

## Encouraging Environmental Excellence – Silver Level Award

# Wright-Patterson Air Force Base Environmental Branch

In 2013, Wright-Patterson Air Force Base received an Ohio EPA Encouraging Environmental Excellence Silver Level Award. The silver level recognizes businesses and others that have a good environmental compliance record and have completed environmental stewardship activities. The silver level is open to any business, industry, trade association, professional organization or local government of Ohio.

Wright Patterson Air Force Base (WPAFB) encompasses 8,145 acres in southwest Ohio near Dayton. It is the headquarters for the Air Force Material Command which oversees the Air Force's worldwide logistics, as well as The Air Force Research Laboratory; Wright Research Site; Air Force Institute of Technology; WPAFB Medical Center, the National Air and Space Intelligence Center; and National Museum of the United States Air Force. Base operating support is provided by the 88 Air Base Wing (88 ABW).

Due to its organizationally complex and expansive nature, environmental stewardship at WPAFB is of high importance. Environmental activities are primarily managed and overseen by the Environmental Branch (CEAN) that serves as the central point of contact for environmental management and ensures that all environmental work on WPAFB is conducted in accordance with all applicable federal, state and local regulations.

### Recycling Program

WPAFB instituted a recycling working group to exchange information, propose, develop, and review policy and implement procedures for all aspects of recycling. WPAFB recycling program continues to support AFIT, local schools, and the base populace by providing tours of the recycling center. The program includes training sessions at commander calls across the installation to brief employees on items the recycling center accepts, including household items at the four curbside drop-off areas conveniently located across WPAFB.

The recycling program diverted 1,794.90 tons of solid waste to recycling in 2011. Additionally, 773.27 tons of solid waste was composted at an off-base facility, 12 tons of solid waste was composted through vermiculture composting located at the base recycling center.

A ceiling tile recycling program was established in November 2003 when WPAFB entered into a partnership with Armstrong World Industries located in Lancaster, PA. Contractors remove the ceiling tiles and stack them neatly for



### Wright-Patterson Air Force Base is recognized for:

- Addressing all aspects of products and services that can affect the environment and uses internal audits to ensure compliance with all applicable laws, regulations and internal policies.
- Sharing documents electronically with local employees and other Air Force installations worldwide.
- Each unit that handles hazardous material has a coordinator that serves as a conduit for the individual organizations; monthly collaborative meetings are held to meet new compliance challenges.
- The environmental branch also participates in the Environmental Safety and Occupational Health Council, comprised of senior leaders who promote environmental stewardship through the highest level.

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shipping back to Armstrong. WPAFB has instituted a thorough review process to ensure ceiling tiles must be dry, free of mold and cannot have adhesive on them. WPAFB is the number one Federal Facility ceiling tile recycler in the country partnering with Armstrong. Recycling ceiling tiles saves valuable disposal cost. In the first five years 1,129,000 square feet or 706,000 lbs. of ceiling tiles were recycled, representing a \$51,185 disposal cost savings. The recycling program diverted 1,794.90 tons of solid waste to recycling in 2011; a diversion rate of 63 percent was realized. Recycling center activities created an economic benefit of almost \$239,095 for WPAFB in 2011.

### Regulatory Compliance

WPAFB maintains accountability and control of all hazardous materials (HAZMAT) on the installation through the CEAN HAZMAT Cell. CEAN manages all HAZMAT in accordance with the base Installation HAZMAT Management Program Plan and the HAZMAT Management System. There is an Emergency Spill Response Program in place that consists of six CEAN responders. CEAN submits an annual Environmental Planning Community Right to Know Act Tier II compliance for several chemicals on WPAFB that are above the reportable quantity for storage. WPAFB is a Large Quantity Generator of Hazardous Waste and holds a one-year storage permit. CEAN ensures that the conditions of the permit are properly met. Other waste collected from WPAFB and managed by CEAN includes universal waste recycling (for instance, fluorescent lamps, mercury switches, batteries), Toxic Substances Control Act waste (for instance, PCB ballasts) and infectious waste.

In addition to the major programs listed above, CEAN has other programs in place to help ensure regulatory compliance. These include the implementation of the environmental management system at WPAFB and the Environmental Compliance Assessment and Management Program, which establishes the use of regular environmental assessments to ensure compliance with all applicable federal, state, local, Department of Defense and Air Force environmental regulations. There is also a design review program, which ensures all WPAFB facility and infrastructure projects are compliant with applicable environmental requirements. The Design Review Program ensures timely permitting requirements are being met; helps promote solid-waste reduction through recycling, and encourages the implementation of Leadership in Energy and Environmental Design (LEED) construction practices.

### Environmental Management System

WPAFB has had an ISO 14001 EMS since November 2009 for the management of all environmental aspects of WPAFB activities, products and services. The installation has been following the Plan, Do, Check, Act cycle throughout the process and has seen benefits from an emphasis on EMS-based training, document control system availability, Cross Functional Team (CFT) participation, and executive level management involvement in environmental decisions. Each organization that has environmental compliance items is required to designate a contact who acts as the liaison to the organization and the Environmental Branch. Greater emphasis on information flow from top to bottom and bottom to top has helped to establish not only a culture of environmental compliance and stewardship, but a beyond compliance goal setting.

The missions at WPAFB have increased in recent years with additional sections coming to the base through the Base Realignment and Closure Commission. Many of these new areas are laboratory functions which increased number of HAZMAT, hazardous waste streams, air emission sources and above ground storage tanks. Although some metrics have increased, overall the environmentally driven culture has been viewed as progressing forward, with not just meeting, but exceeding compliance levels.

CEAN implements the environmental portion of the Environmental, Safety, and Occupational Health Compliance, Assessment, and Management Program to internally audit the different environmental media areas and ensure compliance with all applicable laws, regulations and internal policies. A SharePoint site (e-Dash) allows for document control and sharing of environmental information and requirements with WPAFB employees as well as sharing information across the globe to other Air Force installations. CEAN also participates in the Environmental Safety and Occupational Health (ESOH) Council, which is comprised of the senior leaders on WPAFB to promote environmental stewardship at the highest levels on WPAFB. An EMS policy letter is maintained and is signed by each new Installation Commander. The Installation Commander also signs the Integrated National Resources Management Plan and Integrated

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Cultural Resources Plan. This shows a continued commitment toward environment stewardship and keeping environmental concerns at the forefront of executive level discussion making.

### Beyond Compliance and Public Outreach

Program managers monitor new regulations and develop strategies to ensure compliance. The Air Program performs a Cost of Compliance Assessment every three years to prepare for pending rule changes. Numerous Best Management Practices (78 for industrial discharges and 50 for municipal discharges) are in place to prevent potential releases from leaving the base. Spill booms are located at every outfall that discharges off base property and each boom is inspected periodically. Required monthly outfall monitoring of 23 storm water outfalls is supplemented by a public outreach/community involvement program which brings awareness of the program to the base populace of 27,000 people through activities such as Earth Day and Adopt-a-Stream which aids in ensuring protection of water resources. Water Quality training is given to base newcomers as well as key personnel throughout the base. WPAFB also has a Memoranda of Understanding with Dayton for protection of drinking water sources. Storm drains are identified with a visible identifiable decal to prevent unintentional disposal of chemicals or other unapproved substances into the drains. Additionally, WPAFB participates in numerous community involvement activities such as the Groundwater Guardian program, the WPAFB Environmental Advisory Board, and the Dayton Children's Water Festival. CEAN hosts earth day activities on WPAFB and environmental awareness was delivered to more than 100 people at the 2012 Earth Day celebration.

CEAN continued to support the partnership with Montgomery County Solid Waste District in the disposal of household hazardous waste generated from the base's transient military population. During 2011, almost \$9,270 was saved from the disposal of 295 containers weighing approximately 1,500 pounds. These materials were properly disposed of as opposed to going into the municipal solid waste or abandoned at the residence.

The Natural Resources Program is actively working on minimizing the devastating effects of the invasive Emerald Ash Borer (EAB) beetle which was found at WPAFB in July 2010. Activities include creating a comprehensive multi-phase management plan and base-wide ash tree inventory. Over the past two years, 905 ash trees have been inventoried and approximately 700 more ash trees evaluated. Work is being done to treat infected trees as well as remove and replace those that cause a safety risk; a \$15K project was awarded to remove and replace eight infested ash trees. The Natural Resources Program pioneered an 11 member Installation Tree Board to address EAB and promote native Ohio trees. The Natural Resources Program has unique tree inventory methods and colored tag identification for 125 various ash trees under treatment, which are serving as an awareness tool to raise public awareness of the effects of the EAB beetle. Tree tags placed on the golf course have allowed for informing the public as to the effects of the EAB. The Natural Resources Program also conducts annual prairie burns as needed to keep the 109 acre tall grass prairie, an Ohio Natural Landmark, located on WPAFB rejuvenated. The Natural Resources Program works to protect and enhance the wetlands on base. Last year signs were posted around 12 wetlands and native plant species planted at four wetlands.

### Reducing Impact to the Environment

All projects are evaluated to determine and mitigate the potential impacts to the environment and to coordinate with regulatory agencies if needed. HAZMAT no longer needed by the organizations is utilized in a "Free Issue" status across the installation. This directly saves on new material purchases and lowers disposal costs dramatically. Quantities of materials are also tracked so ordering is controlled to prevent excessive purchases which could result in unnecessary disposal costs. The HAZMAT Program at WPAFB is constantly working to improve the processes which facilitate accurate tracking and control of the approximately 80,000 HAZMAT items tracked every day.

The Air Program initiated the replacement of an incinerator with a classified shedder, reducing air emissions. In order to determine the most effective means to meet the new proposed Boiler MACT regulations, the Air Program participated in a large study that included detailed life cycle cost analysis to compare coal with natural gas for use as a primary fuel in WPAFB two heat plants. The resulting life cycle costs drove the decision to convert from coal to natural gas.

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The Water Quality Program spearheaded an initiative to switch from stormwater issue laden urea to road salt which accounted for a total reduction of urea on the installation from 198,000 lbs. to 2,000 lbs. A rigorous monitoring schedule is followed to ensure the industrial processes are not discharging any pollutants above regulatory limits to waters of the State. Best Management Practices are specified for each industrial area and inspected annually by CEAN. For deicing aircraft, there is a deicing fluid collection program as the BMP. The excess spent deicing fluid is collected with specialized vacuum equipment and then transferred to a storage container and sent off for recycling annually or as needed. The collection efficiency is estimated to be 60-75 percent recovery. By the nature of aircraft deicing some of the fluid must remain on the plane for take-off. There is a large vegetated buffer to catch any of the fluid that falls off during take-off so that it doesn't reach any storm sewer inlets. Additionally, the technicians performing the deicing are trained annually on ways to effectively deice aircraft while minimizing fluid use. The deicing trucks have a hot air system that allows the removal of light snow and ice without the use of any fluid. The technicians also minimally spray the aircraft whenever possible targeting specific areas such as the flight controls.

The Natural Resources Program meticulously maintains the Integrated Natural Resources, Integrated Pest, Invasive Species, and Wetlands and Stream Management Plans, which are decision making documents utilized to minimize adverse impacts on base natural resources. The Integrated Pest Management Plan has led to minimal application of pesticide active ingredient. Over the past five years the active ingredient usage was reduced by 3,000 pounds or 40 percent. CEAN requires and approves spill plans for locations where HAZMAT or waste are stored. The Hazardous Waste Program at WPAFB has recycled 35,990 lbs. of light bulbs from 2011 to 2012. This represents a high solid waste diversion and substantial savings in disposal costs. CEAN has been intimately involved with the startup and usage of both E-85 and Biodiesel on the installation. The base currently has 164 E-85 vehicles and 267 biodiesel vehicles with 41 more E-85 compatible vehicles on order. In 2011 the base used 406,620 gallons of biodiesel and 178,296 gallons of E-85.

WPAFB is home to the Wright-Patterson Medical Center, a regional Air Force hospital where attention to materials used has recently led to reductions in several products. A focus on ordering formaldehyde at quantities specific to individual functions of the hospital created a drop in product ordered; a switch from chemical heavy x-ray processing to digital processing allowed for a reduction from 780 gallons of Kodak Developer to zero gallons today. Over the life span on this process thousands of gallons of product were kept out of the waste stream for hazardous waste disposal and alleviated occupation health issues related to the use of the products.

### Employee Involvement

CEAN involves employees on the base in environmental. All employees, including military, civilian and contractors working on the base take initial EMS awareness training. The training covers the fundamentals of a conforming EMS. Annual training is also given to personnel responsible for the industrial and municipal processes that have stormwater discharges.

Each industrial area is inspected at least annually. Training is provided to personnel on WPAFB that handle bio-hazardous waste. A continual improvement form has been created to give the process managers on the shop and lab floors the ability to roll issues up to the EMS coordinator. This gives a systematic process for employees to roll up issues within the EMS construct. An award program provides incentives to employees who have exceeded expectations or had an innovative approach to their HAZMAT management.

There are different avenues for CEAN to share and make available environmental information. A SharePoint based site (eDASH) is utilized on WPAFB for document control and disseminating information to anyone on the installation. This site is open for read-only rights to all 27,000 individuals on the installation. Each quarter CEAN briefs the base commander on environmental issues. During the last year, 235 people were trained in hazardous waste operations; CEAN conducted SPCC Plan training for 115 storage tank managers and 251 oil-handling employees. Under the train-the-trainer program, Transient Alert trained 20 flightline personnel on spill prevention requirements. The total number of individuals, including contractor personnel, receiving SPCC Plan training in 2011 was 386.

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### Environmentally Preferable Purchasing

CEAN facilitates the Green Procurement Purchasing (GPP) Program which mandates the purchasing of recycled content items (for instance, office paper, ceiling tiles, carpet, etc.). A CEAN representative provides every government purchase card holder training on the GPP Program with hundreds of buyers on the installation who have received the mandatory training. The Environmental Branch has also worked with the on base office supply store (Office Runway) to maximize the availability of recycled content items available to purchase by base personnel.

A recent project submitted by CEAN is to procure a hydraulic oil purifier with an initial cost of \$23,000. The current practice by the Aerospace Ground Equipment shop is twice a year employees have to service three test stands containing 110 gallons of hydraulic oil. Servicing usually includes draining and refilling the test stands which costs \$955 per 55 gallons of oil. So for three test stands twice a year totals \$6,000. Disposal of this product would cost \$476 per test stand if the product could not go into the used oil program. The total cost per year comes to \$14,856 so in less than two years this piece of equipment has met its payback.

### For More Information

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For more information about Ohio EPA's Encouraging Environmental Excellence program, contact the Office of Compliance Assistance and Pollution Prevention (OCAPP) at 800-329-7518, or visit [epa.ohio.gov/ocapp/ohioe3.aspx](http://epa.ohio.gov/ocapp/ohioe3.aspx).