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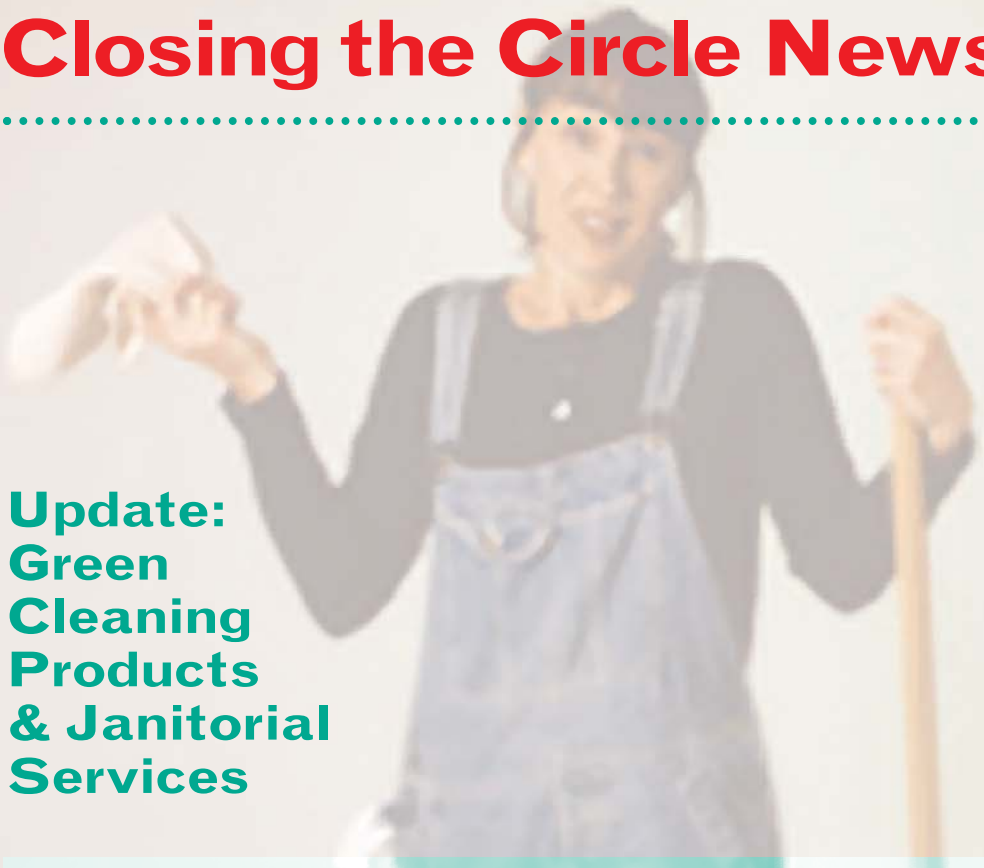
Closing the Circle News

Inside



Update: Green Cleaning Products & Janitorial Services

One thing that is common to nearly all aspects of our lives – where we live, work, learn, and play – is that those facilities must be cleaned on a regular basis to ensure a healthy and safe environment. Unlike the experiences of our forefathers where water, soap, and a little elbow grease was all, our society now uses a myriad of cleaners with all sorts of applications. These cleaning chemicals range from relatively harmless, over the counter household cleaners to rather strong, industrial strength cleaners. And nearly all of these chemicals introduce an impact to the environment and to human health. With that comes opportunity for improvements.

This issue is dedicated to highlighting efforts regarding green cleaning. The green cleaning movement is an effort to change the industry towards more environmentally sound and safer products. From those individuals who do the cleaning as their jobs, to the casual user, to the actual occupants of the cleaned facilities, there is exposure to the cleaning chemicals. What an excellent opportunity to affect a market that touches nearly every American's lives in a way that leads to a cleaner environment, and healthier lifestyle.

In this issue, we provide an update on several of the activities we featured in the Fall 2003 issue of Closing the Circle News. These include Green Seal's on-going efforts to create specifications for green cleaning and the Navy's evaluation of greener cleaning products for use on its surface ships. We also focus on efforts to use new products, such as biobased cleaners, and to new partners in the green cleaning movement. We feature the efforts by two Air Force bases to find biobased cleaners for industrial areas – and their success in finding products that meet their performance needs, save money, and are better for human health and the environment! In addition, EPA's Design for the Environment program is helping cleaning product formulators to make their products less harmful to human health and the environment. And the American Federation of Teachers is promoting the use of green cleaning products to improve the indoor air quality in America's schools. Finally, the U.S. Green Building Council's new Leadership in Energy and Environmental Design-Existing Buildings standard promotes the use of green cleaning products and techniques in order to improve indoor air quality.

Federal Environmental Executive

A Clean Sweep

Purchasers Are Buying Safer, Effective, and Affordable Commercial Cleaning Chemicals

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Purchasers across the country are carefully examining the cleaning products they buy because cleaning can be a very dirty business. One out of every three commercial cleaning chemical products contains ingredients known to cause human health or environmental problems. [1] The institutional cleaning industry alone uses five billion pounds of chemicals a year, many of which can cause serious health problems for office workers, students and teachers, patients and healthcare professionals, other building occupants, and janitorial workers. [2] These chemicals also contribute to air and water pollution.

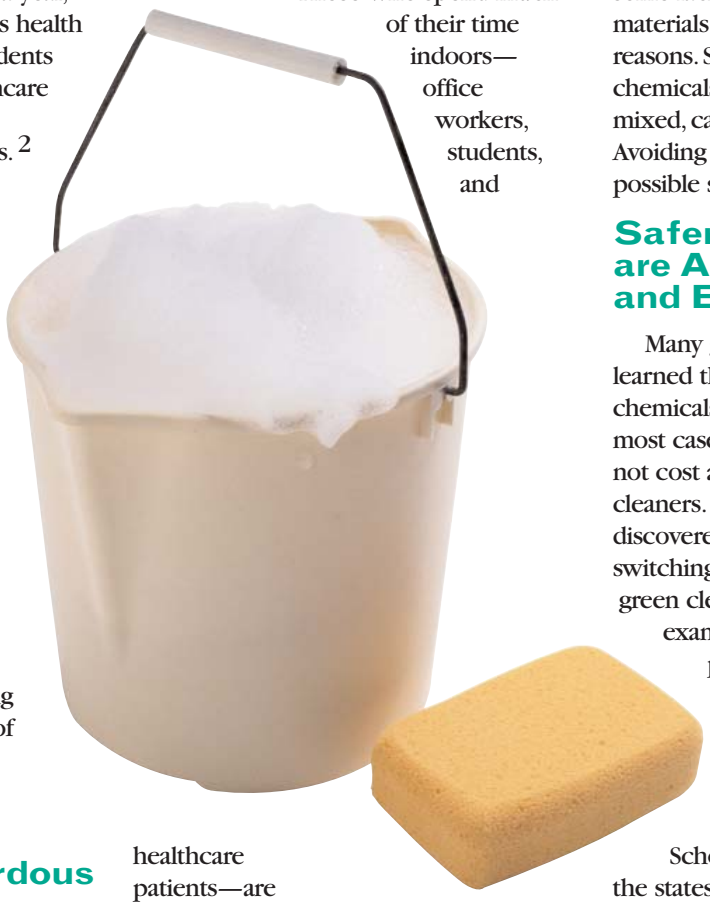
Luckily, as many government purchasers have discovered, safer "green" cleaning products are commercially available. They work just as well or better than traditional products. They do not cost any more. They are also readily available and easy to locate.

As a result, purchasers are taking steps to protect their health, the health of their co-workers, and the environment. They are specifying green cleaners whether they are buying the products directly or as part of a broader janitorial services or facilities maintenance contract.

Many Traditional Cleaners are Hazardous

Public and private sector purchasers now recognize that traditional cleaning products can contain harmful chemicals that can cause cancer, reproductive disorders, major organ damage, and permanent eye damage. Other common health problems associated with cleaning chemicals include asthma and other respiratory ailments, headaches, dizziness, and fatigue. [3]

Cleaning chemicals are also routinely washed down the drain where they find their way into drinking water, lakes, and streams, adversely affecting plant and animal life and threatening public health. In addition, cleaning products are responsible for approximately eight percent of total non-vehicular emissions of volatile organic compounds (VOCs), which can trigger respiratory problems such as asthma, contribute to smog formation, and inhibit plant growth. [5]



Those who spend much of their time indoors—office workers, students, and healthcare patients—are particularly susceptible to health problems caused by cleaning chemicals. The three million janitors who keep the country's buildings clean also experience unnecessarily high injury rates with 6 out of every 100 injured because of the chemicals they are using. [6]

Switching to safer cleaners can significantly increase indoor air quality, reduce cleaning-related health problems and absenteeism and increase productivity and morale. [7] Green cleaners can also reduce negative environmental effects. Santa Monica, a small resort community in Southern California, for example, eliminated 3,200 pounds of hazardous materials by replacing traditional cleaning products with safer alternatives. [8]

While reducing hazardous materials is important for environmental reasons, some facilities are reducing use of such materials for more immediate security reasons. Some traditional cleaning chemicals are flammable and, when mixed, can produce deadly gases. Avoiding such products eliminates a possible safety threat.

Safer Cleaners are Affordable and Effective

Many government purchasers have learned that switching to safer cleaning chemicals is a smart financial decision. In most cases, green cleaning products do not cost any more than traditional cleaners. Some governments have even discovered significant cost savings by switching from traditional cleaners to green cleaners. [9] Santa Monica, for example, documented a five percent price savings after its switch to safer cleaners. Other public purchasers, including the U.S. Department of Interior (including several National Parks), the Chicago Public School System, Seattle, Washington, the states of Illinois, Massachusetts, Minnesota, Missouri, Pennsylvania, and Vermont, and Sarasota County, Florida, and Alameda County, California, also report that safer cleaners are cost competitive.

Using green cleaning chemicals can actually produce additional savings when other benefits are taken into account. According to one study cited by government purchasers, using safer cleaning products, in addition to better ventilation and cleaning, could improve worker productivity by between 0.5 > >

> > percent and 5 percent – an annual productivity gain of $30 billion to $150 billion. Others are hopeful switching to safer cleaners will help reduce the more than $75 million a year U.S. institutions spend on medical expenses and lost time wages for janitors due to chemical-related injuries. [11]

End users report that the safer cleaners also match or exceed their traditional counterparts when it comes to performance. In numerous independent laboratory tests conducted on behalf of a group of large purchasers, all of the safer products bought by the group work as well or better than traditional cleaners. Santa Monica, the Chicago Public School System, and others have repeated these results in controlled on-site evaluations. Products certified by Green Seal, a U.S. standard setting and environmental labeling organization, are required to pass stringent performance standards in addition to strict environmental and human health criteria. [12]

Many purchasing professionals and end users, however, recognize that any product change—whether from one traditional product to another or from a traditional product to a "green" product—might require some changes in the way products are used. Some cleaners, for example, work more effectively if they are sprayed directly on the surface being cleaned while others work better if they are sprayed on a cleaning cloth first. As a result, the purchasing criteria used by many government agencies include a preference for companies that provide on-site training in the proper use of their products.

Specifying Safer Cleaners

Given the health, environmental, and financial benefits of safer cleaning products, their use is increasing rapidly. Until recently, it could be difficult to identify the safer products. Thanks to consensus-based criteria developed by a national work group of state and local government purchasers representing more than $15 million in annual cleaning product purchases and the work of many green cleaning advocates, finding green cleaning products is easier than ever.

The nationwide work group, which was coordinated by the Center for a New American Dream and funded by the U.S. Environmental Protection Agency, included some of the early pioneers who first attempted to define and purchase safer cleaning products, including: Massachusetts; Santa Monica, California; King County, Washington; Minnesota; and the Pacific Northwest National Laboratory. The work group set out to identify standards that addressed toxicity; carcinogens and reproductive toxins; skin and eye irritation; skin sensitization; combustibility; smog, ozone, and indoor air quality; aquatic toxicity; eutrophication; aquatic biodegradability; concentrates; fragrances; and prohibited chemicals.

The work group examined many existing standards and considered developing its own before deciding > >

Green Cleaning is More than Green Chemicals

Given the significant environmental and human health hazards associated with cleaning chemicals, it is understandable that many purchasers focus first on the cleaning chemicals. According to Steve Ashkin and other green cleaning experts, the chemicals are only part of the story. Other factors include cleaning equipment, cleaning protocols, and employee training.

Employee training is especially important, according to Mr. Ashkin, because 90 percent of a cleaning budget is labor costs with only 2 to 5 percent related to chemical costs. If the workers are not using the products properly (whether they are green products or not), facilities could be spending more than necessary. Santa Monica, California, recognized the importance of well trained cleaning employees in its most recent cleaning contract. Employee training and support proved the determining factor in awarding the contract.

Other governments also recognize the importance of looking beyond the cleaning chemicals. Pennsylvania's Guidelines for Green Building Housekeeping and Maintenance, for example, emphasizes the importance of placing doormats at entryways to reduce the amount of dirt entering a building. It encourages the use of microfiber mops and cloths that reduce the need for cleaning chemicals. It also promotes the use of HEPA-filtered vacuum cleaners to reduce air-borne particulates.

Purchasers are also modifying facilities maintenance contract language to move away from strict schedules for certain highly polluting cleaning activities such as floor stripping. Instead, purchasers are moving towards performance-based language that requires floors to be stripped only when needed based on objective criteria that are agreed to by both the facility manager and the cleaning company.

In addition, the Resources Recovery and Conservation Act (RCRA) already requires federal agencies and other entities using federal funds to buy recycled-content products, including such janitorial supplies as paper towels, tissue, and trash bags. The U.S. Environmental Protection Agency's Comprehensive Procurement Guidelines (CPG) program recommends recycled-content percentages for these and other products on its website at http://www.epa.gov/cpg . ■

> > that Green Seal's standard for environmentally preferable institutional cleaners (GS-37) met their needs. Because at the time Green Seal's standard only covered general-purpose, bathroom, and glass cleaners, the work group extrapolated GS-37 to cover additional cleaners such as carpet cleaners, disinfectants, floor care, and hand soaps. Green Seal is currently expanding its standard to include many of these additional products, which will make it even easier for facilities to find them.

The specification developed by the work group has already been used successfully by Massachusetts, Santa Monica, and Sarasota County, Florida. Other governments are currently incorporating the specification into future solicitations. Given the success of the specification some purchasers are referencing the list of "approved" products that has been developed based on products meeting the specification. Alameda County, California, for example, recently requested products meeting the "National Consensus-Based Standard (NCBS)" and referred bidders to the list of approved products. A copy of the consensus specification and a list of products known to meet it are available at http://www.newdream.org/clean .

Other purchasers are further simplifying the bid evaluation process by requiring all products to demonstrate that they meet the requirements of the Green Seal GS-37 standard. This approach is working successfully for Connecticut, Pennsylvania, Missouri, Illinois, and others. With Green Seal's new floor care standard under development, it will soon be even easier to specify a broad range of greener cleaning chemicals.

Review Product Claims Carefully

As more suppliers recognize the opportunities presented by the green cleaning market, purchasers need to carefully review all product claims. Use the following questions to assess environmental claims:

- **Ask for a copy of the standard they are using.** Does the meaning of the standard appear clear, consistent, and thorough? Does it clearly identify specific human health and environmental concerns? Does it specify detailed testing protocols to be used to determine the safety of the products being certified? How does it compare with other reputable standards?
- **Ask about the standard setting process.** Was the standard developed by an independent third-party or by the company? Who paid to have the standard developed? How many organizations were involved in its development? Was the public invited to participate and comment throughout the standard development process? Are copies of all stakeholder comments along with the standard-setting organization's response to those comments publicly available?
- **Ask about the verification process.** What process must companies use to prove their products meet the standard? Are companies allowed to self-certify their products or are they required to use an independent third-party to determine if the products meet the standard? Does the verification process include just a review of product information or does it require an on-site visit by the certifying organization?

Closing Thoughts

It is a rare opportunity when it is possible to simultaneously remain fiscally responsible, protect the health of office workers, students, patients, and employees, and preserve the environment. Switching to safer cleaning chemicals provides just such an opportunity. The safer products are better for human health and the environment. They work just as effectively as traditional products and they do not cost any more. It has never been so easy to do the right thing and clearly demonstrate the value of the purchasing profession. ■

About the Author

Scot Case is the Director of Procurement Strategies at the Center for a New American Dream where he helps institutional purchasers buy less polluting products from less polluting companies. For additional information, visit http://www.newdream.org/procure or e-mail Scot at scot@newdream.org .

1 Janitorial Products Pollution Prevention Program. Cleaning Chemical Injuries Fact Sheet. Available at http://www.wrppn.org/Janitorial/Be%20Healthy%200.pdf .

2 Ashkin, Steve. Personal communication, August 4, 2004.

3 Culver, Alicia et al. "Cleaning for Health: Products and Practices for a Safer Indoor Environment." INFORM, Inc.: 2002; U.S. EPA. "Targeting Indoor Air Pollution: EPA's Approach and Progress." March 1993. Available online at http://www.epa.gov/iaq/pubs/targetng.html .

4 U.S. EPA. "Greening You Purchase of Cleaning Products." May 2003. Available online at http://www.epa.gov/oppt/epp/documents/clean/cleaning1.htm .

5 U.S. EPA "Green Cleaning Products Outshine the Competition." EPP Update. April 2000. Available online at http://www.epa.gov/oppt/epp/pubs/update6.pdf .

6 Culver, Alicia et al. "Cleaning for Health: Products and Practices for a Safer Indoor Environment." INFORM, Inc.: 2002.

7 William Fisk and Arthur Rosenfeld, "Improved Productivity and Health from Better Indoor Environments," Center for Building Science Newsletter (now the Environmental Energy Technologies Newsletter), Lawrence Berkeley Labs, Summer 1997, 5, http://eetd.lbl.gov/cbs/newsletter/NL15/productivity.html ; EPP Update. April 2000. Available online at http://www.epa.gov/oppt/epp/pubs/update6.pdf .

Using Green Cleaning to Improve Schools' Indoor Air Quality

Cleaning is becoming a major concern in schools and school districts because the constituents of cleaning products can pose health risks to the children, the teachers, the administration, the custodial staff, and the environment. In an attempt to change the current methods of cleaning, the American Federation of Teachers (AFT) is looking at green cleaning products, equipment, and methods to use in schools. Through a cooperative agreement with the U.S. Environmental Protection Agency's "Tools For Schools" program, AFT is implementing a pilot green cleaning program in an Alabama school district and recommended the use of green cleaners in three other districts piloting indoor air quality projects.

The Jefferson County Board of Education in Birmingham, Alabama became interested in indoor air quality after a roofing project at one of its schools caused severe respiratory ailments. The roof was tarred and insulated while school was in session, leading to the respiratory problems and the closing of the school by Alabama's Governor. The school district, with the help of the local AFT, then adopted the "Tools for Schools" program, to ensure that this would never happen again. The school has now reopened and the Board of Education has currently adopted indoor environmental quality "best practices" district-wide. With the assistance of the AFT, the school district formed an Indoor Air Quality Committee to improve the indoor air quality in the schools in throughout the district.

The IAQ Committee's recommended best practices including the use of green cleaning products. The committee looked at Green Seal's GS-37 standard for institutional cleaners as well as other standards, such as the standards used by the State of Massachusetts and the City of Santa Monica, California. From these standards, the committee compiled a list of standards that would be used to purchase cleaners and equipment. Nine schools from the Jefferson County School District will participate in a pilot program where green cleaning will be implemented into the schools' practices. The AFT and the school district are hoping to implement green cleaning practices district wide by next year.

The AFT represents custodial staff as well as teachers and other educational employees. The Occupational Safety and Health Administration (OSHA) recently gave AFT a grant to make people more aware of safer chemicals, less toxic materials, green cleaners, and safer equipment. The AFT provided train-the-trainer training to 75 custodial maintenance workers in OSHA state-plan states on OSHA standards and Best Practices. The training addressed green cleaning products and practices as an alternative to the currently used cleaning practices. These custodial maintenance workers, in turn, will train custodial staff, administrators, purchasers and teachers in their districts about green cleaning products and processes.

AFT also is taking active steps to implement green cleaning in its own building. Steve Ashkin, of The Ashkin Group – a nationally recognized expert in green cleaning – convinced the building's owner to use various green cleaning products and to train its cleaning staff to use the products properly. Currently, Green Seal certified products are being used to clean the building. Additionally, some of the cleaning equipment and processes have been changed to be those that are more environmentally preferred. These practices include using micro-fiber mops and vacuums with high efficiency particulate air (HEPA) filters.

AFT is taking it one step at a time but is excited about the pilot programs in the four school districts and its own implementation of green cleaners. For more information, contact Darryl Alexander, Program Director, AFT Health and Safety, at dalexand@aft.org or 202-393-5674. ■

8 U.S. EPA. "The City of Santa Monica's Environmental Purchasing: A Case Study." March 1998. Available online at http://www.pestinfo.ca/documents/santamonica.pdf ; U.S. EPA "Green Cleaning Products Outshine the Competition." EPP Update. April 2000. Available online at http://www.epa.gov/oppt/epp/pubs/update6.pdf .

9 U.S. EPA. "The City of Santa Monica's Environmental Purchasing: A Case Study." March 1998. Available online at http://www.pestinfo.ca/documents/santamonica.pdf ; U.S. EPA "Green Cleaning Products Outshine the Competition." EPP Update. April 2000. Available online at www.epa.gov/oppt/epp/pubs/update6.pdf.

10 William Fisk and Arthur Rosenfeld, "Improved Productivity and Health from Better Indoor Environments," Center for Building Science Newsletter (now the Environmental Energy Technologies Newsletter), Lawrence Berkeley Labs, Summer 1997, 5, http://eetd.lbl.gov/cbs/newsletter/NL15/productivity.html .

11 Janitorial Products Pollution Prevention Project. "How to Select and Use Safe Janitorial Chemicals." U.S. EPA Region X, California EPA, And County of Santa Clara: December 1999. Available online at http://www.wrppn.org/Janitorial/05%20Report.pdf .

12 Commonwealth of Massachusetts. Request for Response for Environmentally Preferable Cleaning Products (RFR #GR016). Awarded April 2003. Available online at http://www.newdream.org/procure/products/MassRFP.pdf .

Update – Cleaning Green at Sea

In 2003, in an effort to reduce its usage of toxic and hazardous chemicals and to implement greener cleaning, the U.S. Navy developed a mandatory catalog of authorized shipboard chemical cleaning products, precautions, containment requirements, and authorized dispensing systems for its surface ships. The project team drafted ten Technical Purchasing Descriptions (TPDs) covering such information as materials and their composition, prohibited material/chemicals, relative toxicity, aquatic toxicity, biodegradability, pH, regulatory requirements, and cleaning performance. The TPDs covered nine categories of cleaners and a single category of dispensing systems.

A year later, the Navy is still taking active steps in enforcing and updating its green cleaning requirements. On September 30, 2004, the Navy issued a revised catalog to all of its surface ships. This updated catalog now contains thirteen TPD categories — twelve for cleaners and one for dispensing systems. The catalog was expanded to include requirements for dishwashing products, miscellaneous cleaners, and hand cleaners. It also contains an updated list of products that can be used on the surface ships. This list includes the suppliers' contact information, product name, precautions (such as aquatic toxicity, hazardous material, or corrosive), and type of dispensing system to be used. An online version of this catalog is available on the GSA Advantage Website: http://www.gsaadvantage.gov under Authorized Shipboard Cleaning Products and Dispensers. It is also available on the Navy Shipboard Environmental Information Clearinghouse (Navy SEIC) website: http://navyseic.dt.navy.mil .

While the Navy has not targeted specific chemical constituents, it has tried to minimize the use of APEs (Alkylphenol ethoxylates) in cleaners as recommended by EPA. One of the machinery and bilge cleaners is an APE and is compatible with the ship's oil/water separators, whereas other cleaners may cause an emulsion with the oil and water and adversely affect the oil/water separator. The Navy is seeking an alternative product without APEs that is compatible with the oil/water separators and is developing a test protocol for this application.

For more information, contact: Brooke Cipriano ciprianob@nswccd.navy.mil . ■

The USS Hamilton is just one of the Navy's 209 surface ships that now will use environmentally preferable cleaning products.

Biobased Cleaning Products Take Flight

Both Seymour Johnson Air Force Base, NC, and Pope Air Force Base, NC, found that they can achieve their performance needs, reduce environmental hazards, and save money by switching to biobased cleaning products.

Under the Farm Security and Rural Investment Act of 2002, the U.S. Department of Agriculture will designate biobased products for Federal agencies to purchase. Until USDA designates products, OFEE and the Office of Federal Procurement Policy have encouraged agencies to buy and test biobased products to see if they meet the agencies' needs. That is exactly what Seymour Johnson and Pope Air Force Bases did.

Seymour Johnson AFB Buys Biobased and Reduces Water Contaminants

In response to the local wastewater treatment plant's problems with high phosphate concentrations and imbalanced pH levels, Seymour Johnson's Pollution Prevention Section evaluated processes throughout the installation that could be contributing to the plant's problems. It was determined that detergents being used in numerous commercial floor scrubbers were a contributing factor.

The Pollution Prevention Section challenged the base's existing vendors to formulate a biobased detergent that was low in phosphates, had a neutral pH, was aggressive cleaning, and was competitively priced. Two vendors accepted the challenge and supplied a soy-based detergent. The detergent was tested in four shops: golf course maintenance and golf cart storage facilities, supply warehouse, Jet Engine Shop, and an aircraft hangar. Most of these shops needed to remove oils and greases.

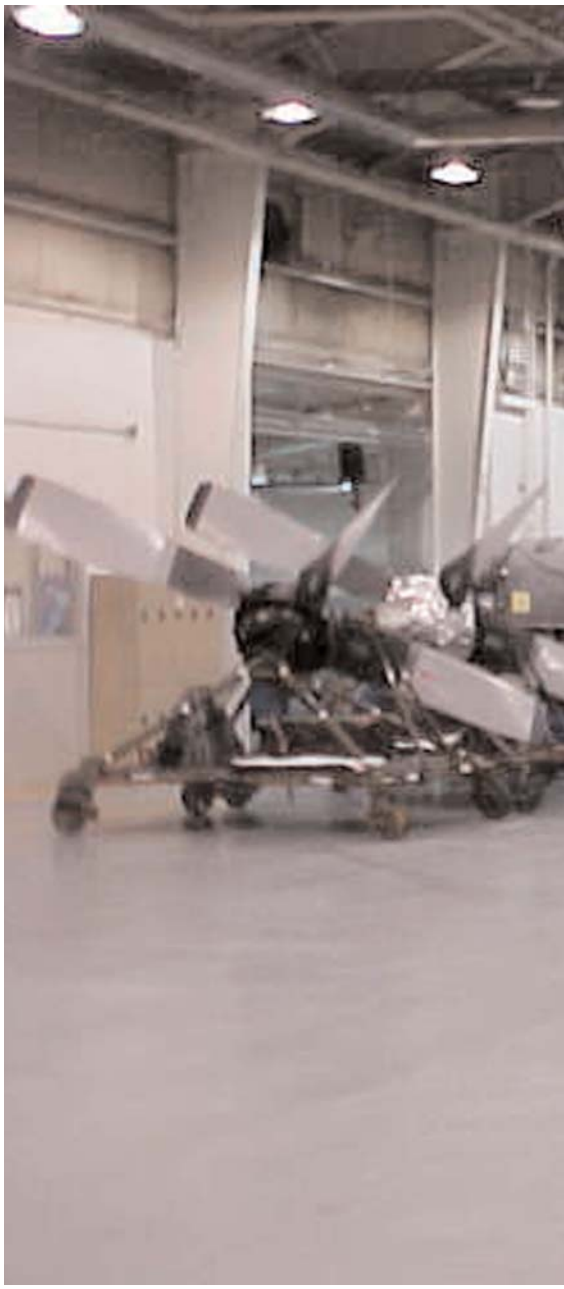
The staff in each shop used the biobased mixture in the same way as before – same frequency of cleaning, comparable mixture concentrations, and same performance. After a two-month test, the results were outstanding! Phosphate levels at the aircraft hangar dropped by 97 percent, the pH levels from each shop were consistently in the neutral range, and with the exception of the Jet Engine Shop, everyone was pleased with the performance of the products. (The Jet Engine Shop found that it needed to buff its floors after cleaning in order to achieve the same level of appearance.) And the product cost $4 - $6/gallon, compared to an average of $6 - $8/gallon for the chemical mixture.

In 2004, the Pollution Prevention Section began an awareness, education, and promotion program to encourage users to switch to the biobased cleaners. By the end of 2004, shop personnel had purchased more than 3,000 gallons of biobased detergents at a savings to the base of $12,000.

For more information, contact: Emilee Blount, emilee.blount@seymourjohnson.af.mil , 919-722-5168, or Brian Joyner, brian.joyner@seymourjohnson.af.mil , 919-722-7446.

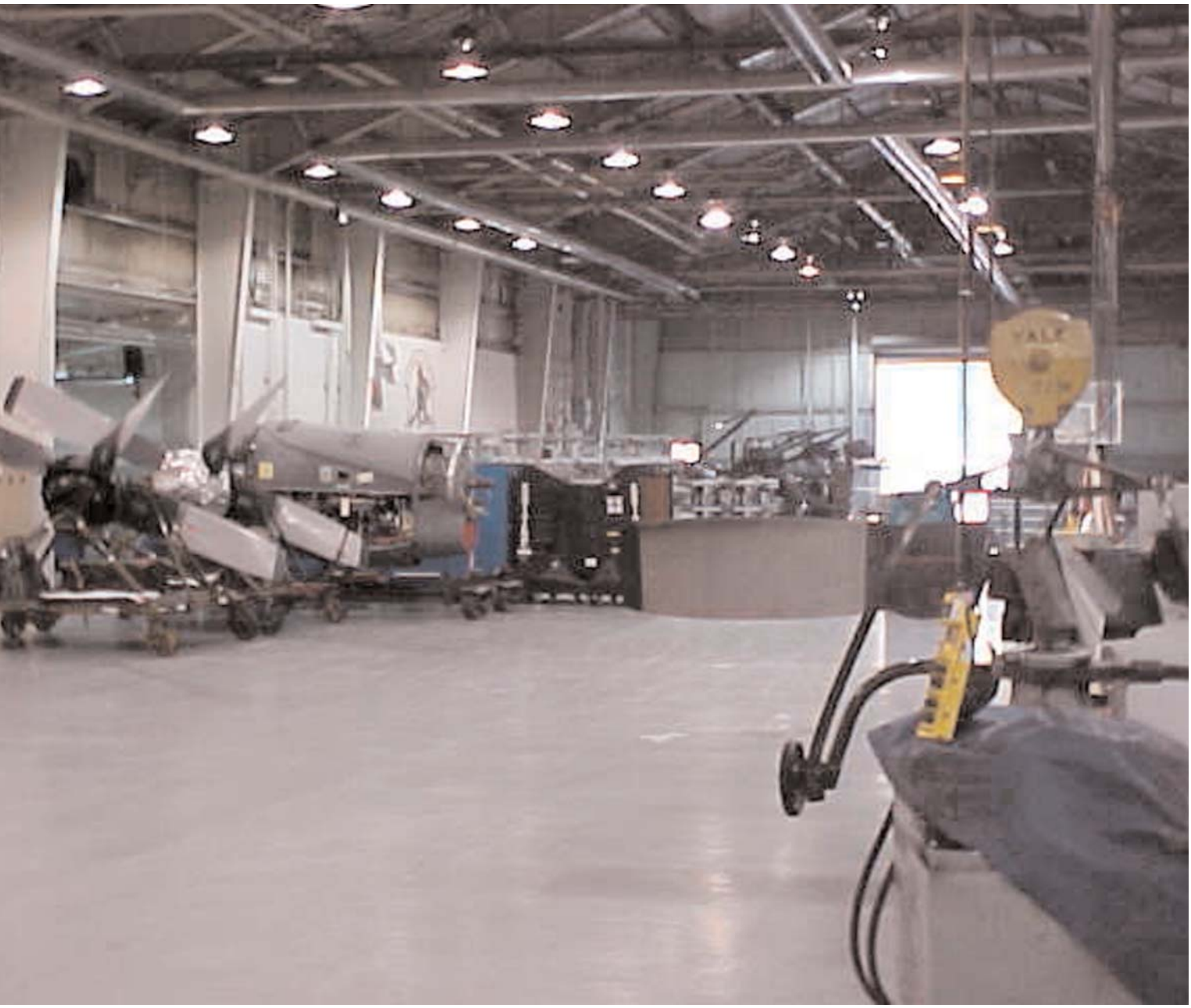
Pope Air Force Base Reduces Occupational Exposure With Biobased Cleaners

Like Seymour Johnson AFB, Pope AFB sought alternative cleaning products for its Aerospace Ground Equipment Main shop and Propulsion shop in order to reduce pH levels. Where Seymour Johnson AFB's search was triggered by problems at the local wastewater treatment plant, Pope AFB's search was triggered by concerns about employees' exposure to cleaners with high pH levels. Pope AFB also sought products that would be solvent-free, compatible with its oil/water separators, and left its shop floors slip-free. > >



The Maintenance Group's environmental coordinator contacted several vendors of biobased, enzymatic products. Three vendors demonstrated their products at the Aerospace Ground Equipment and Propulsion shops over a period of months. One product, MicroBeast™, was then selected for trial. (MicroBeast is repackaged by a local small business from a product known as BioRem2000.) As with the Seymour Johnson AFB trial, the product was used with the standard procedures and equipment – in this case, mops and buckets, floor scrubbers, and pump bottles for table top cleaning. Not only did the biobased product perform well in cleaning up spills of hydraulic fluids and engine oils, it removed the bulk of the oils within the components of the floor scrubbers! The maintenance staff concluded that the product met their performance needs and the environmental qualifications: it is non-toxic, water based, has a nearly neutral pH, and is compatible with the base oil/water separators. The base estimates that the cost per gallon is a mere 90 cents!

For more information about Pope AFB's use of biobased cleaners and other biobased products, contact: Msgt Peter Muzio, peter.muzio@pope.af.mil, 910-394-5074. ■



Greener Cleaning Products by Design

Design for the Environment (DfE) is an Environmental Protection Agency partnership program dedicated to finding products that reduce the risks and costs to human health and the environment. The DfE program works with individual industry sectors to compare and improve the performance and human health and environmental risks and costs of existing and alternative products, processes, and practices. The formulator sector, for example, is learning more about the effect that chemical ingredients and byproducts may have on the quality of aquatic life and the environment, the biodegradability of waste streams, and worker health and safety.

The DfE program is complementary to the efforts by government purchasers and third party standard-setting organizations to define environmentally preferable cleaning products. DfE's formulator initiative focuses on the formulator process in addition to how the product works and how it affects the surrounding environment while in use. According to its web site, the DfE program believes that the redesign of chemical products offers three important opportunities:

- Remove pollutants from formulations before they can enter the workplace and the environment.
- Multiply environmental and health benefits through the use of reformulated products at many businesses and homes.
- Advance energy and water efficiency, resource conservation, and innovative technologies.

An increasing number of companies are going to DfE for assistance in producing environmentally preferable cleaning products. DfE chemists and scientists look at individual chemicals used in products and the structures of the chemicals to make sure that they are not harmful to people or the environment while in use or long after use. The DfE scientists also make sure that each chemical component can be used with the other chemicals or components, without becoming a toxic component. Not only do the scientists look at what the chemical is but also at what it becomes. They make sure that the chemical components, including solvents and surfactants, will biodegrade to non-polluting byproducts.

In the case of cleaning products, the DfE program is looking for improved or sustainable alternatives to the chemicals commonly used, such as zinc and other metals, formaldehyde, ammonia, alkylphenol ethoxylates, perfluorooctanoic acid, ethylene glycol, volatile organic compounds, plasticizers, solvents, and preservatives. The program also is looking for alternatives to ingredients that are toxic to aquatic life or harmful to human health and to decrease product corrosivity by reducing pH.

The partnering company submits a confidential list of the ingredients it would like to use in a product. DfE profiles all the product ingredients and recommends safer substitutes for chemicals of potential concern. The company reformulates the product and signs a Memorandum of Understanding with EPA declaring that the company will produce the cleaning product with the ingredients that the DfE program found to be the least harmful to human health and the environment. After pledging that the ingredients in the product are those that DfE recommended, the company is then able to put the DfE logo on its products. The DfE logo indicates that each ingredient in the product has been screened by the DfE scientists and researchers for potential environmental and human health effects and that the product contains only those ingredients that pose the least concern among chemicals in their class.

To date, DfE has reviewed and recognized the industrial and institutional cleaning products from eleven companies (over 50 products) and institutional and industrial laundry detergents from seven companies (14 products).

Further information on DfE and the formulator initiative can be found at http://www.epa.gov/dfe . ■

Green Seal Expands Standards for Green Cleaning Products to Floor Strippers/Finishes

Following on the success of its standard for industrial and institutional cleaners that minimize adverse environmental and health impacts, Green Seal developed a separate standard for floor care finishes and strippers. Green Seal recently proposed and released GS-40, Industrial & Institutional Floor-Care Products. This standard defines a floor finish as "as any product designed to polish, protect, or enhance floor surfaces by leaving a protective wax, polymer, or resin coating that is designed to be periodically removed" and a floor stripper as a product designed "to remove floor finish through breakdown of the polymers, or by dissolving or emulsifying the finish, polish or wax." These two types of products need to be designed to work together and, therefore, need to be compatible.

The June 2004 edition of Green Seal's *Choose Green Report* discussed the potential negative effects on human health and the environment of commonly used floor-care products. It recommended that floor finishes and floor strippers not contain:

- Volatile organic compounds exceeding 7 percent
- Akylphenol ethoxylate surfactants
- Dibutyl phthalate
- Ammonia
- Ethylene glycol monomethyl ether
- Ethylene glycol monoethyl ether
- Total phosphorous concentrations over 0.5 percent by weight
- 2-Butoxy ethanol

It is also recommended that floor finishes not contain zinc and floor strippers have a pH lower than 11.5.

The new standard, GS- 40, incorporates these recommendations by establishing 15 product-specific health and environmental requirements:

- Toxic compounds
- Carcinogens, mutagens and reproductive toxins
- Corrosiveness
- Skin sensitization
- Flammability
- Air quality (VOC content)
- Toxicity to aquatic life
- Eutrophication (phosphates and phosphonates)
- Aquatic biodegradability
- Packaging
- Prohibited ingredients (Alkylphenol ethoxylates, phthalates, optical brighteners, ozone- depleting compounds, zinc or other heavy metals, including arsenic, lead, cadmium, cobalt, chromium, mercury, nickel, and selenium.)
- Training
- Labeling
- Fragrances
- Animal testing

The GS-40 standard takes health, environmental, and performance concerns into consideration. It includes performance requirements that require products to be slip resistant, removable, soil resistant, and detergent resistant.

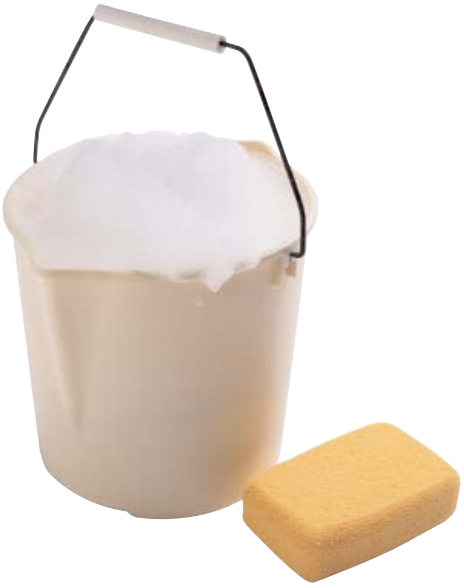
Green Seal is also currently in the preliminary stages of creating a separate list of standards for disinfectants. The GS-37 standard only covers registered disinfectants used in bathroom cleaners. Green Seal is hoping that in the near future it will be able to develop standards for a large spectrum of disinfectants. Green Seal also proposed a revision to the GS-37 standard to include carpet cleaners. These projects are still pending due to funding and research, but Green Seal hopes to release these new standards in the near future.

A complete list of Green Seal-certified cleaning products, further information concerning Green Seal floor care standards, and other Green Seal standards can be found at http://www.greenseal.org . ■

Green Seal Recommended Floor Finishes and Floor Strippers

The following products meet the recommendations in Green Seal's Choose Green Report for environmentally preferable floor finishes or floor strippers. Green Seal is in the process of qualifying products to the GS-40 standard.

Manufacturer	Product Names
Enviro Solutions 800-864-6843 http://www.enviro-solution.com	High Gloss Finish #80 High Traffic Floor Finish #96 ES-85 Scrub Free Floor Stripper
Fuller Brush 800-551-3030 http://www.fuller.com	T.E.T. Power Stripper
Hillyard Industries 800-365-1555 http://www.hillyard.com	Super Hil-Brite
JohnsonDiversey, Inc. 800-558-2332 UHS http://www.johnsondiversey.com	Butcher's Neon Floor Finish Johnson Wax Professional ZF1500+ Floor Finish
M.D. Stetson 800-255-8651 http://www.mdstetson.com	Transcend Floor Finish EPS (Environmentally Preferable Stripper)
Orison Marketing, LLC 800-460-2403 http://www.orisonllc.com	Eco Natural Floor Stripper
Pioneer Eclipse Corporation 800-367-3350 http://www.pioneer-eclipse.com	EnviroStar Green Floor Coating EnviroStar Green Floor Stripper
Rochester Midland 800-836-1627 http://www.rochestermidland.com	EC Resilient Tile Coating EC Floor Finish Remover
Spartan Chemical Company 800-537-8990 http://www.green-solution.com	Green Solutions Floor Seal & Finish



Resources Update

Healthcare Environmental Resource Center to Include Green Cleaning

The U.S. Environmental Protection Agency sponsors partnerships with industry, academic institutions, and other groups to establish compliance assistance centers. The Healthcare Environmental Resource Center provides pollution prevention and compliance assistance information for the health care sector. This includes information on alternatives to mercury, which can be found at http://www.hercenter.org/hazmat/mercury.html#alternatives . In the future, the center will provide information on cleaning chemicals, sterilants, and disinfectants. ■

Scoring Points For Green Cleaning

The U.S. Green Building Council's (USGBC) latest standards in the LEED (Leadership in Energy and Environmental Design) Green Building Rating System® is LEED for Existing Buildings (LEED-EB) – a set of performance standards for the sustainable operation and maintenance of existing buildings. The LEED-EB criteria cover building operations and system upgrades in existing buildings where the majority of interior or exterior surfaces remain unchanged. It allocates various points to buildings based on their performance in regards to the LEED-EB categories. Its elements also include whole-building cleaning, maintenance issues, and ongoing indoor air quality.

Green cleaning can receive a maximum of nine points: up to three points for the purchase of green cleaning products and up to six points for green-cleaning related policies and procedures. LEED-EB references Green Seal's GS-37 standard for institutional and industrial cleaners or, for products for which GS-37 does not apply, the State of California's regulations on maximum allowable VOC levels. LEED-EB also allocates points for the use of recycled content disposable janitorial paper products and trash bags meeting EPA's recycled content product recommendations.

More information on LEED-EB can be found on the USGBC web site: http://www.usgbc.org . ■

Example of LEED-EB Green Cleaning Policy or Procedure

Green Cleaning: Entryway Systems (1 Point)

Intent:

Reduce exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particle contaminants, which adversely impact air quality, health, building finishes, building systems, the environment and reduced deposition of contaminants in the buildings.

Requirements:

Utilize over the performance period entryway systems (grills, grates, mats etc.) to reduce the amount of dirt, dust, pollen and other particles entering the building at all entryways, and develop the associated cleaning strategies to maintain those entryway systems, as well as the exterior walkways.

Office of the Federal Environmental Executive

White House Task Force on Waste Prevention and Recycling

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This issue of *Closing the Circle News* was written primarily by Stacey Gardner, who interned with OFEE in the fall of 2004.