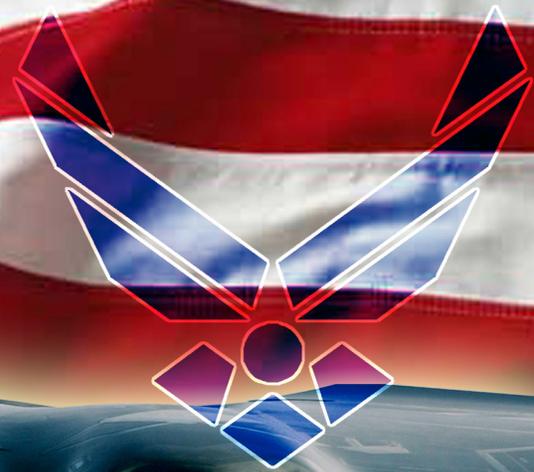
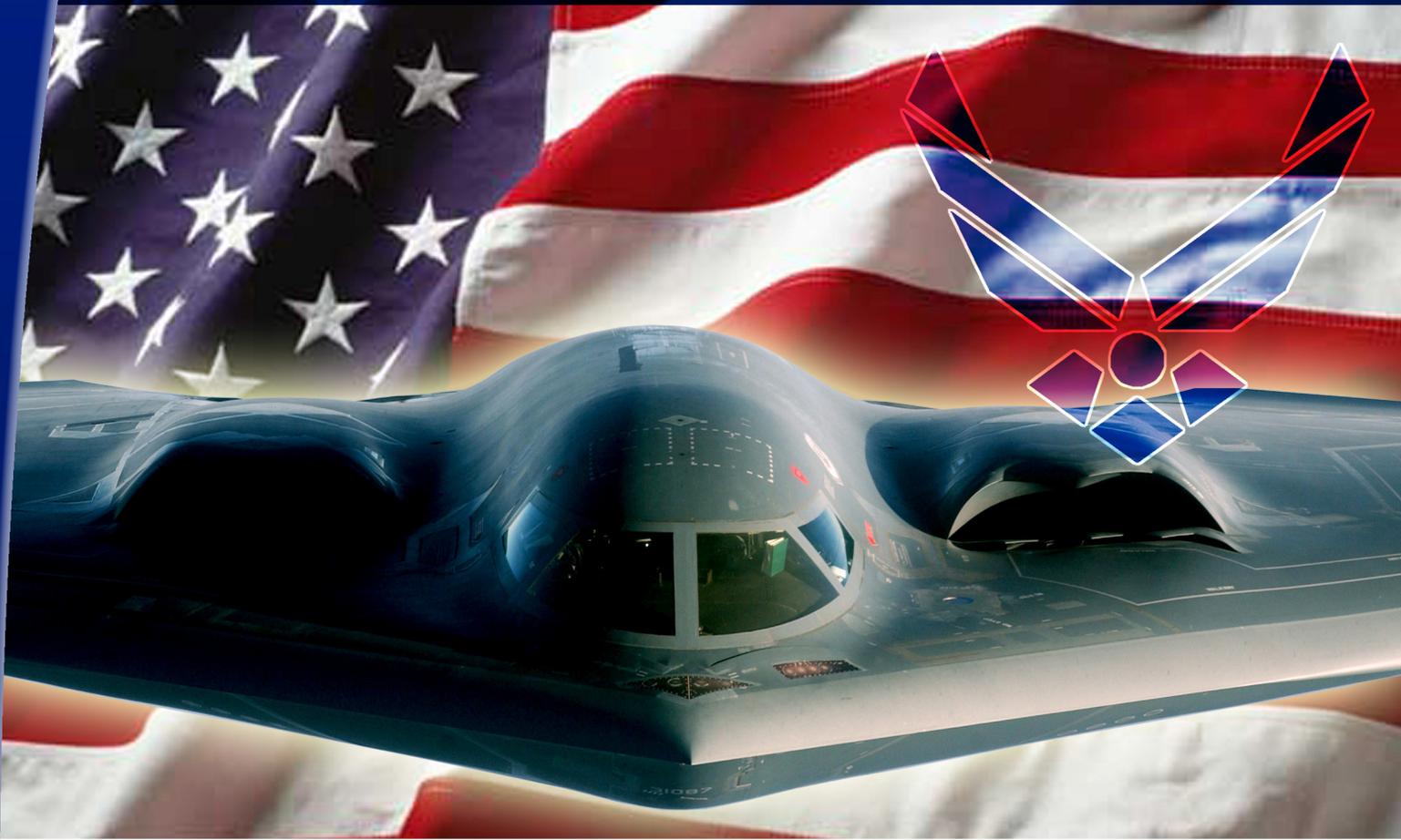


2004 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD



# Environmental Quality Industrial Installation



TINKER AIR FORCE BASE, OK



## INTRODUCTION

Tinker Air Force Base (TAFB), home of the Oklahoma City Air Logistics Center, provides worldwide technical logistics support to Air Force aerospace weapon systems while serving as a premier interservicing facility supporting the Air Combat Command, Air Force Reserve Command, and the U.S. Navy. TAFB manages 2,261 aircraft, including the B-1, B-2, B-52, C/KC-135, and E-3, and an inventory of approximately 23,000 jet engines.

TAFB is the largest industrial employer in the state, with over 25,000 civilian and military employees and an economic impact of \$2.53 billion on the six counties surrounding the base. Complementing TAFB's dynamic defense mission is its mission of environmental restoration and protection. The TAFB Environmental Management (EM) Directorate is an active steward of the base's water, soil, plant, and animal resources, including three creek systems, 15 base ponds, over 280 species of plants, and 220 different species of fish and wildlife.

## BACKGROUND

TAFB's complex industrial manufacturing processes, aging infrastructure, and ever changing environmental regulations all pose significant environmental challenges to its dual mission of military readiness and environmental stewardship. As TAFB's support of Homeland Defense, Operation Enduring Freedom, and Operation Iraqi Freedom continues, striking a balance between national security and environmental stewardship will become progressively more difficult. Tinker's significant environmental aspects encompass

2,000 air emission sources, 14 regulated outfalls on three creek systems, 71 regulated storage tanks, 11 miles of industrial waste lines and associated treatment plant, two groundwater treatment facilities, and 40 restoration sites. Educating the base tenants and the surrounding community about TAFB's environmental mission and encouraging them to be aware of the environmental impact of their activities remains an ongoing challenge.

The EM Directorate is well organized and well equipped to overcome these challenges. From November 1998 to March 2000, the EM Directorate went through the A-76 cost comparison study process and as a result, reorganized into two divisions in March 2001 – the Most Efficient Organization (MEO) and the Functional Area Staff (FAS) – each containing a compliance branch and an engineering branch. There are over 50 employees within the EM Directorate with a strategic mix of specialized skills, including scientists in the physical, biological, geological, and environmental fields; chemists; environmental protection specialists; and environmental engineers.

Tinker's top leadership demonstrates commitment to the environment through their public environmental policy and management approach. Using a two-tiered tactic, the Environmental Safety and Occupational Health (ESOH) Council, chaired by the installation commander, integrates top level involvement into the environmental program, while the media-specific working groups engage the workforce.

Tinker's innovative management approach has facilitated the local implementation of all phases of the Environmental Management System



(EMS) -- planning, implementation and operation, checking and corrective action, and management review. The EMS will undergo its first official Air Force assessment in the Spring of 2005.

TAFB maintains solid working relationships with other agencies and the local community with over 50 active partnerships with universities, government agencies, industry, and Indian tribes, including:

- Regular meetings with state regulator for CERCLA and RCRA issues
- Critical member of Central Oklahoma Clean Cities to promote alternative fuel usage and “clean the air” campaign
- Partnership with more than 30 active on and off-base stakeholders to enhance the Natural Resources Program
- Collaboration with state Indian tribes to cross-feed critical environmental compliance issues and legislation

To ensure that partners are aware of their impact on the environment and to facilitate compliance and continuous improvement, EM has developed or updated the following plans and agreements:

Environmental Plans and Agreements	Completion / Update
Community Relations Plan	Mar. 2004
Industrial Wastewater Emergency Response and Control Plan	Sep. 2003
Hazardous Materials Management Plan	Jan. 2003
Pollution Prevention Mgmt Action Plan	Sep. 2003
Facility Response Plan	Oct. 2002
Storm Water Pollution Prevention Plan	Oct. 2002
Wastewater Contingency Plan	Jul. 2003
Asbestos Management Plan	Mar. 2004
Affirmative Procurement Plan	Sep. 2003
Lead Based Paint Management Plan	Mar. 2004
Spill Prevention/Emergency Response Plan	Sep. 2004
Best Management Practices Plan	Aug. 2003
Integrated Natural Resources Mgmt Plan	Mar. 2004
Support Agreements (Tenant / Base Orgs)	Annual
Integrated Solid Waste Management Plan	Jan. 2004
Recycling MOA	Annual

**PROGRAM SUMMARY**

Over the past two years, the EM Directorate has remained focused on its mission - to serve as the Oklahoma City Air Logistics Center’s focal

point for all environmental issues by developing and implementing policies, programs, and procedures that ensure base-wide compliance with environmental requirements while fully supporting the base mission. EM has demonstrated continued commitment to its mission by implementation of its strategic vision:

*Reach out to neighbors* – Partner with the community, be honest and fair, learn from mistakes, and provide clear and open communication.

*Seek new ways to fulfill TAFB’s environmental mission* – Explore industrial processes that are cheaper and faster, reduce flow time, reduce the use of chemicals, and meet or exceed all environmental compliance requirements.

*Apply cutting-edge technologies to processes* – Locate, develop, and implement innovative technologies and methods to accomplish the base’s environmental mission.

*Provide state-of-the-art training* – Prepare training programs geared toward a new generation of workers, the base’s greatest asset.

To accomplish this strategic vision, EM has performed the following activities:

- Developed compliance infomercials (e.g., Bag the Rags, Solvent Usage) displayed on plasma screens throughout production shops
- Reduced VOC by 16 tons per year by replacing PD-680, MEK, acetone, and isopropyl alcohol with Hurrifsafe 9065
- “Closed the loop” through affirmative procurement (AP); program recognized as a model for AFMC
- Secured senior leadership support on environmental focus areas through the “EM Minute” - Top level visibility!
- Empowered personnel at all levels to sustain mission-readiness and exceed compliance
- Cleanup of contaminated sites: 85% of sites closed or have remedy in place - all sites will have remedy in place by end of FY08
- Cleanup investigation work scheduled to finish in 2005 – Focus on action!



- Maintained good neighbor relationship with local communities and state regulators
- Provided comprehensive multimedia training to base procurement, maintenance, and contractor personnel; increased awareness and improved compliance
- Saved nearly \$10 million by implementing many far-reaching initiatives

## ACCOMPLISHMENTS

### EMS IMPLEMENTATION

Tinker's Center Commander issued an Environmental Policy Statement that stresses commitment to improving and protecting the environment. The policy was distributed base-wide and is publicly displayed on the external website. TAFB set goals consistent with the policy statement, performed a gap analysis, and hosted a local review by the EPA. EM developed an implementation plan for fielding an ISO-14000-like EMS by December 31, 2005, the EO 13148 requirement. EM developed an Aspect Register from the Inventory of Activities and together with base stakeholders, identified and prioritized all the environmental impacts associated with the aspects. By capitalizing on the existing pollution prevention program, the prioritized aspects are being used to systematically perform opportunity assessments and to improve the environmental awareness of stakeholders and encourage their involvement in reducing their aspects' impacts to the environment. With over 3,000 compliance sites and 25,000 employees on base, this is a challenge that EM is meeting head-on while striving for continual improvement.

Training is an integral part of the EMS implementation, and general EMS awareness training has been provided to a broad range of base employees. Practitioner training has been conducted with the core EMS team. Additional awareness training for employees is tailored to the specific aspects with which they are associated. Any findings in the annual assessments will initiate a review of the training requirements.

The first official EMS management review in the Spring of 2005 will also serve as additional awareness training for the executive staff.

### POLLUTION PREVENTION AND WASTE REDUCTION EFFORTS

TAFB has reduced toxic release inventory emissions by over 1.4 million pounds as of 2004, an 83% reduction. This exceeds the executive order goals by over 33%. TAFB has improved sludge dewatering at the Industrial Wastewater Treatment Plant (IWTP) that reduced hazardous waste disposal by 6.9 million pounds. More than 75 percent of hazardous waste volume was eliminated from the IWTP, Tinker's largest waste stream, resulting in annual savings of \$1.3 million.

TAFB implemented powder coating in two paint shops resulting in a 90% VOC reduction and \$180,000 in annual savings. Powder coating reduces flow time by a factor of five to one and improves durability and decreases compliance burden by replacing high VOC paints.

Tinker has long been a DoD leader in alternative fuel vehicles, leading the way in compressed natural gas (CNG) in the 1990's. Tinker was the first AFMC base to implement biodiesel in 2002. Over 900 base vehicles operate on alternative fuels including CNG, biodiesel, propane, and electric. Each year over 200,000 gallons of alternative fuels are used reducing air emissions by 20 tons.

TAFB won a 2004 White House Closing the Circle Award for rejuvenation of the base recycling program, increasing the solid waste diversion rate by 17% since October 2002. TAFB took aggressive action to increase the types and quantities of materials recycled, purchasing new containers for recycling white paper in the office areas and improving the system for distribution and pick-up. As a result, white paper recycling increased by 120% with



*Tinker's winning recycling program is praised in the federal Closing the Circle News.*



increased revenues of over \$3,000 per month. TAFB implemented a system to recycle junk mail, magazines, and shredded paper at no cost to the government, diverting over 80 tons of waste from landfill disposal the first year. TAFB procured recycling drop-off units for the collection of aluminum cans, glass, and plastics. TAFB purchased and distributed new color-coded curbside bins for aluminum cans, newspaper, and glass for the military family housing area and obtained senior leadership commitment to the curbside recycling program. As a result, participation in curbside recycling has shown a ten-fold increase since October 2002.

TAFB emphasized the importance of protecting water quality by hosting a water monitoring event in April

2004. Teams of base volunteers sampled segments of the base's three creek systems and analyzed the samples for water quality parameters, such as dissolved oxygen, nitrates, metals, and chlorine. The results from this event were used to determine the health of base streams and to pinpoint potential areas of storm water contamination. TAFB continues to be a steward in managing the base's storm water protection program. Training sessions were held for base contractors, Civil Engineering, Base Procurement personnel, and the Corps of Engineers to educate them on how to prevent storm water pollution from construction sites.

### ENVIRONMENTAL COMPLIANCE ASSESSMENT AND MANAGEMENT PROGRAM (ECAMP)

Due to aggressive efforts to educate and inform base employees on environmental compliance issues, TAFB experienced a 41% reduction in FY04 external ECAMP findings when compared to the FY01 external assessment. TAFB established an ECAMP website that is available to all base personnel. The site contains all Federal, State, and Air Force assessment checklists. Posted on the site are ECAMP reports from previous assessments.

Availability of these reports has allowed cross-feeding information to base personnel about past violations of environmental regulations. The EM Directorate developed an ECAMP briefing for all base and tenant senior staff personnel. The briefing was presented during organizational staff meetings and helped Commanders prepare their organizations for ECAMP assessments.



*Local students and base personnel plant aquatic vegetation during Earth Month.*

### COMMUNITY RELATIONS

Tinker's programs and activities enhance environmental awareness and community involvement both on- and off-site. TAFB has open and easy communications with the public and has an active Community Advisory Board that reviews the program and sends information out via a website and newsletters. This allows the public to easily communicate by submitting comments through email, phone calls, and open meetings.

TAFB's visionary Outreach Program extends beyond the fence line, including a fishing clinic for special needs children; science and engineering career days; and Sciencefest Oklahoma, which involves interacting and educating 4,500+ Oklahoma students.

TAFB's Earth Month activities are the pinnacle of the outreach program. Environmental Awareness Day educated 14,000 base personnel on environmental issues, while local school children received hands-on experience planting aquatic vegetation in the base's newest marsh filter. The event provided the children with valuable training about improving water quality. Tinker's recycling super-duo, Recycloman and Recyclowoman, continually make a dull subject fun. These two use their *super powers for good* to "spread the word" about recycling both on base and at events in the local communities. TAFB's outreach activities demonstrate Tinker's commitment to environmental stewardship and to being a good neighbor.



## NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PLANNING, ANALYSIS, AND IMPLEMENTATION

TAFB improved environmental assessment processing time and quality by integrating the NEPA database with GIS mapping. This tool provides detailed analysis of future project sites with regard to Environmental Impact Analysis Process (EIAP) issues, including floodplain and wetland data, air quality, hazardous materials/waste, sensitive species, flora/fauna, soils, and cultural resource sites. Over 3,100 EIAP requests were processed, meeting all customer need dates with excellent mission support.

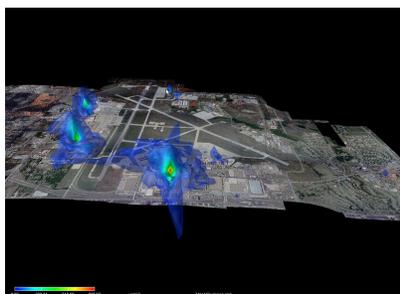
## AIR POLLUTION CONTROL

TAFB maintains an excellent rapport with the air quality regulatory authorities by routinely meeting with them on the base's Title V air permit. This continuous communication has paved the way for a speedy review of the Tinker permit both by EPA and peers. This will lead to the issuance of the Title V permit for Tinker in the Spring of 2005.

EM continues to develop automation tools and methodologies that have proven to be critical in demonstrating compliance with regulations.

EM designed and developed data management tools for the Annual Air Emission Inventory and SARA Section 311-312 reports. These tools track emissions and chemical storage on base and automate reports to the regulators, saving over 2,400 man-hours annually.

TAFB was the first in the DoD to use 3-D visualization for evaluating air modeling data. In 2004, Tinker expanded this capability to include side by side views of modified air emission units and a tool that does predictive analysis of workload changes. This



3D Volumetric Modeling

tool also generates 2D contours for the EM GIS system.

EM developed in-house ODC training for HVAC technicians. Over 40 employees were trained, and the material is now posted on the EM web site for future use. This effort saved over \$50,000 annually in off-site training costs.

Shop-specific compliance manuals were distributed to over 400 locations in December 2002. These manuals were used to train employees on intensive air quality requirements.

TAFB is conducting environmental training and awareness programs that provide user-friendly Pocket PCs, Tablet PCs, and web-based training to create interactive experiences at the worksites. Over 600 workers have been trained with these tools developed in-house, saving over \$300,000. TAFB has also launched web-based environmental training on the EM home page to allow 24/7 access. This flexible, far-reaching platform improves access to training, while accommodating all three production shifts and saving the EM over \$40,000.

## AWARD WINNING PROGRAM

During the past two years, EM has been recognized for its unparalleled level of excellence in fulfillment of its mission by receiving the following awards:

- 2004 White House Closing the Circle Award for Recycling
- 2003 DoD Environmental Restoration Award
- 2003 AF General Thomas D. White Environmental Restoration Award
- 2003 AFMC General Thomas D. White Environmental Restoration Award
- 2003 AFMC General Thomas D. White Environmental Quality Team Award for Outreach
- 2003 AFMC General Thomas D. White Natural Resources Team Award

Always striving to improve, the EM Directorate will continue to pursue the strategic vision and mission-oriented focus that has made it a model of environmental excellence.