



# 2005 Illinois Governor's Pollution Prevention Awards

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Abbington Distinctive Banquets

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a division of the  
Illinois Department of Natural Resources

## 2005 Governor's Pollution Prevention Awards

For the past 19 years, the Illinois Waste Management and Research Center (WMRC) has worked with the Illinois Governor's office to recognize outstanding pollution prevention efforts in our state. These annual awards are presented to businesses and organizations in Illinois that have successfully reduced the generation of gaseous, liquid, and solid waste. This year 15 Illinois companies and organizations are being honored for their achievements in helping the environment and the economy. Categories in the Governor's Pollution Prevention Awards include industries of all sizes, vendors/suppliers, educational institutions, service organizations, and continuous improvement companies.

The Pollution Prevention (P2) projects honored this year saved the companies and organizations millions of dollars in material and disposal costs. The companies and organizations also prevented hundreds of tons of waste materials from being released into the environment and saved millions of gallons of water from being sent to treatment facilities.

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## **Cintas Corporation Romeoville**

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**Cintas Corporation** in Romeoville is a large industrial laundry processing approximately 16 million pounds annually. Cintas had used over two million gallons of fresh water in the wash process at a cost of over \$21,000 in water and sewer charges per month. Cintas installed a new wastewater treatment system, which reused water and reused the effluent from the process. The new wastewater treatment system allowed Cintas to meet discharge limits. Modifications to the wash formulas were made to take advantage of the reused water while keeping the cleaning quality equal to that of the standard fresh water formulas. Cintas reduced fresh water usage by over 60%, or more than one million gallons per month. Water and sewer charges were reduced by over \$10,000 per month. Now, several other Cintas plants are reusing water and achieving similar results because of the work done in Romeoville.



## Cardinal Health McGaw Park

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**Cardinal Health** in McGaw Park is a supplier of products, services, and technologies that support the healthcare industry. Cardinal Health has been recycling corrugate, paper, plastics, and metals for many years in an effort to reduce landfill and hazardous waste. Cardinal evaluated existing processes and developed new procedures for routing expired and obsolete products to more environmentally friendly paths. The obsolete products are donated to World Vision, an international Christian relief and development organization, to be used domestically or overseas. Whatever World Vision is not able to use is either recycled or sold for “veterinary use only.” Cardinal Health enlists the services of handicapped people from Countryside Association to sort the products and send components to the appropriate venue. This process has decreased both landfill and hazardous waste disposal and has given Cardinal Health an opportunity to give back to the community. Since 2001, Cardinal Health has reduced its waste more than 14 million pounds through donation, recycling, or re-selling products.



## **Akzo Nobel Non-stick Coatings Des Plaines**

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**Akzo Nobel Non-Stick Coatings** (ANNSC) in Des Plaines is a global manufacturer of non-stick and high heat protective coatings for cookware manufacturers, the automotive industry, and other industrial equipment manufacturers. The manufacturing process requires extensive equipment cleaning between batches to eliminate potential cross contamination. During the process of implementing an ISO 14001 Environmental Management System, ANNSC examined and prioritized its major environmental aspects. Through this analysis, the people at the facility found ways to minimize the negative impacts upon the environment and track the changes. An initiative also was developed to reduce hazardous waste from cleaning operations. As a result of implementing the environmental management system and closely examining the cleaning processes at the facility, there was a 35% reduction in hazardous waste in overall production in 2004. The liquid waste disposal costs in 2004 were reduced more than \$41,000 from the previous year, a 47% reduction.



## Sarah Bush Lincoln Health System Mattoon

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**Sarah Bush Lincoln Health System (SBLHS)** in Mattoon is a community-based, not-for-profit organization whose mission is to improve the health status of people in East Central Illinois. SBLHS established a committee to examine ways to improve the organization's conservation efforts. Working with local and state officials, the healthcare system identified steps needed to establish long-term and sustainable pollution prevention efforts within the organization. SBLHS also conducted a building energy audit and waste audit, resulting in several conservation projects and substantial savings to the organization. The health system installed a geothermal heating/cooling system in the Regional Cancer Center, upgraded lighting bulbs and fixtures with more efficient models, began recycling cardboard, and instituted a pilot project for paper and plastic recycling. In one year, these steps have saved SBLHS an estimated \$278,125. The organization



is now exploring vermicomposting as a process to eliminate food waste.

## Solvent Systems International, Inc. ElkGrove Village

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Solvent Systems International Inc. in Elk Grove Village is an expert in beneficial reuse, industrial waste recycling, and pollution prevention.



The company worked with WMRC to develop The Grease Gator, a water-based parts washer with a built-in cleaning fluid. The patented Grease Gator immediately splits oil from the cleaning solution enabling quick removal of the used oil while keeping the non-hazardous cleaning solution constantly clean. It eliminates the need for solvents and slashes parts cleaning costs. It has been proven in independent tests to clean the dirtiest parts 57% faster than mineral spirits. The Grease Gator reduces volatile organic compound

(VOC) emissions by 99.5% over mineral spirits (VOC's facilitate the creation of greenhouse gases). Also, the Grease Gator will eliminate 1,000 pounds of organic waste per year for each mineral spirits parts washer replaced. The Grease Gator also makes oil recovery easy during the cleaning process, so customers can use the recovered oil as a heating oil replacement.



## International Truck & Engine Company Melrose Park

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**International Truck & Engine Corporation** in Melrose Park produces diesel engines for mid-sized trucks and school buses. In 2004, the company modified its method for testing the hardness and depth of the crankshafts it produces. International changed from a destructive method to a non-destructive method using ultrasound. International estimates that this change could save up to \$150,000 per year and reduce 9166 pounds of waste scrap crankshafts. International estimates an additional \$368,000 annual savings by switching to water-based paint, substitution of aqueous cleaners, and improved chemical management of coolants.



## Caterpillar Inc - CMO Mapleton

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**Caterpillar Inc – CMO** located in Mapleton is an iron foundry primarily casting engine blocks, engine heads, and cylinder liners. At Caterpillar’s Cast Metals Organization (CMO) metal castings

are made by pouring molten iron into sand molds, allowing the iron to solidify and cool, and removing the castings from the sand. The rough casting

then goes through a finishing process that includes blasting with steel shot. Historically, Mapleton would collect used shot in a dumpster to be disposed of off site or melted down in the furnaces. Replacing this shot is expensive and melting dirty shot creates indoor air quality issues.

In the new process, the shot is accumulated in tubs and sent to a recycler who cleans and sorts it. The plant has reduced fugitive smoke exposure to employees, reduced

the amount of waste going to off-site landfill, and started a process that saves the facility an estimated \$70,000 per year.



## **National Manufacturing Sterling & Rock Falls**

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**National Manufacturing** is a building hardware manufacturer based in Sterling and Rock Falls. In 2004, the company switched from an electrostatic spray paint system to an electrocoat painting process for coating its gate hardware. The company estimates that this change reduced its volatile organic compound (VOC) emissions by 8.416 tons per year. The solvent used to clean the spray guns has been reduced by 960 gallons annually. The company estimates an annual energy savings of \$40,845. In addition, the company was able to reduce the number of line operators from 11 to five, resulting in an annual labor savings of \$249,600. Finally, the company saved \$72,475 on the annual cost of paint because the new process used 2250 fewer gallons. The new e-coating technology also improved the paint coverage and thickness, resulting in a better coating.



## **Cadbury Adams Rockford**

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**Cadbury Adams** in Rockford is a major manufacturer of chewing gum. Two projects were undertaken in 2004 that had positive environmental benefits. Units that use non-contact cooling water to provide temperature variability for melting the gum base used water from the local municipality. That water had a high mineral content, so the cores of the units became fouled frequently, restricting water flow. The cores needed to be de-scaled several times per year using hazardous chemicals. Cadbury Adams developed a process whereby softened, chilled water from a closed loop system was employed along with heat exchangers. This process brought about a 46.8 million gallons per year reduction of water usage, and elimination of labor and chemicals to de-scale the units. Cadbury Adams also reduced the use of an ozone-depleting refrigerant in its plant by substituting the use of chilled water to provide the right temperature conditions for curing its gum. The company is saving \$145,100 a year from this initiative.



## **GE Healthcare Arlington Heights**

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**GE Healthcare** in Arlington Heights is a manufacturer of radiopharmaceuticals that are used by physicians in the diagnosis of disease through various imaging techniques. In 2004, GE Healthcare began a project to upgrade radiochemical manufacturing and at the same time reduce employee exposure by replacing an obsolescent cyclotron with a more efficient state-of-the-art machine. The project required the removal of 150,000 pounds of concrete. The sections removed could not be disposed of by conventional means because of the presence of radioactivity from nearly 20 years of cyclotron operation. Rather than sending the material to a licensed radioactive burial facility with finite space, the concrete was incorporated into the shielding of two new target cells. This resulted in the company saving an estimated \$750,000 in disposal fees. By recycling this concrete, space was made available at a burial site for materials that cannot be recycled.

**GE Healthcare**



## **Nalco Company Bedford Park**

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**Nalco Company**, located in Bedford Park, is a specialty chemical company that manufactures a variety of products used for the casting of metal parts and ceramic forms. This past year, the plant made improvements to recover more products from its manufacturing process and convert more of its products to a more efficient manufacturing technology. These changes included adding a flushing step to recover product and reduce the number of cycles of adding chemicals. Nalco also developed a new technology to make silica projects. These projects saved millions of gallons of water, reduced the amount of treatment chemicals needed by 60%, and reduced the wastewater solids generated by 27.6%. The overall savings from these projects totaled over \$3 million. Nalco also continues to be home to a number of creative beneficial reuse projects of idled buildings. These buildings are used by various governmental and local agencies. Training drills were held at the facility benefiting community emergency response teams and area hospitals.



## Caterpillar Mossville Engine Center Mossville

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**Caterpillar Mossville Engine Center** in Mossville produces medium size truck engines. In 2004, a cross-functional team worked to improve diesel engine First Test Acceptance (FTA) rates, which had fallen as a result of rapid design change to meet evolving EPA air emission requirements. Within about eight months, the team successfully



increased FTA rates by about eight percent by applying statistical tools and methodology to pinpoint quality issues and correct the issues at the source.

Any improvement in the number of engines that successfully pass engine testing on the first test eliminates the need for additional testing, which means less fuel is used and air emissions are reduced. By the end of 2004, projected air emissions from diesel fuel consumption dropped by over 10%, which includes tons of contaminants not being released into the environment. The reduction in tests per engine translates into over \$2.88 million annualized savings.



## Norco Cleaners Dolton

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**Norco Cleaners** in Dolton has been a family owned dry cleaning, laundry, and wet cleaning business since 1944. The company provides services to hotels, convention sites, commercial properties, schools, universities, and hospitals. Company officials decided to implement a new technology that would reduce emissions and consumption of solvents for dry cleaning. Norco converted to refrigerated coils for the evaporation of the petroleum solvents. In 2004, the amount of solvent savings and emission reductions compared to 2002 amounted to a 46.918% savings.



The cost of solvent was reduced by almost \$5,500 annually. Norco reduced the solvent fees and license fees to the minimum level through this process. The cost to fully replace the two reclamation units would have been close to \$70,000; whereas the conversion units installed by Norco employees cost \$14,000. In addition, Norco is replacing mercury-containing lights with newer, more environmentally friendly lights.

## **Electro-Motive Diesel, Inc. LaGrange**

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**Electro-Motive Diesel, Inc.** in LaGrange manufactures and rebuilds diesel engines and locomotive components. The facility generates a variety of waste materials from manufacturing and testing operations including used oils, cutting fluids, paint and solvents, concrete, pallets, scrap wood, cardboard, and paper. These materials are segregated and recycled using an Environmental Management System. The company has reduced the disposal of cutting fluids by 100,000 gallons per year at a savings of \$15,000. Product substitution in the cleaning of adhesives on engines reduced the amount of hazardous waste generated and disposed by 500 pounds and saved \$1,000 per year. The facility also reduced the amount of water used by some 3.6 million gallons, saving \$7,300 per year. Electro-Motive Diesel has increased recycling of wood pallets by 35%, cardboard recycling by 27%, scrap wood recycling by 15%, and used oil recycling by 58% in 2004 versus 2003. The facility is also investigating the use of ultrafiltration to reduce off-site cutting fluid disposal.



**ELECTRO-MOTIVE**



## ZF Sales & Service Vernon Hills

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**ZF Sales & Service** in Vernon Hills remanufactures drive train components such as transmissions, axles, gearboxes, and steering gears for trucks, buses, cars, and construction equipment. In 2004, ZF recovered and reused four out of every five pounds of material sent to the company. This avoided having over 1,500 tons of waste shipped to a recycler or to landfill. By analyzing its energy usage and implementing a series of changes, ZF reduced its electricity consumption from 200 kW to 100 kW. The company also went from a two-shift operation to a one-shift operation while increasing sales by 16%. The resulting electric savings will be over \$24,000 annually. ZF also modified its process to reduce zinc consumption by over 3,000 pounds annually and save over \$7,000. By exploring alternative chemical options, ZF has eliminated usage of 28 high-risk chemicals over the past two years. ZF also purchased its new office furniture from a remanufactured furniture provider, which saved over \$160,000 when compared to buying similar new furniture.



*Pollution is nothing but the  
resources we are not harvesting.  
We allow them to disperse  
because we've been ignorant of  
their value.*

**-- Buckminster Fuller**







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