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. ■