

**Association of State and Territorial**  
***ASTSWMO***  
**Solid Waste Management Officials**

**ASTSWMO's mission is to enhance and promote effective State and Territorial waste management programs and affect national waste management policies.**



**FINAL SYMPOSIUM PROCEEDINGS**  
**Munitions Symposium**  
**March 4-5, 2009**

**Sheraton Gunter Hotel**  
**San Antonio, Texas**

# ASTSWMO Munitions Symposium

**Wednesday, March 4, 2009**

## **WELCOME SESSION**

Moderated by: Jennifer Roberts, AK

The 2009 ASTSWMO Munitions Symposium provided a forum for States, Territories, U.S. Environmental Protection Agency (EPA), Department of Defense (DoD) and other stakeholders to learn about and discuss various policy and technical issues associated with munitions response programs. This session kicked off ASTSWMO's 2008 Federal Facilities Managers Symposium with welcoming remarks from ASTSWMO, the State of Texas, U.S. EPA, and DoD representatives. DoD also provided an overview and the status of its Military Munitions Response Program (MMRP).

**ASTSWMO:** Gary Baughman, ASTSWMO Vice-President

**State of Texas:** Brent Wade, Director, Remediation Division, Texas Commission on Environmental Quality (TCEQ)

**U.S. EPA:** John Reeder, Director, U.S. EPA Federal Facilities Restoration and Reuse Office (FFRRO)

### Presentation:

**DoD:** Maureen Sullivan, Director, Environmental Management, Office of the Deputy Under Secretary of Defense (OSD)

The status of the MMRP was presented. DoD implemented the MMRP to manage environmental responses to unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC). The MMRP seeks to protect human and environmental health while providing a medium that will help DoD attain a better understanding of the response requirements at munitions response sites (other than operational ranges) known or suspected to contain UXO, DMM, or MC. The MMRP also increases the transparency of munitions response costs throughout the planning, programming, budgeting, and execution process.

---

## **INTERFACING WITH THE COMMUNITY**

Moderated by: Isabella Alasti, CA

This session presented steps being taken by State and Federal agencies to educate community members of the potential hazards associated with munitions and munitions response sites.

## **Explosives and Munitions Emergency Response**

J.C. King, U.S. Army

## **Bombs Away in Orlando - The Importance of Communication During Munitions Removal at Middle School**

Nancy J. Sticht, U.S. Army Corps of Engineers (USACE) Jacksonville District

The cleanup of a Formerly Used Defense Site (FUDS) in Orlando instantly generated public, government and media interest, particularly when munitions were recovered from a middle school athletic field and surrounding residential and undeveloped properties. Communication strategies employed by the USACE, as it managed the cleanup on behalf of the Department of the Army, played a key role in informing stakeholders, providing public participation opportunities and maintaining calm in a new development near Orlando International Airport. A brief case study of the project and related communication efforts was presented.

## **Challenges Facing a Community with Former Military Ordnance and Massachusetts's Interim Assistance**

Anne Malewicz, MA, and Tom Rancich, LCDR Ret., VRHabilis

Communities that have FUDS with military ordnance often are challenged by discovery, appropriate management and the safety concerns associated with this potential hazard. Massachusetts has designed and implemented an interim plan to assist an island community address these concerns. This presentation reviewed the specific challenges and the steps Massachusetts is taking to alleviate the problem including training, establishing a response protocol, and conducting an initial surface survey of the impacted areas. The presentation provided some broader thoughts about protecting the public in communities that are dealing with former military ordnance via an interim plan until remediation can be conducted.

---

## **STATUS OF MILITARY MUNITIONS RESPONSE PROGRAMS**

Moderated by: Bonnie Buthker, OH, and Richard Gottlieb, RI

This session expanded upon Maureen Sullivan's opening remarks. Leaders from four DoD Components provided the status of their MMRPs and related cleanup and restoration programs.

### **Department of Air Force MMRP**

Steven J. LaFreniere, U.S. Air Force

This presentation provided an overview of the Department of Air Force's implementation of the MMRP. The Air Force executes the MMRP on Active and Base Realignment and Closure (BRAC) installations to address UXO, DMM, and MC.

### **Department of Army MMRP**

John E. Tesner, Jr. PE, U.S. Army

This presentation provided an overview of the Department of Army's implementation of the MMRP. The Army executes the MMRP on Active, (BRAC, Excess installations and FUDS properties to implement environmental responses to UXO, DMM, and MC.

### **Department of Navy MMRP**

Richard Mach, Jr., U.S. Navy

This presentation provided an overview of the Department of Navy's implementation of the MMRP and program initiatives. The U.S. Navy executes the MMRP on all active and BRAC installations to implement environmental responses to address UXO, DMM, and MC. The Navy's MMRP program is proceeding on schedule to identify, assess, prioritize, investigate, and remediate munitions sites on active and closing Navy and Marine Corps installations.

### **National Guard Bureau's Cleanup and Restoration Programs**

Ann M. Wood, National Guard Bureau

The Cleanup and Restoration Branch in the Environmental Programs Division at the National Guard Bureau provides environmental leadership and support to the Army National Guard in 54 States and Territories. The current status of the Army National Guard's MMRP, Compliance-related Cleanup (CC), and the Non-Department of Defense Non-Operational Defense Sites Inventory (NDNODS) was presented.

---

### **LUNCH PRESENTATION: SERDP and ESTCP UXO INITIATIVES**

Herb Nelson, SERDP/ESTCP

The Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) are DoD's environmental technology programs. SERDP and ESTCP address environmental matters of concern to DoD through funding for basic and applied research and development and demonstration/validation of technologies that can enhance the capabilities of DoD to meet its environmental obligations. Over the last several years, the Munitions Management Focus Area of ESTCP has sponsored a number of demonstrations of promising technologies at live sites. Highlights of these demonstrations were presented and research directions for the future summarized.

---

### **STATE CASE STUDIES**

Moderated by: Ed Southwick, NE

This session provided examples of ongoing and completed munitions response sites in three States, while highlighting the challenges, successes and lessons learned at each site.

## **Fort Ord Munitions Remediation Case Study**

Rick Moss, CA

Fort Ord was formally established in 1917 by the U.S. Army. Its local topography became ideal as an infantry training center for soldiers heading overseas to wage and win two world wars. From 1947 to 1975, the site was employed as a basic training center and ordnance training was a major part of that training. After 1975, Fort Ord was used to train infantry troops until it was selected for decommission in 1991 and ultimately closed in 1994. It was soon after the 1988 BRAC that U.S. EPA and the State of California Department of Toxic Substances Control initiated oversight of the remediation at Fort Ord including the munitions and explosives of concern (MEC) cleanup. This presentation addressed the history of Fort Ord, the cleanup of MEC and the transfer and reuse of the base.

## **Successful Cleanup of the Explosive Ordnance Disposal (EOD) Range at the Former Lowry Training Annex (FLTA), Arapahoe County, Colorado**

Jeff Swanson PE, CO

The investigation and cleanup of MEC at former military EOD ranges presents unique challenges within the munitions response program. The FLTA EOD Range is the site of a recently completed MEC Non-Time Critical Removal Action. The successful cleanup of this EOD range to support future residential development was presented as a case study to illustrate specific major aspects of an EOD range cleanup and to highlight from the States' perspective the key challenges and lessons learned from the site.

## **Challenges in Dealing with Explosively Contaminated Buildings at the Ravenna Army Ammunition Plant**

Todd R. Fisher, OH

This presentation highlighted the challenges at the cleanup of the Ravenna Army Ammunition Plant (RVAAP). This site is a 21,683 acre former load, assemble, and pack plant that was operational during World War II, Korea, and Vietnam eras. The government-owned and contractor-operated industrial facility (GOCO) consisted of 12 load lines: Load Lines 1-4 that were used to melt and load 2,4,6-TNT and Composition B into large-caliber shells and bombs; Load Lines 5-11 that manufactured fuzes, primers, and boosters; and Load Line 12 which was used to produce ammonium nitrate for explosives and fertilizers. Load Lines 1, 2, 3, and 12 were also used for demilitarization purposes which included disassembly of munitions and explosives melt-out and recovery operations using hot water and steam processes. Some of the challenges that the Army has dealt with concerning these buildings include: contaminated process piping, contaminated floor drains and sumps; paint chips that are characteristic hazardous waste; mercury switches; PCBs in painted surfaces; and transite siding attached with lead bolts. In addition, due to the type of operations conducted at this site, there is a concern that there may be explosively contaminated soil underneath building slabs as well.

---

## **TOOLS FOR PLANNING AND SAMPLING AT MUNITIONS RESPONSE SITES**

Moderated by: Allan Posnick, TX

### **EPA Method 8330B: Characterization of Energetic Residues on Military Training Ranges**

Alan D. Hewitt, U.S. Army ERDC-CRREL

Energetic residues are heterogeneously distributed over military training ranges as particles with various sizes, shapes and compositions. To address the compositional and distributional heterogeneity associated with the distribution of particles and to obtain representative mean energetic residue soil concentrations, the sampling strategy must strive to acquire samples that contain the constituents of concern in the same proportion to the bulk matrix present within the decision unit (sampled area, population, exposure unit). This objective has been frequently been achieved with samples having a mass greater than 1 kg and composed of 30 or more increments collected starting at a randomly selected position followed by evenly spaced locations throughout the sampling area. To ensure that the subsample taken for analysis of energetic residues is representative of the sample, the field sample must be processed thoroughly. This objective has routinely been accomplished when the entire sample was air-dried, sieved, and the less than 2-mm portion mechanically pulverized prior to splitting or sub-sampling.

Experiences gained through more than 25 training range studies conducted by ERDC-CRREL and others under the SERDP (ER-1155 and ER-1481) and Corps of Engineers Distributed Source Program led to the development and posting of Method 8330B. To promote conformity among various government agencies, the ESTCP (ER-0628) program has held several workshops, conducted two field demonstrations, published a general guidance document (<http://www.crrel.usace.army.mil/library/technicalreports/ERDC-CRREL-TR-07-10.pdf>), and supported numerous invited presentations to different government agencies. This presentation summarized the sample processing protocols recommend in Method 8330B, highlighting their impacts on data quality.

### **Application of the UFP-QAPP to Munitions Response Sites**

Kevin Oates, U.S. EPA FFRRO

The UFP-QAPP provides specific instructions and templates for preparing Quality Assurance Project Plans (QAPPs). The UFP-QAPP documents the development of project-specific quality objectives using a *Systematic Planning Process*. It accommodates the principle of the *Graded Approach*, in which the level of quality is matched to the intended uses of the data and importance of the decisions to be made.

### **Using Quality Control to Achieve Acceptance of Munitions Response Projects**

Jim Pastorick, UXO Pro, Inc.

Maintaining high quality on munitions response projects presents some unique challenges for contractors, project managers and regulators. This presentation identified the common challenges that must be overcome to increase stakeholder confidence that the quality of the munitions response project is adequate to demonstrate that the project site is acceptable for the intended end land use.

**Thursday, March 5, 2009**

## **WATER RANGES AND SEA DISPOAL OF MUNITIONS**

Moderated by: John Fairbank, MD

This session presented an overview of DoD's water range policies, and provided the audience with examples of site-specific activities at munitions response sites in two States.

### **Approaches for Addressing Underwater Military Munitions**

J.C. King, U.S. Army

### **Wide Area Assessment on the Water Ranges at the Blossom Point Research Facility, MD**

Herb Nelson, SERDP/ESTCP

To facilitate the transition of innovative technologies to use on munitions response sites, ESTCP established the Munitions Response Innovative Technology Transfer Initiative in FY2007 under the direction of Congress. One of the sites chosen for demonstration was the Army Research Laboratory's Blossom Point Research Facility in Welcome, MD. In conjunction with a planned EE/CA on the land portion of Blossom Point, ESTCP sponsored a marine survey of the historical water ranges using the SAIC Marine Towed Array. The 5-m wide magnetometer array surveyed nearly 350 line-km of transects, corresponding to 4% coverage of the site. An area of high anomaly density was selected for a 100% coverage survey to better define the target area. Approximately 120 items were chosen for intrusive investigation to validate the survey results. A summary of the survey planning, results, and validation was presented.

### **Use of an Underwater Developmental Research Survey to Address Concerns with Munitions in Lake Erie**

Bonnie Buthker, OH

This presentation provided an overview of underwater munitions research being conducted at the former Erie Army Depot. The Depot operated from 1918 until 1967 as a proving ground for various weapons and weapon systems. During its operation, live and inert rounds were fired into impact areas near and in Lake Erie, extending off-shore for many miles. Ordnance and munitions debris washes up along the beach of the former depot. Ordnance has also been found on First Energy (Davis-Besse) property, on the beaches of Camp Perry, and in the mouth of the Toussaint River, a navigational channel which is dredged by the local marina association on a routine basis. In 2006, ESTCP was funded to conduct an assessment of munitions contamination at the former Erie Army Depot. Using a helicopter mounted geophysical detector, they found 2000 anomalies (both live ordnance and munitions debris) close to the shoreline. Since the helicopter crashed before the survey was completed (approximately 80% done), this number may be higher. They also found over 300,000 anomalies within 8,000 acres of the lake impact area. Ohio EPA is working with the U.S. Army Corps of Engineers to use the Lake Erie Survey to scope the remedial investigation planned under FUDS for the former Erie Army Depot/Locust Point Firing Area site. Ohio EPA is also using this study to work with community and public officials to develop an overall strategy for dealing with the MEC issues present in this area.

## **QUESTION AND ANSWER FORUM**

This session offered attendees the opportunity for candid, closed-door discussions on State and Federal program funding, the changing nature of munitions response cleanups, long-term operation and maintenance costs and strategies, and other topics submitted by attendees.

---

### **TRAINING SESSION: MEC HAZARD ASSESSMENT (MEC HA)**

Moderated by Clarence Smith, IL

**Instructors:** Kevin Oates and Doug Maddox, U.S. EPA FFRRO

The MEC HA Methodology is the product of a multi-agency effort to develop a consensus methodology to evaluate baseline explosive hazards at munitions response sites (MRS). The MEC HA Methodology can also be used to evaluate baseline conditions associated with changes in future use, as well as relative reductions to explosive hazards with the application of land use controls, surface clearance or subsurface clearance of MEC, or combinations of these under CERCLA removal or remedial response actions. The training program provided an overview of the MEC HA Methodology document, and presented the "Camp Sample" example case study on the application of the MEC HA Methodology.