

2014 Secretary of Defense Environmental Awards Environmental Quality, Team Minnesota Army National Guard

Introduction and Background: The Minnesota Army National Guard (MNARNG) Environmental Quality (EQ) Team manages a range of resources across the state including the Camp Ripley Training Center; Arden Hills Army Training Site (AHATS); 63 Armories; 8 Field Maintenance Shops (FMS); and 2 Army Aviation Support Facilities (AASF). The MNARNG's 11,347 Soldiers provide war fighting, sustainment, homeland security, and emergency response support for the state and the nation. Maintaining the MNARNG installation to the highest possible environmental standard is the Team's goal. Much of the EQ Team's work is focused on Camp Ripley Training Center, MNARNG's largest facility with 53,000 acres providing 450,000 man days of training every year. The Team is headquartered at Camp Ripley and AHATS and they implement and support EQ activities across the state.

Team Description: The 22 members of the EQ Team are responsible for compliance and sustainability management of all MNARNG installation facilities. The EQ Team prioritizes environmental management to support Soldier readiness, striving to achieve environmental sustainability as it relates to water, waste, energy, and encroachment. The Team's commitment to EQ and sustainability is demonstrated in every aspect of their work, from training to pollution control, to Environmental Management Systems (eMS) implementation, all of which serves the MNARNG's achievement of excellence in its Triple Bottom Line: Mission, Environment, & Community.

Judging Criteria	
	Program Management
	Orientation to Mission
	Technical Merit
	Transferability
	Stakeholder Involvement
	Program Impact

"We're proud to see the Minnesota Department of Military Affairs Environmental Team being recognized... This shows that, like many Minnesotans, the Minnesota National Guard is committed to environmental protection by repeatedly accomplishing environmental excellence while minimizing training impacts on the Soldiers and Airmen of the Minnesota National Guard."

--John Linc Stone, Commissioner, MN Pollution Control Agency

Summary of Accomplishments: The EQ Team has achieved many important milestones over the past two fiscal years, including the development of three new online training courses for the MNARNG Learning Management System. The Team is working on a biomass district heating system for Camp Ripley encompassing 7 buildings and displacing approximately 14,000 million cubic feet of natural gas usage. The Minnesota National Guard Joint Sustainability Plan, which provides an integrated approach toward achieving Net Zero in the areas of energy, water, and solid waste in conjunction with the Minnesota National Guard's Campaign Plan, was completed by the Team in FY13. Additionally, the Team finalized a State Sustainability Plan to meet a state mandate regarding pollution prevention. The Team participated in completing phase two of the Operational Range Assessment (ORA) for Camp Ripley in 2012 with no negative findings. The first update of the Camp Ripley Wellhead Protection Plan was completed by the Team in 2013 resulting in a format for wellhead protection plans that has been adopted as a model by the Minnesota Department of Health. These successes are in addition to the Team's ongoing work to ensure environmental compliance, expand eMS, increase recycling, reduce waste streams, implement the Army Compatible Use Buffer (ACUB) program, and accommodate community outreach.





The MNARNG EQ Team. Front row: Marty Skoglund, Jay Brezinka, Brian Sanoski, Zac Alexander, Lynn Houle, Nancy Dietz, Mary Lee, & Scott Albers. Back Row: Ken Auer, Joe LaForce, Gary Nierengarten, Josh Pennington, Adam Thompson, Mark Anderson, Tim Notch, Jason Linkert, Mark Erickson, Patrick Neumann, John Maile, & Brian Dirks. (Not pictured: Lee Anderson & Craig Erickson.)

Program Management, Planning, and Compliance:

The EQ Team is comprised of managers and specialists with the expertise to comprehensively manage all compliance, conservation and sustainability goals for the MNARNG. In 2012, the Team launched the MNARNG Sustainability Working Group (SWG), which meets on a weekly basis to promote and track sustainability measures. The group is comprised of the Construction Facilities Management Officer (CFMO), Deputy CFMO, Physical Plant Director, the Energy Manager, and several environmental staff. The SWG is currently working on several initiatives, including a wind energy feasibility study and a solid waste audit at Camp Ripley.



The solid waste audit is intended to target the elimination of food waste from the solid waste stream in favor of composting. This effort also identified other waste streams that can be recycled. In addition, the EQCC was recently reformed as part of the Force Integration and Facilities Environmental Working Group which meets quarterly. In 2012, as a result of an external Environmental Performance Assessment System (EPAS) inspection, the Team introduced a direct tasking for all MNARNG units to undergo online eMS and sustainability training in order to increase awareness of environmental efforts and concerns.

The Team maintained all conventional management plans (hazardous waste management, spill management, wellhead protection, etc.) with annual reviews and regular updates, but in FY12 and FY13, the Team went above and beyond, completing the State Sustainability Plan and Joint Sustainability Plan, which outline goals and strategies for achieving benchmark reductions in energy use, increasing recycling, promoting carpooling and transit programs, and eliminating waste streams. The EQ Team has maintained an exceptional compliance record for the MNARNG, which in turn has fostered strong and cooperative relationships with state regulatory agencies. In FY12 and FY13, the MNARNG installation underwent 18 (announced & unannounced) regulatory inspections, with no findings of non-compliance. The Team works primarily with the Minnesota Pollution Control Agency (MPCA) on compliance activities and keeps all licensing or permitting current for stormwater, underground storage tanks, hazardous waste, and National Pollution Discharge Elimination System. Two Team members also sit on the state's Interagency Pollution Prevent Advisory Team, taking an active role in assisting state regulators to enhance sustainability statewide.



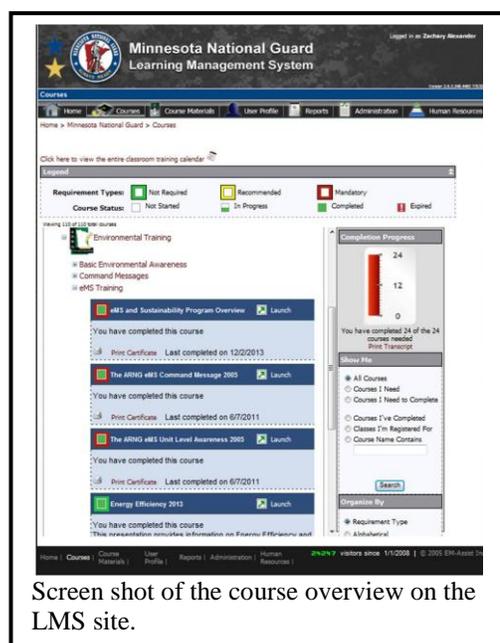
The Team's work generates significant cost savings and revenues for the MNARNG. The Team oversees the MNARNG's Qualified Recycling Program (QRP), which generates funding for the recycling program, pollution prevention/abatement projects, Morale Welfare and Receptions (MWR) activities, and energy-efficient updates like LED lighting replacement for fluorescent fixtures. QRP revenues for 2012 and 2013 were approximately \$1,000,000. In addition, by completing the Joint Sustainability Plan in-house, the Team saved the MNARNG thousands of dollars based on contractor estimates. In-house development of a material reuse program and NEPA tracking tool saved approximately \$20,000 and \$50,000, respectively, in 2013 (discussed further below). The Team also pursued supplemental funding for projects, such



as a \$1.9 million state grant to install a biomass heating system at Camp Ripley. The biomass will be generated at Camp Ripley and will greatly improve MNARNG’s use renewable energy.



EPAS and eMS: In support of its internal EPAS model for eMS audits, last year the Team developed a reciprocal internal auditing program with the Iowa Army National Guard (IAARNG) Environmental Office. A July 2012 external eMS audit revealed nine findings for corrective action, compared with 16 findings in the previous 2008 audit. As of this year’s audit with the IAARNG, these findings were all being addressed or closed out. The EQ Team conducts compliance inspections at all FMS’s, the two AASF’s, and over 60 percent of the armories per year. These visits allow the Team to immediately address potential issues and provide assistance or re-training as needed. Additionally, a Command Logistics Review Team (CLRT) Inspection in April 2013 designated the Team’s hazardous material management program (discussed below) as the only “noteworthy” finding.



Screen shot of the course overview on the LMS site.

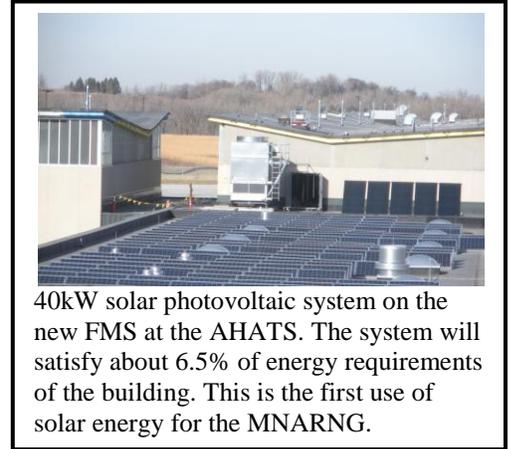
EQ Training: The Team’s success in maintaining compliance and furthering eMS goals is credited in part to its development of training resources. This year, the Team scripted and launched three new courses through the MNARNG Learning Management System (LMS), including training on energy efficiency, global harmonizing system, and Camp Ripley environmental management. Hosted on the MNARNG’s Sharepoint site, all Soldiers and employees can access the LMS, and the Team can notify staff to complete training and track users’ certifications. The system’s success has led the Human Resources branch to adopt it as their primary education tool. The Hazard Communication Standard (HCS) is now aligned with the Global Harmonizing System of Classification and Labeling of Chemicals (GHS). The MNARNG is adopting GHS and has developed a training module to prepare all staff for the change. Rather than running conventional classes for thousands of people, the Team is able to efficiently re-train MNARNG Soldiers and employees with just a few online class sessions.



Energy Conservation and Net Zero: The Team is committed to pursuing Net Zero energy status for the entire MNARNG, a significant aspect of eMS. In order to achieve Net Zero, the Team is focusing on sustainable infrastructure and reducing energy consumption by changing a culture of wasteful energy consumption habits. The Team partnered with the MPCA to hire a Green Corp intern at Camp Ripley to educate facility managers on methods to reduce energy consumption. This effort is enhanced by benchmarking facilities within the State of Minnesota’s buildings, benchmarks, and beyond (B3) program at all MNARNG facilities. The B3 program allows for real-time energy use tracking. All facility managers have access to this data, allowing them to compare their usage rates with historic use at the facility, as well as other armories across the state. An Energy Challenge program was developed to eligible facilities to encourage the 3% energy reduction as outlined in Executive Order 13423. The facility with the greatest energy intensity reduction will be awarded an energy efficient upgrade that is equivalent to the overall savings. The Team is pursuing renewable energy funding through partnerships with other

Federal agencies and the private sector to finance energy projects such as the biomass combined heat and power at Camp Ripley and a hydrokinetic energy project at AHATS. In addition:

- The Team developed a request for proposals with the Minnesota Department of Commerce to develop energy saving projects through the Guaranteed Energy Savings Program for three MNARNG facilities.
- The Team assisted in fielding a wind feasibility study at Camp Ripley to determine the viability of wind energy.
- The Team recommended and assisted with planning a 40kW solar photovoltaic system on the roof and solar thermal heating for water at the new AHATS FMS.
- Geothermal energy adoption has resulted in a 45% reduction in energy consumption for an existing billeting area and prompted a new horizontal geothermal system for the 70,000 square foot addition to the Education Center at Camp Ripley.
- Window glass with automatic lightening and darkening tinting features was used at the Pine City Armory. The Team is promoting Pine City as an example for other MNARNG facility upgrades. The locally produced windows results in less energy for lighting and greater HVAC efficiency. The glass used is made by a local company.
- A biomass district heating feasibility study for Camp Ripley was initiated and completed in 2013. The resulting project targets 7 buildings and will provide a totally renewable energy heating source that is fueled by woodchips generated at Camp Ripley from forest management and its wood waste as the source of biomass.
- As part of net-zero goals, the Team has advised facility managers in water use reduction and has promoted the installation of water conserving features; as a result, the MNARNG has reduced water usage by 26 percent based on a 2007 baseline and subsequently surpassing the 2 percent annual reduction goal. In addition to changes in habits, low flow water devices, leak detection/repair, and changes in irrigation practices have contributed to this reduction.



40kW solar photovoltaic system on the new FMS at the AHATS. The system will satisfy about 6.5% of energy requirements of the building. This is the first use of solar energy for the MNARNG.

"I applaud the Minnesota National Guard for their deliberate efforts to conquer the challenges of becoming a Net Zero installation in the areas of water, energy and solid waste. It is not only the right thing to do but it is in the best interest of our State and our Nation. I am especially excited to see that the Guard is exploring a variety of funding mechanisms to achieve this status."

--U.S. Senator Al Franken

Recycling: The Team oversees the QRP, which recycles brass, cardboard, paper, fiberboard, steel, aluminum, plastic, glass, and more recently, bituminous and concrete. The bituminous and concrete are used throughout Camp Ripley to construct roads and parking lots. The Team is completing a waste audit now to determine the viability of other wastes that could be diverted from landfilling. In FY12, the Team achieved a landfill diversion rate of 53% of all solid waste generated. Electronic waste is now being diverted as well by finding organizations that can reuse working computer equipment. In FY13, about 1800 pounds of computer equipment was distributed through the state quartermaster to a local elementary school. Also contributing to the diversion rate and QRP revenue was 60 tons of brass casings recycled in 2013. In addition, the Team runs a diversion program for wood reuse and manages a fuel wood program providing firewood from forestry activities on Camp Ripley to the families of deployed Soldiers.



Waste Stream Elimination: The Team successfully procured a liquid food composter aimed at eliminating food waste from its solid waste stream at Camp Ripley. This is part of the Team’s larger ongoing waste audit. In FY 13, the Team implemented a hazardous material exchange program that has redirected 9,000 pounds of hazardous materials that would otherwise have been treated as hazardous waste. The Team began tracking material usage and need as part of normal site visits throughout the state, rather than simply picking up unused materials for disposal. Viable materials not needed by one facility are now re-routed to a facility that can use them, thereby averting costs of about \$20,000 in purchasing and disposal. To encourage adoption of this program, the Team established an online bulletin board for facilities to list excess or needed materials for trade.



Water Resource Protection: In 2013, the Team completed an update to the Camp Ripley Wellhead Protection Plan (WHPP). This is the first such update completed in the state, establishing a model which could easily be adopted by small communities as a way to protect water sources. Under the guidelines of the Minnesota Department of Health (MDH), the wellhead protection planning process involves two parts: Part 1 involves delineation of the wellhead protection area and drinking water supply management area, as well as an assessment of the well(s) vulnerability; and Part 2 involves the creation of the wellhead protection plan itself, including goals, objectives, plan of action, evaluation program, and contingency plan. MDH deemed the EQ Team’s in-house update to be a benchmark document, the gold standard for all systems. The Team’s WHPP sets processes and standards for data collection, water and contaminant flow analysis, protective measures, buffering, well drilling, and sampling.



In addition to this benchmark plan, the Team completed a comprehensive stormwater management plan for AHATS that will facilitate and enhance future decisions relative to construction stormwater permitting. In partnership with Argonne National Laboratory, which also assisted on data collection for the WHPP, the Team created a model of pre-development hydrology as a goal for AHATS. Through a combination of retention, filtration, and appropriate placement of stormwater management structures, the Team will be able to guide future construction to have virtually no impact on natural stormwater flows.

Camp Ripley runs its own wastewater treatment plant, processing around 100,000 gallons daily (though the plant is permitted for 1.4 million gallons/day). Over FY13, the EQ Team assisted with infrastructure upgrades, advising on the replacement of piping to allow for installation of a return pipe for clean effluent water to be used in irrigation and aquifer recharge rather than simply returning the cleaned water to the Mississippi River. Several years ago, 120 inconclusive findings suggested that Camp Ripley contained several Mississippi River outflows that could contain munitions constituents of concern. MNARNG conducted an assessment and along with the EQ Team, implemented the Operational Range Assessment (ORA), completing phase 2 of this program this year. The Team collected 24-hour samples at the outflow points, successfully demonstrating that no munitions constituents were leaving the training site. The study also determined that Camp Ripley’s best management practices, such as backstop lead cleaning, avoidance of wetlands and rivers, and water monitoring, are models that should be adopted at other training sites. The Team’s effort on ORA included five down-range comprehensive water quality studies and led to a partnership with Brainerd Central Lakes College to continue monitoring of surface waters on post. Monitoring of 40 wells in the range area allows the Team to quickly catch any contaminant issues and has demonstrated that Camp Ripley’s water quality is better than that of its neighbors.

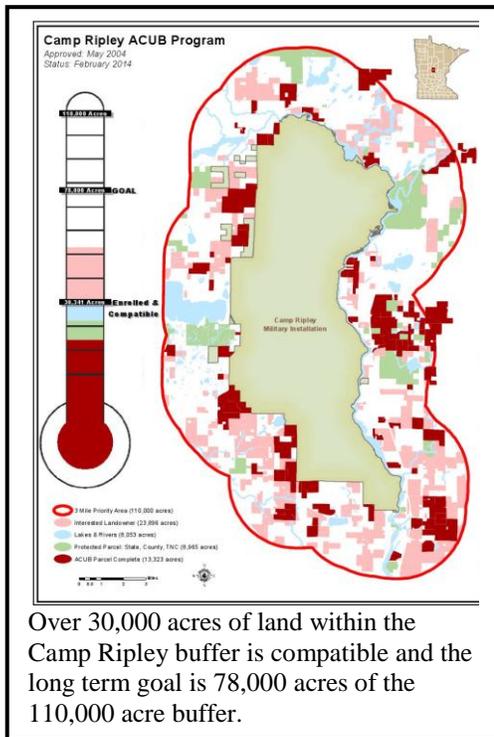




NEPA and ACUB: Everything the EQ Team undertakes is in service to the MNARNG mission and sustainable training. Compliance support ensures that training sites and facilities will not be impeded by regulatory issues. Training programs help Soldiers and staff to meet EQ benchmarks and perform their jobs more safely and efficiently. Recycling, waste stream reduction, and energy conservation all help to stretch the MNARNG’s resources further and make the organization more self-reliant. The EQ Team’s National Environmental Policy Act (NEPA) work is essential to the MNARNG mission and the environmental clearance of new training initiatives or facility construction. In 2012, the Team created a NEPA tracking system in-house, which allows them to monitor the status of all environmental review documents and establish log-ins so that all documentation can be thoroughly shared and reviewed among decision-makers. The documents can be linked and uploaded within the system as well, establishing a lasting record of every action. By creating this in-house, the Team avoided the estimated contracting costs of about \$50,000.

Several EQ Team members are significantly involved in the Camp Ripley ACUB program,

which is essential for preserving training capabilities and has been an exemplar for the Guard community, with great success in landowner, conservation organization, and government partnerships to achieve large purchase and easement agreements. This year, \$1.45 million in special dedicated state funds was secured in support of the Camp Ripley ACUB, and 13 land deals permanently protecting 728 acres in the buffer zone were completed. The 600-acre Little Nokasippi River Wildlife Management Area, made possible by the ACUB program and dedicated in 2013, is a perfect example of protecting the mission while providing a precious resource for the public to enjoy forever. Meanwhile, the list of ACUB- interested landowners has grown to 233 land owners representing 32,600 acres of land. With this success, EQ Team member Marty Skoglund was selected to lead an ACUB Working Group for National Guard Bureau. The working group stands to serve the mission of not only the MNARNG, but many other Army National Guard installations facing encroachment issues. The first undertaking of the working group in 2013 was to improve proposal techniques and make Army National Guard ACUB proposals more definitive from



a funding perspective when being compared against other military services, rather than against each other. The working group is working to have Guard representation in the proposal review process through the Department of Defense to ensure panel familiarity with the needs of Army Guard installations.



The EQ Team’s expertise in ACUB is a highly transferable aspect of the MNARNG program, which stands to benefit many other state Guards. The Team’s EQ program was featured last year in Guard Bureau’s first eMS video production, highlighting the Team’s practices. By establishing a reciprocal eMS auditing program with IAARNG, the Team is sharing its best management practices while learning from others. As described above, water quality practices and the processes involved in conducting the ORA are models other state Guards could adopt. Within the state, the EQ Team’s programs, approaches, and planning documents continue to be

expanded to other agencies and organizations. Internally, the EQ Team ensures program continuity through training, eMS, EPAS, extensive record-keeping (such as the NEPA Tracker), and comprehensive EQ program planning.



Morrison County Water Festival. Here the student are learning about the operation of the Camp Ripley wastewater treatment plant.

Outreach and Interaction: Community outreach and support is a way of life for all members of the EQ Team. At every opportunity, the Team members strive to highlight the excellent environmental stewardship of the MNARNG and the compatibility of MNARNG's mission with environmental goals. In 2013, Team members participated in a National Geographic production on the wildlife and environmental conservation of Camp Ripley along the Mississippi River. The EQ Team is responsible for a community outreach that impacts over 5,000 visitors through approximately 200 separate venues each year. Over the past two years, Team members have been responsible for several significant outreach projects such as:

- Expanded hunting recreational opportunities for Disabled American Veterans, youth, and recently deployed Soldiers; hosted a water festival for approximately 500 sixth graders throughout Morrison County; and instituted an "Adopt a Highway" program in the name of MNARNG's environmental program.
- Executed interagency agreements in 2012 and 2013 with Minnesota State Colleges and Universities for conducting conservation and compliance projects. Brainerd Central Lakes College and Saint Cloud State University are the primary institutions that were used to conduct animal monitoring/studies, water quality monitoring, invasive species management, and solid waste stream analysis. These partnerships simultaneously benefit students in their education and hands-on experience opportunities, provide the MNARNG with quality data furthering the military mission, and contribute to the quality of knowledge in the environmental fields.
- Publish an environmental newsletter, *The Steward*, on a quarterly basis and distribute throughout the entire MN National Guard and to NGB-ILE.

In addition, the Team's partnerships with state agencies further enhance the prestige of the MNARNG as an environmental leader. Team members sit on the Interagency Pollution Prevention Advisory Team (IPPAT), which draws from agencies throughout the state to provide input on EQ and sustainability initiatives, targets, and goals. The IPPAT also provides guidance to the Governor of Minnesota on the continual improvement of Executive Orders in relation to sustainable practices.. In every aspect of its activities, the EQ Team prioritizes running a fully transparent program characterized by partnership and community engagement.

"Thanks to its outstanding environmental research, management and education programs, Camp Ripley provides excellent habitat for red-shouldered hawks, hooded warblers, Blanding's turtles, black bears and other native plants and wildlife. We are proud to call Camp Ripley a good neighbor and a key partner in the Conservancy's efforts to help protect Minnesota's most ecologically significant lands and waters, particularly the Mississippi River, which provides clean drinking water and irreplaceable wildlife habitat."

--Peggy Ladner, Director of The Nature Conservancy in Minnesota.