lundberg, Environmental and Safety Engineer, (503) 617-5607, george.lundberg@epi.epson.com.

Fetzer Vineyards is America's sixth largest premium wine producer, located in Hopland, California. Fetzer has reduced its garbage by 93% in the last seven years. Its goal is to achieve Zero Waste by 2009. The winery recycles paper and cardboard, cans, glassware, metals, antifreeze, pallets - even its

³ Epson disposes of the rest of its waste in a waste-to-energy (WTE) facility. WTE is NOT considered a Zero Waste activity according to the Zero Waste International Alliance definition of Zero Waste (see: <http://www.zwia.org/standards.html>).

wine barrels. It composts 12 cubic yards of corks and 10,000 tons of grape seeds each year. Landscaping is based on zeriscape practices.

For more information, contact: Patrick Healy, Environmental Coordinator: patrick_healy@b-f.com or www.fetzer.com/

Frankie's Bohemian Café, San Francisco, CA – Frankie's, a local chain of three restaurants, has been participating in San Francisco's organics and recyclables collection program. It has dramatically increased recycling and reduced disposal to landfill since the program's inception, now diverting over 90% of its waste. All three restaurants separate its kitchen-prep food scraps, plate scrapings, soiled paper (e.g., paper napkins), scrap paper, natural fiber produce bags and the like for compost collection. Recyclable plastic, glass and metal beverage and produce containers are commingled for recycling. Cardboard is collected separately. The restaurant also self-hauls approximately 500 pounds of used fry-oil to a local fry-oil recycler each month. What remains is difficult to recycle items such as broken china, various plastics and composite materials. Frank, the restaurants' owner, says that his motivation to recycle is two-fold: to help the environment and to reduce its garbage bill. He's happy to have succeeded in doing both.

For more information, contact: Frank Pazderka, 1862 Divisadero Street, San Francisco, CA 94115, 415-710-3737.

Greens Restaurant, San Francisco, CA – Greens was founded in 1973, employs 87 people and is one of San Francisco's longest established and well-known gourmet vegetarian restaurants. Annie Somerville, the executive chef, has earned a national reputation for her imaginative vegetarian dishes. She is also committed to keeping the restaurant's waste to a minimum and has reduced its waste by over 90%. The restaurant has three recycling dumpsters: one for cardboard, newspaper, office paper and other mixed paper; a second for plastic and glass bottles and jars; and a third for metal beverage and produce cans. These are collected twice weekly. In addition, the restaurant fills fifty 40-gallon cans with kitchen scraps, plate scrapings, unusable produce and soiled paper twice weekly. Half of these are collected through San Francisco's green waste collection and recycling program. The remainder is composted at the Green Gulch organic farm, located 20 miles outside of San Francisco, to help grow organic vegetables that find its way back into Greens' vegetarian meals. The restaurant also donates its fresh but unused bread and other foods to Food Runners, a food donation organization that serves the needy.

For more information, contact: Annie Somerville, Building A, Fort Mason, San Francisco, CA 94123, 415-771-6222, www.greensrest.citysearch.com

Hewlett-Packard in Roseville, CA (9,000 employees) is diverting 92-95% of its solid waste; saving almost a million dollars a year in avoided waste disposal costs (\$870,564 in 1998). HP recycles cardboard, metal, foam, plastic peanuts, low-density polyethylene plastics (LDPE), Instapak, polystyrene plastics, and reuses and recycles pallets.

For more information, contact: Bill Coffee, Somers Building Maintenance (HP contractor), 916-869-9561 or bcoffee@sbmcorp.com.

Interface, Inc. (\$1 billion carpet sales in 1996). In 1999, 4 of 16 manufacturing facilities diverted more than 90% of its waste from landfills. Several others are in the 80% range. Since 1994, Interface has eliminated more than \$90 million in waste.

Interface has pioneered, among other things, the 'Evergreen Lease,' giving the company and its customers economic incentives to take back old carpets and recycle them, while assuring customers of clean, attractive carpets. Interface is reexamining its sources of waste and creating ways to reduce and finally eliminate them. It's redesigning and rethinking products so that it can deliver more with less. It is reengineering production processes to reduce resource consumption. If part of a process or product doesn't add value, Interface eliminates it. And that philosophy goes beyond manufacturing. Its aim is Zero Waste in every discipline, from accounting to sales to human resources.

Interface also recently introduced its biodegradable carpet tile, the first of its kind that replaces petroleum-based nylon with fiber from corn. Interface has a ReEntry program, that will reclaim existing carpet tile or broadloom and either recycle, downcycle, or repurpose it. Interface guarantees that old carpet it collects (theirs or competitors) won't end up in a landfill.

For more information, contact: Buddy Hay, Buddy.Hay@interfaceinc.com or Reva Revis, 312-961-9067, Reva.Revis@interfaceinc.com

Larry's Markets, Bellevue, Washington – Larry's Markets instituted a composting program in 1996 as part of its plan to run environmentally responsible stores. The company's five stores recovered 90 of its food discards, sending 750 tons of food, floral and waxed cardboard to compost and 120 tons of meat products to rendering. Its efforts realized a net savings of approximately \$41,000 a year. Source: Target Zero Canada at <http://www.targetzerocanada.org/>.

Mad River Brewery in Blue Lake, CA currently diverts 98% of its garbage from landfills from its 15,000 square foot facility. It produces less than two 90-gallon cans of trash per week and saved over \$35,654 in 1998. It recycles scrap metals, glass, and office paper. It composts spent grain and hops. Hops are also broadcast on pastures. Grain is also made into livestock and poultry feed. It rebuilds and recycle pallets. Construction materials are reused and salvaged. It stores reusables on-site. It takes-back 6 pack containers. It reuses plastic mesh backs from grain shipped in by donating them to a composter to package compost and to Bolla to make into reusable shopping bags. Cellulose filter pads and staff food scraps are composted on site. PET and metal strapping are recycled. Shrink wrap is donated to Mt. People's Warehouse to recycle. Cardboard boxes are recycled. Bottles, 6 pack containers and cardboard are made of recycled material. Even part of everyone's job description is to reuse and recycle.

For more information, contact: Bob Ornelas, Box 767, Blue Lake, CA 95525, 707-269-0398, arcatacy@tidepool.com.

New Belgium Brewery, Fort Collins, CO. Founded in a basement by Jeff Lebesch and Kim Jordan in 1991, New Belgium Brewery now produces over 250,000 barrels of beer annually, employs 150 people and is the 12th largest craft brewer in the U.S. The company endeavors to infuse environmental mitigation in the entire brewing process and outlines the company's environmental policies in its "Steps to Being Green" guide. The brewery diverts 55,500 lbs/day in spent grain to dairy cow feed alone. It also recycles bottles and cans, amber glass, cardboard, paperboard, mixed office paper, wood, plastic wrap, plastic wrap rolls, plastic bags, Styrofoam, consumer batteries, used oil, computers, ink cartridges and fifty-five gallon plastic drums. Cafeteria food waste is vermi-composted onsite. It is exploring agricultural markets for its diatomaceous earth (a filtering agent). The brewery landfills less than one 30-yard compactor of trash each month, and has diverted over 90% of its waste from landfilling. For more information contact: Hillary Kaufman, Sustainability Goddess and Donations Deemer, 500 Linden Street, Fort Collins, Colorado 80524, hkausman@newbelgium.com, 970-221-0524, Toll-Free: 888-NBB-4044, <http://www.newbelgium.com>.

The brewery also completed construction of an onsite water treatment facility, which should pay for itself within 5 years through energy production and reduced water discharge fees. Methane generated during treatment will power a cogeneration plant to ease the brewery's peak hour energy use. Treated water will reportedly be pure enough to be released into the Cache la Poudre River. The company plans to treat the plant's sludge on its 50-acre site through vermi-composting. This employee-owned company also pays 2.5 cents more per kWh to ensure that 100% of its energy is wind generated. The employee owners voted to reduce their annual bonuses to offset the additional cost. The company has won numerous environmental awards, including Colorado's Certificate of Achievement in Pollution Prevention, the EPA's Green Power Partnership "Founding Partner" Award and the North Front Range Solid Waste Action Group's Waste Savers Award. "Fat Tire" is its most widely selling beer.

For more information contact: Hillary Kaufman, Sustainability Goddess and Donations Deemer, 500 Linden Street, Fort Collins, Colorado 80524, hkausman@newbelgium.com, 970-221-0524, Toll-Free: 888-NBB-4044, <http://www.newbelgium.com>.

NUMMI, Fremont, CA – The New United Motor Manufacturing, Inc., a Toyota and General Motors manufacturing joint venture, employs 5,000 people and manufactures approximately 350,000 Toyota Corollas, Tacomas and Pontiac Vibes each year. Stewart Rupp, Manager of Environmental Affairs, says the facility's long focus on lean manufacturing has borne a number of successful waste reduction and recycling programs. NUMMI's largest source reduction effort was to encourage its parts suppliers to switch from cardboard to reusable shipping containers. The reusable containers are made of collapsible and recyclable plastic and are "reverse-shipped" to the various suppliers of the 1,500 automobile parts used in the manufacturing process. NUMMI estimates that it saves \$20 million dollars per year with this reuse program alone.

In addition, the automobile manufacturing plant separates various materials for recycling, including scrap metal, cardboard and pallets. The plastic parts manufacturing plant, which produces bumpers and other components, recycles all plastic scrap through a local recycler. The facility also has an office recycling program in which employees have only a very small plastic bag for its trash and a larger, rigid recycling bin for its mixed paper. The company has found that this encourages recycling and is considering eliminating the trash bags all together. Employees would then take its trash to centrally located trash containers. To ensure that as many resources are captured as possible, all of NUMMI's trash passes through a small materials recovery facility ("mini-MRF") that recovers metals, wood, cardboard and plastic film. The remaining trash primarily consists of difficult to recycle plastics, cafeteria waste, composites and other difficult to recycle items. NUMMI has diverted over 90% of its solid waste from landfilling.

Finally, NUMMI sends the sludge generated from its on-site water treatment plant to Nevada for use by a cement plant. The facility also cut its hazardous chemical usage by 50% by reducing the tube diameter and length of paint and other chemical lines. This results in the reduction of hazardous waste when the various lines are cleaned. Hazardous solvents are recycled by and repurchased from Romic Chemical, a local hazardous waste recycling facility, at a two to three-fold cost savings to the company. NUMMI is also looking at biodegradable plastics for cafeteria use. NUMMI is a repeat CA Waste Reduction Awards Program (WRAP) awards winner. For more information contact Stewart Rupp, Manager of Environmental Affairs, srupp@nummi.com.

Pillsbury, MN. The Eden Prairie facility diverts over 96% of waste generated and the Chanhassen plant diverts over 94%. Pillsbury has adopted a Zero Waste goal. Overall, Pillsbury's manufacturing facilities recycled or reused 83% of all manufacturing waste in fiscal 1999, including enough paper and cardboard to save 200,000 trees, almost 82 million gallons of water, and more than 48 million

kWh of electricity. Pillsbury increased recycled content of its folding cartons for dry mixes to approximately 50%. Pillsbury's distribution centers now use rented or recycled shipping pallets for the majority of its products.

Pillsbury has adopted a principle in its Environmental Affairs program to eliminate potentially harmful discharges and emissions into the air, onto land, and into water. Pillsbury strives to improve its waste efficiency by 10% each year. Pillsbury estimates that it saves over \$500,000 per year through these efforts.

For more information, contact: Dottie Shay, Environmental Health and Safety Manager, 612-474-7444x7576, Dshay@Pillsbury.Com, www.pillsbury.com/about/successstories.asp#waste

Playa Vista Project, Los Angeles, CA – The Playa Vista Project is a major development of a new community on a former Howard Hughes aircraft plant site, north of Los Angeles airport. The Playa Vista master developers are currently developing 3,000 homes and a new entertainment, media and technology center on 1,086 acres. It renovated and reused half of the 22 major structures on-site (11 historic buildings) and demolished the remaining 1.2 million square feet. Playa Vista worked with the City of Los Angeles to incorporate the City's model recycling specifications into the decommissioning contract specifications, partly in response to a City EIR mitigation measure requiring the Project to meet all the City's recycling goals (the City of LA has a goal to recycle 70% of all wastes in the City by 2020). Those specifications required the decommissioning contractor to prepare a Solid Resources Management Plan, deposit concrete and asphalt on site, grind wood and green waste on site, and separate materials for offsite recycling.

Thanks to this careful planning, 84,035 tons of recyclables were recovered, fully 92% of all materials generated from demolition on site, including: scrap metals, wood, drywall, ceramics, glass, corrugated cardboard, concrete and asphalt. Materials crushed on-site saved thousands of truck trips (and related air pollution) and saved \$2 million for the Project. The Project used both source-separated bins in some locations, and commingled recycling bins in other locations, depending on the materials involved and nature of activities underway. Careful attention was paid to on-site builder education programs and coordination with builders on the location and frequency of service required for all bins. The project also diverted 92% of all construction debris during the first phase of construction activities of 1,600 residential units and 425,000 square feet of offices.

For more information, contact Catherine Tyrrell, Environmental Affairs Director, Playa Vista, 12555 West Jefferson Boulevard, Suite 300, Los Angeles, CA 90066, 310-822-0074, CTyrrell@PlayaVista.com

San Diego Wild Animal Park, San Diego, California, works to preserve endangered plants and animals and its habitats. The park reduces use of natural resources derived from wild areas such as trees, mined ore and water. Staff practices wise use of office supplies, recycling containers and paper products, and compost huge amounts of organic wastes. Park visitors are encouraged to use recycling containers located throughout the facility. Waste disposed at landfills represents only 4% of the Park's waste stream and saves over \$1 million annually in tipping and hauling fees. Source: Target Zero Canada at <http://www.targetzerocanada.org/>.

Scoma's Restaurant, San Francisco, CA – Scoma's is an award winning, family-owned seafood restaurant located on Pier 47, in the heart of historic Fisherman's Wharf, since 1967. It is the 13th highest grossing restaurant in the U.S., serves an average of 1,200 customers per day (up to 1,800 during high season) and employs 150 people. Scoma's has made waste reduction and recycling part of its employee training and business culture. It enthusiastically participates in San Francisco's all food

and organics recycling program by separating plate scrapings, kitchen scraps, unusable produce, meat, fish, cheese, soiled paper and non-office paper for daily collection and composting. Office paper is kept separate for recycling. The restaurant also encourages reuse by allowing local vendors to collect and reuse approximately 10% of its cardboard boxes. The remainder is collected daily for recycling. It also recycles all glass, metal and plastic beverage bottles; metal produce cans; glass bottles and jars; and recyclable plastic produce bottles. Fry oil is cycled through a filtration system to extend its freshness and is eventually collected by a cooking oil recycler.

Its daily trash fits into two 96-gallon containers and consists primarily of difficult to recycle items such as plastic wrap, gel packs, plastic packing ribbons, polystyrene, clothes hangers (from laundry service), plastic straws and the like. The restaurant has recycling stations strategically located throughout the restaurant in prep areas, soiled dish area, server stations, bar and office. Scoma's diverts over 90% of its waste from landfilling. Steve Scarabosio, the restaurant's Executive Chef, says its motivation is, "to do the right thing and lower our garbage bill. And we hope our compost will help grow good organic produce." Scoma's purchases organic produce whenever viable, favors biodegradable cleaning products and avoids the purchase of farm raised fish.

For more information contact: Steve Scarabosio, Executive Chef, Pier 47, San Francisco, CA 94133, 415-771-4383, steve@scomas.com, www.scomas.com.

Vons-Safeway, Southern California and Southern Nevada District – This retail, warehouse and manufacturing district includes 328 stores and 4 distribution and manufacturing facilities. The stores and facilities have implemented a number of successful source reduction and recycling programs. These include such traditional programs as cardboard recycling, meat and fish scrap rendering and pallet recycling. However, the company has gone beyond the norm and has implemented an organics collection and composting program for unusable/inedible produce, bread, wax-coated cardboard boxes, non-reusable wood packing crates and other compostable materials. The company also collects and compacts mixed plastics, such as six-pack rings, buckets, film and bags and ships them to a mixed plastics recycler. In addition, Vons-Safeway has converted much of its wood and cardboard shipping crates and boxes to reusable, recyclable and sometimes collapsible plastic containers. These are used for shipping milk, bread, watermelons and other goods from its distribution centers to its stores. The company regularly donates large volumes of un-saleable but edible breads, canned goods, produce and other foodstuffs to numerous food banks. Vons-Safeway has been a frequent winner of the California Waste Reduction Awards Program (WRAP) award and diverted over 90% of its wastes from landfilling. For more information contact Curt Smith, Distribution Warehouse Manager, 562-802-6311.

Xerox Corp., Rochester, NY – Since the early 1990s, Xerox adopted Waste-Free Factory environmental performance goals. The Waste-Free Factory criteria include significant reductions in waste, emissions, and energy consumption, and increased recycling. In 1998, worldwide solid waste recycling rates reached 88% and savings amounted to \$45 million.

In 1998, Xerox set environmental requirements for its suppliers worldwide, to design products that are durable and reusable, in factories that make dramatic reductions in air, water, and solid waste. Xerox is asking all of its facilities and suppliers to achieve a 90% reduction in all emissions from a 1990 baseline. In 1999, a revision of the Waste-Free Factory criteria will increase focus on reducing waste generation.

Contact: Anne Slocum, Anne.Slocum@usa.xerox.com or Jack Azar, Jack_Azar@wb.xerox.com, 716-422-9266.

Yost Printer & Lithographers, Monrovia, CA – Yost printers was founded in 1932 and has always minimized waste. Darrell Yost, the company's owner, says reuse and recycling is a printing business tradition that saves money. As a result, the company recycles all of its paper scraps, trimmings, and printing spoilage; separates its newspaper, bottles and cans for donation to a local church; and donates 8 ½ x 11 sized trimming scrap to churches, schools, and non-profits. Packing cartons from vendors are reused in-house and the company encourages its repeat customers to return its cartons for reuse. The company also reuses kraft paper packaging from received shipments to cushion its own product during packing. Pallets are either returned to paper suppliers or reused in-house. Aluminum printing plates are also recycled. The only items left in the trash are odds and ends like used packing tape, window envelopes, convenience store cups and other difficult-to-recycle items. Yost diverts over 90% of its waste from landfilling.

Yost Printers has been a repeat recipient of the California Waste Reduction Awards Program (WRAP) awards. In September 2002, the company merged with The Processors, another progressive printing shop, where Darrell says the reuse and recycling tradition will continue.

For more information contact: Darrell Yost, 132 East Lemon Avenue, Monrovia, CA 91017.
Telephone: 626-359-5325.

Zanker Road Landfill, San Jose, CA – Zanker has had an overall diversion rate of more than 90% for the past five years. Zanker owns and operates three major recycling and composting facilities in the San Jose area. Currently up to 2,000 tons per day is received at the Zanker Road Landfill facilities, of all types of materials. Zanker currently processes and markets yard waste and compost, wood waste, cardboard, gypsum, concrete, clean and mixed demolition debris, metal and bulky items.

The material produced from the CandD processing is sold mostly to construction and paving contractors as Class II aggregate and engineered fill. Wood is sold as biomass fuel and soil amendments. Metals are separated and sold by categories of tin, #2 unprepared steel, copper, brass and aluminum. Zanker markets its finished organics products to over 170 customers and has more demand for its products than it produces.

For more information contact: Michael Gross, Zanker Road Landfill, San Jose, CA. Telephone: 408-263-2384 or Michael@z-best.com.

International Zero Waste Businesses

Canada

(Source: <http://www.targetzerocanada.org/>)

Husky Injection Molding Systems Ltd. - Husky designs and manufactures one of the most comprehensive lines of injection molding equipment in its industry and is one of the top three suppliers world-wide in this \$21 billion market. Husky's manufacturing facilities are located in Bolton, Ont., Dudelange, Luxembourg and Milton, Vermont, and it has 41 offices in 25 countries.

Established in 1953, Husky serves customers in more than 100 countries with a wide range of plastic products such as soft drink and mineral water bottles, food containers, automotive components, and technical products such as the housings for cellular phones.

As part of its vision, Husky integrates social, environmental, and economic considerations into all its daily decisions. Husky also demonstrates proactive environmental responsibility and care for all who are affected by what the company does. As an example of its commitment to the environment, Husky diverted more than 5,000 tonnes of material from landfill in 1999, saving the company over \$350,000 in disposal costs. Husky diverts 95% of all material it generates.

Husky recycles everything for which there is a market from lightbulbs and binders to food waste. Proactively, Husky works with suppliers to use returnable shipping containers and packaging, reduces initial consumable purchases by using double-sided printers and copiers, has electronic phone books, and insists on email and the intranet for its primary communication tools.

Husky is committed to aggressively reduce the use of ozone depleting and other harmful chemicals such as HCFCs, chlorinated solvents and VOCs. Its efforts include: eliminating the annual use of over 200,000 L of chlorinated solvents (trichlorethane) by converting solvent-based metal part cleaners to water-based washers; stopping the use of more than 4,000 L of both toluene and naphtha annually, through responsible product substitution; and converting 60,000 m² of grass to naturalized landscape, eliminating the need to 4.5 tonnes of chemical fertilizer and 3,000 kg of herbicides annually.

Finally, the company audits suppliers providing recycling and waste disposal services to ensure it is in compliance with environmental laws and that collected material from the company is properly recycled.

Interface Flooring Systems (Canada) Inc. - Interface's Canadian operations are based in Belleville, Ontario where it is part of the largest modular carpet manufacturer in the world. Interface advises, coordinates, and delivers a complete and comprehensive package of interior office environment products and services, primarily floor coverings. In addition to the Belleville plant, there are 29 production facilities with operations in 110 countries, employing over 7,000 people.

Interface's motto is "doing well by doing good." This direction not only make sense environmentally; it also makes good business sense for Interface. By addressing the needs of the environment in its industrial production, Interface has decreased costs, improved profits, and dramatically reduced the burdens on living systems.

The company's ReEntry program takes back products after their useful life for non-landfill disposal by reusing or recycling. Interface Canada has reduced total energy consumption per unit by more than 70 per cent and is committed to a goal to use 100 per cent green power by June 2002. The company has also reduced its landfill burden by more than 90 per cent and has seen a 97.5 per cent reduction in the average consumption of water each month. Instead of producing thousands of litres of dirty effluent in its manufacturing process, Interface has scrapped its water-hogging printing process for carpets and replaced it with embroidered designs. Now the only water used at its plant is for watering lawns and flushing toilets.

Its modular products have an extended life cycle and flexibility to accommodate selected replacement of high traffic areas. This ensures lower consumption in the long term.

Interface has also stopped using provincially-regulated hazardous chemicals altogether. By eliminating these toxins, the firm has created more savings and improved carpet quality with a longer floor life. And it's a commitment to the environment that's company-wide. For more than five years, Interface has implemented its QUEST (Quality Using Employee Suggestions and Teamwork) program that has saved the Belleville plant \$3 million and the company US\$90 million worldwide.

The Ontario operation has also eliminated all heavy metals in its manufacturing processes, reduced the amounts of raw materials used, cut air emissions, and recycles 100% of the backing from its old carpets. The many environmental initiatives and achievements of the Belleville plant have boosted US exports to 60% from 15% of its total production in four years, while corporate sales at Interface climbed to \$US2 billion.

The Belleville plant has also won the company's environmental leadership award and continues to move toward sustainability. The company hopes it will ultimately become a “restorative enterprise,” where it will be putting back more than it takes from the Earth.

The ultimate aim of Interface is to recycle all its material, convert sunlight into energy, have zero scrap going to landfill, and have no emissions into the ecosystem.

Seaman's Beverages- Seaman's Beverages Limited operates today as one of the last family-owned independent makers of its own soft drinks in Canada. Founded in Charlottetown on Prince Edward Island in 1939, Seaman's 100 employees continue to make soft drinks the old fashioned way, attempting to preserve both its heritage and the environment.

Seaman's Beverages has always used refillable glass bottles for its soft drinks. Throughout its history, Seaman's has seen many of its competitors switch to other packages, but it believes the world's best soft drinks are served in refillable glass. Seaman's also believes that refillable glass is best for its customers and the environment.

Its refillable glass bottles can be reused up to forty times. Sometimes a bottle will stay in circulation for up to 20 years. When bottles are taken out of circulation, they are recycled – Seaman's recycles 97% of its soft drink containers, and together with the beer industry on the Island divert over 47 million containers from litter and landfill each year.

Because the refillable system involves the customers, retailers, bottle exchange dealers and delivery staff, Seaman's has achieved the highest refillable bottle recovery rate in North America, and the system doesn't cost the taxpayer anything. That's because the user and the manufacturer of the beverages are solely responsible for paying, collecting and returning the bottles.

Seaman's is committed to not only the refillable system but to also work with its employees, customers and neighbors to be an environmentally friendly company that is committed to reducing waste and energy.

New Zealand

(Source: <http://www.zerowaste.co.nz/>)

Carter Holt Harvey Tissue , Kawerau, New Zealand - Carter Holt Harvey Tissue, New Zealand's leading producer and supplier of commercial and household tissue products such as Purex toilet paper, Sorbent toilet paper and facial tissues, Hygenex and Handee paper towels, and Deeko serviettes, has achieved Zero Waste to landfill from its operations in Kawerau.

The mill decided in 1996 to adopt a policy of Zero Waste to landfill. It was this attitude that caused the main breakthrough. Within three months of adopting that policy, waste to landfill was reduced by about 30%, and within eighteen months, waste to landfill was reduced by about 90%.

This was achieved through a policy that focused on reducing waste. For the remaining solid waste, the company focused on returning them as raw materials wherever possible, or putting them to some other use.

For example, prior to pulping, wood chips were screened to separate out the undersize particles. These consisted of tiny slithers of wood called pin chips that were normally sent to landfill. It took little effort to discover that local horse trainers liked the pin chips to put on horse training tracks. It was soft on the horse's hooves and good at absorbing undesirable material from horses. It didn't take long for the demand to exceed the supply. Further research however, showed that it didn't need to be screened out at all and it is now processed into pulp and then into tissue product.

Similarly bailing wire, which is very difficult to handle, is compressed, bailed, and recycled as scrap metal. Cores from the centre of paper reels are recycled to manufacture linerboard, sack kraft and corrugating media.

The breakthrough in achieving Zero Waste however, came with the discovery of Peter Fedricsen of Materials Processing Limited, Hamilton. His commitment to Zero Waste is total and it is a way of life to him. Very quickly he took all the company's solid waste, sorted it, and recycled it back as raw material wherever possible.

The result is that over the last 4 years the waste to landfill has gone from 760 m³/month to zero. For further information contact Kevin Wilson on Kevin.Wilson@CHH.co.nz

Fuji Xerox - With available landfill sites shrinking at an alarming rate, Fuji Xerox adopted a policy of zero-landfill. As a result, every level of production has been redesigned to reduce wastage.

This process is called the "Closed Loop System." First used products are collected, disassembled and cleaned. Then all reusable parts are reprocessed for reuse and screened to ensure that they are as good as new. Finally, they are integrated into the production line.

The non-reusable products are decomposed into raw materials for processing into base materials, which in turn are used for production of 'new' products. Fuji Xerox products and parts are designed to be durable, with recyclable/recycled thermoplastics and metals. As such, most copiers, printers and multifunction devices can be remanufactured at the end of their initial life cycles.

The Document Centre 265, for example, has 97% of its parts designed to be recyclable and 80% capable of being reprocessed. In time, Fuji Xerox will increase the number of reusable components within its products, aiming to make the 100% Reduce, Reuse, Recycle plan a reality. Xerox kept more than 6 million copy and print cartridges from clogging landfills around the world in 1999.

Fuji Xerox New Zealand

Fuji Xerox New Zealand is actively working towards the reduction of landfill by collecting used copy and print cartridges for recycling. Its local program is running in conjunction with the "One World-recycling" program of Europe.

Cartridges are currently being collected for recycling using the four methods listed below:

- ? Postage paid return stickers (these are for smaller cartridges and are enclosed in the original packaging)

- ? Office Care Cartridge Recovery Unit - This collection box is designed for the office environment and can hold several cartridges.
- ? Delivery Drivers - Its drivers can collect used cartridges during the course of a normal delivery
- ? Service engineers - Fuji Xerox service engineers are able to return small numbers of used cartridges.

The recycling initiatives are not just limited to copy and print cartridges but also include all the company's latest products coming onto the marketplace. Each product has been designed to very stringent recycling guidelines.

Fuji Xerox is also endeavoring to lead the industry by the:

- ? Development of environmentally conscious products
- ? Use of recycled parts
- ? Long-life design
- ? Energy-saving design
- ? Low-noise, low-ozone emission design
- ? High-speed duplexing copy function

The company believes that an effective tool in promoting product recycling is to require that products be developed for eventual recycling and reuse. At Fuji Xerox, design processes are carried out based on recycling design guidelines. Fuji Xerox also offers a recycled paper, which is suitable for use in photocopiers, facsimiles and printers.

For more information, contact: Auckland: (09) 377 3834; Wellington: (09) 385 1799; Christchurch: (09) 374 4700.

NZ Business Council for Sustainable Development - Eight member companies have become active participants in the Zero Waste project of the NZ Business Council for Sustainable Development:

- ? 3 M New Zealand
- ? Living Earth, Ltd.
- ? Palliser Estate Wines of Martinborough
- ? Port of Tauranga
- ? The Warehouse, Ltd.
- ? URS New Zealand
- ? Watercare Services Limited
- ? Waste Management New Zealand, Ltd.

These businesses have all made the commitment to a goal of Zero Waste. They are all at varying stages in the process of implementing Zero Waste in its businesses, but all have found important gains so far in their journey and all have valuable lessons to share.

Africa

Namibian Breweries – The sorghum brewery in Tsumeb in Southern Africa opened in January 1997 with the message “good beer, no chemicals, no pollution, more sales and more jobs.” The brewery is a fully integrated biosystem with 40 different biochemical processes to reuse everything (heat, water, wastes, and CO₂). The brewery produces 7 times more food, fuel and fertilizer, 4 times as many jobs and 12 more products, compared to conventional beer producers. Spent grain is used to grow mushrooms. Chickens eat earthworms set loose in grain. Digester for mushroom, chicken feed and

chicken wastes generates methane gas for steam for fermentation. Alkaline water (normally needs chemicals to treat) goes into fish ponds (8 different types of fish sold) and spiruline algae (70% protein helps on child malnutrition).

Contact: Mrs. Brigitte Sass or Mr. G. Roux, 264-61-262-915x2122 or Gunter Pauli at the Zero Emissions Research Initiative (ZERI) of the United Nations University (pauli@zeri.org or dellasenta@ias.unu.edu). Other ZERI case studies may be found at: <http://www.zeri.org/index.cfm?id=aboutCaseStudies>.