

FY 2003 SECRETARY OF DEFENSE ENVIRONMENTAL AWARDS PROGRAM

ENVIRONMENTAL QUALITY—
NON-INDUSTRIAL INSTALLATION

KANSAS ARMY NATIONAL GUARD



INTRODUCTION

Chartered by the U.S. and Kansas Constitutions, the Kansas Army National Guard (KSARNG) strives to support federal, state and community missions related to providing military capability for the nation; protecting life and property in the state; and adding value to communities. The Kansas Army National Guard is composed of 6,500 motivated citizen-soldiers that are highly trained in a wide range of military functions, including armor, aviation, infantry, field artillery, engineering, maintenance, transportation, medicine and in providing other support to augment U.S. Army operations. The KSARNG has one field training site, the Kansas Training Center, which encompasses approximately 3,600 acres near Salina in north-central Kansas as well as 90 facilities located in 54 communities throughout the state. The city of Topeka, founded in 1854, is the capital of Kansas and the Headquarters of the KSARNG and has a population of 123,993. Located at a point where the Oregon Trail crosses the Kansas River, from its beginning, Topeka has played a major role in government, transportation and health care.

BACKGROUND AND ORGANIZATION

In support of its mission, KSARNG carries out a strong environmental quality program that features unique and successful approaches in the areas of environmental compliance assessment and management, waste management and resource recovery, as well as environmental research and education.

KSARNG's large number of armories, their varied environments and support requirements, challenge the installation to seek highly effective, cost efficient ways to achieve and surpass environmental quality program goals.

In this regard, KSARNG places a strong emphasis on working cooperatively with units and facilities across the state to ensure they are



▲ Soldier walking through a prairie area during a land navigation exercise at the Kansas Training Center.

environmentally compliant and are provided with proper environmental training. This approach directly contributes to the fact that KSARNG received no Notice of Violations (NOVs) during, or immediately preceding, the award period.

One example is our **Unit Compliance Assistance Program (UCAP)**, developed in early 2002 by KSARNG's Environmental Management (EM) Section, which is comprised of traditional Guard soldiers. The program is conducted entirely by the EM Section staff and assists units with maintaining environmental compliance rather than forcing them to comply through formal inspections. UCAP provides units with the environmental assistance they need, such as

"The team's ability to work with people and sell the environmental program to other units of the Guard has been the key to their success in achieving full compliance and understanding of environmental regulations."

"Major Randall and his team have educated the other units to be environmentally proactive. The environmental staff's ability to team with everyone and maintain an excellent rapport with each unit within the Guard makes the mission of the Guard easier to administer."

– Colonel James Stewart, Director of Facilities and Engineering for KSARNG

hands-on training, without the apprehension associated with a formal inspection. This establishes strong working relationships with units across the state. To increase the visibility of the environmental program to the traditional Guard soldier, visits are scheduled during the unit's normal periods of Inactive Duty for Training which helps to integrate the traditional "weekend" soldier into the KSARNG environmental efforts. In 2003, the EM Section staff conducted over 20 UCAP visits at units throughout the state.

The success of the environmental program lies with its ability to get all soldiers involved in environmental stewardship, whether it be through UCAP visits, training courses, recycling programs or through on-site support provided during periods of annual training. The ability to reach units across the entire state of Kansas and provide the best quality assistance and support is made possible through the establishment and integration of the EM Section into the KSARNG's overall Environmental Program.

KSARNG also has an **Internal Environmental Compliance Assessment System** that conducts annual visits to 100 percent of KSARNG facilities that are classified as Kansas Generators (generates between 55 and 2,200 pounds of hazardous waste per month) to identify mechanisms, procedures and supplies necessary to maintain compliance. Remaining facilities are visited every three years. Units receive on-site personnel training and equipment setup.

The environmental program team consists of five full-time staff members as well as three part-time weekend staff under the leadership of Major Anthony Randall, Ph.D. Each team member assumes the responsibility for addressing concerns and issues at all facilities located throughout Kansas.

The approach of organization-wide and individual involvement in environmental stewardship to support mission readiness is also reflected through inter-departmental support to KSARNG's Innovative Readiness Training (IRT) projects. These projects provide funding or manpower for

engineering, transportation or medical projects in the community to groups that could not otherwise accomplish or afford the work. IRT projects allow the soldiers to keep their skills at a high level—helping the proponent while maintaining unit readiness. Prior to starting IRT projects, KSARNG is required to gauge any environmental impact of proposed construction activities by completing an environmental survey. Significant findings can prevent the Guard from participating in a community project. By working closely with the IRT leadership and staff, the environmental program team helps keep planned projects on track.

"The National Guard award shows how much our soldiers care about protecting and preserving our environment for future generations. The records show that they did far more than what was required of them in order to carry out their mission. Going that extra mile is what being a Kansas National Guardsman is all about and I am proud of them."

– Major General Tod Bunting, Adjutant General of Kansas

In addition, the KSARNG Directorate of Maintenance and the KSARNG Environmental Office are developing a new, more detailed environmental checklist for use during Command Maintenance Evaluation Team inspections at units and facilities located across the state.

In addition to internal coordination, KSARNG also works closely within the regulatory and military community to achieve its environmental mission. The KSARNG participated in a variety of national and regional panels:

- KSARNG is the only military installation to serve as a voting member on the Environmental Protection Agency (EPA) Region VII Pollution Prevention Roundtable, a panel composed of regulatory agencies, environmental assistance providers, academic institutions and other entities that meets for the purpose of exchanging information on new technologies and ways to maintain compliance. KSARNG has been a voting member of the Roundtable since 1998, and held the position of Roundtable President from 1999-2001.

- KSARNG was involved in the National Guard Bureau Environmental Advisory Board (2001-2002). The board, made up of environmental program managers from regions throughout the 54 states and territories, provided feedback and input from the “local” level to National Guard Bureau (NGB) environmental leaders and staff on a wide variety of issues.
- The KSARNG is also the only Army Reserve Component (National Guard and Army Reserve) organization represented with a member (Major Randall) on the Field Activity Support and Technology Transfer (FASTT) Team, a joint program of the Navy, Army and Air Force that conducts visits to military installations to provide management and technology assistance to reduce costs and improve work processes. FASTT won the Secretary of Defense Environmental Security Award in 2000.



▲ Armory in Kingman, Kansas, which has been nominated for inclusion on the National Registry of Historic Places.

for funding and will use those funds for the betterment of the Guard and the community. The ability to justify the need for those planned projects determines whether they will receive adequate funding to execute them.

PROGRAM SUMMARY

During the past two years the KSARNG attained a high compliance level. Objectives achieved during the award period include:

- **Achieve full compliance.** The KSARNG received no NOVs, no noise complaints and no reportable spills of Petroleum, Oils and Lubricants or other hazardous substances due to human error.
- **Increase public safety and awareness.** The KSARNG educates the community and makes them more aware of the threats that exist in the environment by acting as guest speakers for science classes and schools. These activities empower citizens to protect the safety and health of themselves and those around them.
- **Protect human health and the environment.** The KSARNG continually strives to improve the lives of both our soldiers and our surrounding communities by utilizing recycling methods and technologies that decrease the amount

The funding for KSARNG’s environmental program comes completely from the Army Environmental Program Requirements system. In fiscal year 2003, the KSARNG’s budget was \$1.2 million and the obligation rate was 99.3 percent. In fiscal year 2004, the budget is approximately \$960,000. There are no other sources of funding from the state, grants or other matching fund programs. Due to the size of Kansas and the number of facilities in the KSARNG, it is essential and critical to the KSARNG environmental program to demonstrate, based on their planned environmental projects, that they have a need

“The environmental permitting process is complicated. Major Randall and his staff take time out of their day to review my program and make sure I have correctly addressed all the environmental concerns. Without Major Randall and his group, it would be more difficult to complete my work. They provide the necessary environmental support and make my work easier.”

– Captain Jeff Totman, Innovative Readiness Training project officer, KSARNG

of hazardous waste being disposed of and will act to significantly decrease the amount of volatile organic compounds (VOCs) being released to the atmosphere.

- **Successfully implement EMS.**

In 2003, KSARNG established an organizational environmental policy and performed a gap analysis. Their implementation plan will be complete by March 2004. The KSARNG is bringing EMS training to Kansas for senior leadership and their “customers” in April. The KSARNG is a member of the National Guard Bureau’s EMS Committee, which provides input from the states and territories to the NGB on how to adapt EMS and better incorporate it into the Guard’s unique mission and operations.

- **Develop and employ cost-effective solutions.**

KSARNG implemented several cost-effective solutions to environmental compliance issues, such as the purchase and use of solvent basins with dual on-board filtration systems. Each package (basin, drum of solvent and filters) cost less than \$1,000 and saved an estimated \$1,484 each, resulting in a payback period of less than one year. In addition, each basin saved approximately 1,545 pounds of solvent and related wastes from being generated annually.



▲ Restoration of native prairie grass at the Kansas Training Center.

ACCOMPLISHMENTS

KSARNG’s compliance and education successes are in large part due to the proactive, risk-based approach to the environmental quality they have adopted. This is highlighted by the following major accomplishments:

Hazardous Waste Reduction and Cost Savings

KSARNG reduced maintenance and supply costs through program changes that have eliminated the need for organization-wide service and/or disposal contracts. For example, KSARNG discontinued use of a national vendor solvent service, and instead purchased 27 solvent basins with dual on-board filtration systems. These systems not only filter out particulates, but also remove oils and greases from the solvent, keeping the solvent cleaner for a longer period of time, extending the life cycle of the solvent, and in turn reducing costs. During the past two years, approximately 100 gallons (840 pounds) of solvent was disposed of, compared to approximately 2,000 gallons (16,900 pounds) annually under the contract-based solvent basin program. At the Advanced Turbine Engine Army Maintenance (ATEAM) facility, this resulted in annual savings of nearly \$6,000 in recurring costs

2002 KSARNG IRT Projects

- Construction of the Police Firing Range in Horton

2003 KSARNG IRT Projects

- Chanute School District Sports Complex parking lot
- YMCA Camp Hammond road and trail improvements
- Elk City lake road, culvert and shoreline improvement
- Atchison County Historical Society Lewis and Clark Trail

and reduced solvent-related waste by more than 960 gallons (6,100 pounds). The ATEAM facility is only one of four in the world that can completely rebuild the turbine engines on the series of M1 Abrams Main Battle Tanks.

Air Pollution Control

KSARNG is reducing the amount of air pollution resulting from routine painting activities. Employing High Volume-Low Pressure (HVLP) paint guns reduced air emissions of VOCs. The HVLP paint guns emit less paint through their design, which results in a 40 percent reduction in overspray and lowered air emissions.

The KSARNG also plans to implement paint gun cleaning stations that continuously recycle the cleaning solution, eliminating the need for one-time-use thinners to clean painting equipment. This method is expected to result in a 50 percent reduction in the generation of paint-related wastes at KSARNG's painting facilities. Over the past three years, KSARNG disposed of approximately 12,000 pounds of paint-related wastes at a cost of approximately \$4,700. Through the use of the HVLP guns and the paint gun cleaning stations, those figures are estimated to decrease to approximately 5,600 pounds of paint-related waste generated with a corresponding disposal cost of approximately \$2,300.

The KSARNG is also planning to use a water-based Chemical Agent Resistant Coating that will further reduce the amount of VOCs being emitted.

Articles on KSARNG's pollution prevention and environmental efforts have appeared in:

- Environmental Update, U.S. Army Environmental Center
- Kansas Department of Health and Environment Environmental News
- Central Regional Environmental Office Newsletter
- Kansas Preservation, by the Kansas State Historical Society
- Topeka Metro News

Waste Management and Resource Recovery

The KSARNG Recycling Program, which is a Qualified Recycling Program, or QRP, uses the

centralized supply distribution system to collect recyclable materials such as paper, cardboard and scrap metal from facilities throughout the state. This program allows facilities to recycle through the same process that they obtain their supplies.

What makes the Recycling Program unique is that most Army Guard states only focus their recycling efforts on large complexes, such as state headquarters and training sites. The KSARNG program reaches each and every facility across the state and involves every soldier in the recycling process.

Since its inception in the late 1990's, the Recycling Program recycled over 2 million pounds of material, with 305,000 pounds of that material being recycled in the last two years alone. The program avoided estimated costs of \$9,000 in fiscal year 2001, including nearly \$4,700 in generated revenue. Revenue is used (as required by QRP guidelines) for ongoing program maintenance and morale, welfare and recreation projects at our units. In addition KSARNG:

- **Recycled used antifreeze and used oil filters.** Although state environmental regulations allow for disposal of antifreeze down drains and disposal of used oil filters in trash, KSARNG policy prohibits disposal of antifreeze through drains and strictly regulates the disposal of used filters. A plan to recycle these items was developed with the Fort Riley Directorate of Environment and Safety, where units and facilities can take these materials to Fort Riley for recycling. In other instances, antifreeze and filters can be collected for recycling through a contractor. Although KSARNG must pay money to recycle these items, it is the most environmentally friendly method to manage the used antifreeze and filters.
- **Recycled Lead from firing ranges.** In fiscal year 2003, 4,800 pounds of lead was recycled from two indoor firing ranges that produce waste from bullets, saving \$1,300 in one year. Transporting the lead to a recycling facility costs around \$560, as compared to \$1,800 to dispose of the lead as hazardous waste.

- **Recycled blast media from de-painting operations**, reducing the costs associated with having to buy blast media more frequently and disposal. Once used, the material is returned to the company from which it was purchased and is then used by that company as a raw feedstock in the manufacture of a variety of plastic items. A variety of EPA regions and state environmental departments have approved the practice, including the Kansas Department of Health and Environment. During fiscal year 2003 alone, 506,800 pounds of used blast media was collected from depainting operations at Fort Riley and recycled. If the used blast media were disposed of as hazardous waste, it would have cost the KSARNG a total cost of around \$182,400.

Technology Development

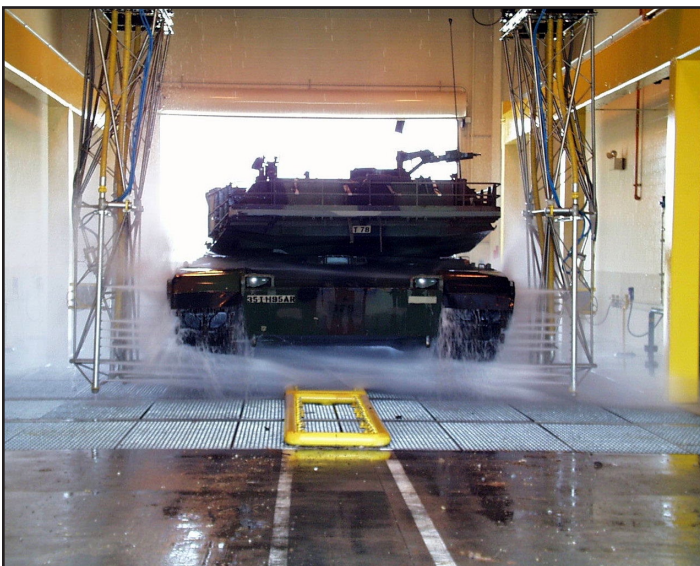
KSARNG is researching innovative, adaptive uses for existing technologies in order to reduce erosion repair costs. The KSARNG, in conjunction with the Natural Resources Conservation Service, is conducting several small-scale erosion control experiments at the Kansas Training Center in order to identify the most effective and efficient way to minimize erosion of firebreaks and training areas. The experiments include the deployment of portable silt dikes and “speed bump” terraces



▲ Erosion control experiment on firebreak at the Kansas Training Center.

that slow water runoff and divert water to one side of the firebreak and the use of fabric mats on eroded training areas to stabilize the soil and underlying bedrock and re-establish the protective vegetation cover.

KSARNG is committed to conserving water resources by using new technologies, such as the purchase and installation of closed-loop vehicle wash systems at three maintenance facilities and closed-loop aircraft wash systems at two Army Aviation Support Facilities. The KSARNG also designed and constructed a state-of-the-art, closed-loop vehicle wash facility at Fort Riley. The post-wash water drains into a 420,000-gallon sedimentation basin, where sediments and oils are removed. The water is then re-circulated through the wash process, conserving an estimated 10 million gallons of water per year.



▲ M1 Tank being washed at the Fort Riley Vehicle Wash facility.

If conventional washracks or wash facilities were used, the water would have gone down the drain and could not have been reused.

In addition, at KSARNG maintenance facilities, power floor scrubbers have been purchased and are used to clean workbays; their use reduced the amount of water needed to clean workbays at the Maneuver Area Training Equipment Site alone by nearly 250,000 gallons per year.

Comprehensive Training Activities Utilizing New Technologies

KSARNG developed a comprehensive spill prevention and response program, focusing on spill containment pallets and cabinets for material storage; spill response carts and supplies for every KSARNG facility; and individual portable secondary containment and spill response kits for each Heavy Expanded Mobility Tactical Truck and Tank and Pump Units for use during field refueling exercises.

Environmental Research and Education

Interaction with National, State and Local Partners

As part of its strategic environmental quality efforts, KSARNG employs the assistance of local and state partnerships and non-governmental organizations such as the Nature Conservancy, Pheasants Forever and Quail Unlimited. These organizations, along with the Natural Resource Conservation Service, have all contributed guidance and expertise to help KSARNG personnel improve the condition of the training environment.

The KSARNG also developed a positive, proactive relationship with the Kansas State Historic Preservation Officer (SHPO) to identify and protect historic structures under KSARNG control. They have worked together to identify several armories that have historical significance in the state. Two of the armories were constructed during the pre-World War II (WPA) era and have been formally nominated for inclusion on the National Register of Historic Places. Due to the unique relationship between the Guard and our communities, the KSARNG and SHPO have agreed on the selection



▲ Preserving historic structures: old smokehouse from an abandoned farm at the Kansas Training Center.

of four Cold War-era armories to be protected and treated as if they were eligible for the National Register. This is a unique approach to the management of Cold War-era structures in the Army National Guard, and is reflective of the relationships that the KSARNG have built with a number of other agencies.

KSARNG is developing training packages using distance learning delivery systems for online and CD-ROM-based courses that include:

- Occupational Safety & Health Administration Hazard Communication Standard
- Spill Response Train-the-Trainer Videotape and Trainer's Manual
- Natural Resources Awareness
- Cultural Resources Awareness
- Pollution Prevention Awareness

In addition to the above courses, the KSARNG produced an environmental awareness videotape

titled, “Guardians of the Prairie” which is currently used as a part of the ecology curricula at the United States Military Academy at West Point. The KSARNG also developed field guides, field cards and other conservation-related guides for use at the Kansas Training Center. The field cards were developed as a quick reference guide for soldiers to assist them in not only protecting Kansas’s natural resources, but also in achieving environmental compliance. The KSARNG also developed a baseball card-sized graphic aid that identifies harmful plants, animals and reptiles found at the Center.

Community Outreach and Education Projects

Despite having a full-time staff of only six, the Environmental Management team still performs numerous community outreach activities. During the last two years, this included delivering presentations and handing out environmental “goodies” (coloring books, lanyards, posters, playing cards) at local preschools and elementary schools; presenting environmental science and stewardship to local high school science classes; and serving as guest speakers for a College of Engineering Lecture Series at Kansas State University. In addition, KSARNG opened up areas of the Kansas Training Center to science classes for field trips and class projects, and allows the Boy Scouts to use the Center as an outdoor classroom for teaching a variety of team-building and outdoor skills. The training center hosted the Kansas Department of Wildlife and Parks, who sponsored a Youth Shoot to promote safe hunting practices and to educate youth on the role of hunting in ecological management.

National Environmental Policy Act (NEPA) Implementation

The KSARNG strived to improve their NEPA compliance in several ways. In 2002, instructors were brought to Topeka to present a three-day NEPA course to train Environmental Office staff,



▲ Young whitetail deer at the Kansas Training Center.

as well as personnel from other KSARNG offices and directorates. The Environmental Office’s NEPA manager also attended an extensive graduate-level NEPA training course offered through Utah State University. To increase the visibility of its NEPA program to both full and part-time personnel, KSARNG uses a specially designed Web site. The site includes forms, NEPA guidance, a CD ROM-based Natural Resource Awareness course and written instructions that assist units and individuals in fulfilling their NEPA responsibilities. In order to help track the status of NEPA documents, a test version of a database is being designed. The database will include all NEPA actions and decision documents and will be available to users via the Environmental Office Web site.

The Environmental Office processed 20 NGB Environmental Checklists and Records of Environmental Consideration in 2002, and 18 in 2003. In addition, they also contracted for one environmental assessment in 2002 and two in 2003.

In order to ensure NEPA compliance, in late 2003, KSARNG instituted a data call to units to report all Local Training Areas (LTAs) currently in use. LTAs are pieces of land that are owned by an individual

or agency outside of the KSARNG that are used for military training purposes, usually small-unit tactics and skills. Many of these may have been established prior to NEPA requirements, and their impact on the environment was never fully assessed. The goal is to assess the uses of the LTAs and ensure that they are in compliance with current environmental regulations and policies.

Pest Management

In 2002, KSARNG sent one member of the environmental staff to the Department of Defense (DoD) Pesticide Applicator Certification course and DoD Pest Management Coordinator/Quality Assurance Evaluator Certification course. This marked the first time that a certified person was on the environmental staff and could provide oversight in pest management issues. One outcome of this training was that this individual identified and reported a pesticide issue that had been overlooked not only at the state, but also at the national level. This issue concerned the use of pesticides at armories that have Head Start or pre-kindergarten programs. As a result, the concern is now being addressed by NGB and the U.S. Army Environmental Center.

In 2003, a new Integrated Pest Management Plan was written to replace an older outdated one. Although the KSARNG met the Measure of Merit to reduce pesticide usage by 50 percent (from a 1993 baseline), this plan puts integrated pest management measures into effect that will further reduce pesticide usage statewide while still providing effective pest control.

CONCLUSION

Achieving these kinds of environmental goals resulted in reduced maintenance and supply costs, allowing Commanders to allocate more funding for equipment and training, which increases the readiness capacity for crisis or emergency responses and improves our level of military readiness.

The KSARNG improves the quality of life for all residents of Kansas by planning initiatives that positively impact populations beyond the military community. By decreasing the generation of hazardous wastes, reducing the occurrence of hazardous materials spills and minimizing damage to training areas and their ecosystems, the KSARNG is serving as a steward in protecting our environment for this, and future generations of Kansans.