UTAH NATIONAL GUARD

MUNITIONS REVIEW

News of the MMRP project at Camp Williams, Utah

August 2012

Camp Williams RAB community co-chair

Filling up free time with voluntary positions isn't for everyone, but for Sandra Steele, a Saratoga Springs resident, volunteering in her community has been and continues to be a priority. Steele has served on the Camp Williams Restoration Advisory Board, or RAB, since its formation in January 2010 and was recently appointed as the community co-chair for the RAB.

This isn't Steele's first time on a RAB. She has had previous experience on other advisory boards and environmental committees and served as the community co-chair for the March Air Force Base RAB in 1997. She enjoys being an active part of her community and was happy for the chance to serve on the Camp Williams RAB.

“I became involved with Camp Williams RAB because I had served on a technical review committee at March Air Force Base when I lived in Moreno Valley, Calif.,” said Steele. The committee transitioned into one of the first Restoration Advisory Boards in the 1990s. I felt that as a member of a community that was adjacent to Camp Williams, I should put my previous experience to good use.”

Steele's experience was gained over almost 10 years while serving on the March Air Force Base RAB. During that time, she gained an understanding of the important part a RAB can play in an environmental cleanup.

“I believe that a RAB is vitally important to keep communities surrounding the installation informed about the progress of environmental investigations and cleanups,” said Steele. “Many times installations are kept so secure that citizens see only tall fences and security guards and aren't aware of the mission of the installation. A RAB can help educate the public about the mission of the installation.”

The Utah National Guard (UTNG) agrees that a RAB is a helpful addition to their efforts to administer the Military Munitions Response Program (MMRP), a program aimed at eliminating hazards that may be present from past military training activities.

“Advisory boards are a valuable addition to any environmental investigation because they encourage the public's participation when their opinions are important and needed,” said Robert Price, the MMRP Technical Lead for the Utah National Guard. “RAB members can bring concerns and opinions to the UTNG earlier in the decision-making process, which allows for plans to be amended based upon community concerns, if necessary.”

Sandra Steele, the Camp Williams RAB community co-chair, at a recent Live Fire Exercise held at Camp Williams.

As the MMRP project taking place at Camp Williams nears a stage where public input is needed, Steele is hopeful the RAB will be an asset. “I hope that the Camp Williams RAB can provide the needed advice to the UTNG to assist them in their decision-making process,” said Steele. “I also hope that we as a RAB can convey to our communities that the UTNG cares and is doing everything in their power to make sure our communities are safe from the impacts of historic weapons use.”

Steele hopes that community members will feel free to contact her with questions or concerns about the MMRP. She can be reached by email at ssteele@campwilliamsrab.org. The RAB is co-chaired by the Utah National Guard Environmental Program Manager, Robert Price, and Ms. Steele. The co-chairs work together to prepare and plan RAB meetings and handle other RAB-related business.

Time-Critical Removal Action

November and December would not be considered an ideal time to be traversing frozen ground in search of munitions. However, waiting for ideal weather was not a choice for the time-critical removal action crew. A time-critical removal action generally comes in response to hazards or special circumstances at a site, which prompt a faster removal, leaving little time for waiting.

A time-critical removal action was completed at the Wood Hollow Training Area and the Artillery Impact Area Buffer Zone Munitions Response Sites in November and December 2011. Results are discussed below.

Wood Hollow Training Area

The Wood Hollow Training Area is comprised of low-lying hills and ridges along the northeast boundary of Camp Williams, near the cities of Bluffdale and Herriman. This site is also near a mining project being carried out by Staker Parson Companies. The area is being mined for rock materials that are used in construction and landscaping projects.

"This mining project is what prompted the time-critical removal action at Wood Hollow," said Robert Price, the MMRP technical lead for the UTNG. "Staker Parson Companies is in the process of building a new mining access road that will cut through a portion of the site where there is potential for munitions to be present. They need the access road to further their mining project. We wanted to ensure the area where the road is being built is free of munitions hazards, making the investigation at a portion of the site time critical."

The time-critical removal action at the Wood Hollow Training Area involved a surface and subsurface removal of munitions and munitions debris at about 31 acres of land. To look for potentially buried items, Digital Geophysical Mapping (DGM) was used. The DGM survey identified 4,815 anomalies, or potentially buried munitions or munitions debris. Each of those anomalies were intrusively investigated, or dug up. Six of the anomalies were classified as munitions of concern, but most ended up being harmless munitions debris or civilian debris such as cans, wire, horseshoes, and other metal objects not related to munitions.

Items found at the Wood Hollow Training Area

Munitions and Explosives of Concern	Munitions Debris (Artillery fragments, expended munitions)	Civilian Debris (Cans, wire, horseshoes, other metal objects)
Six items found, moved to one location and detonated in place.	1,615.5 pounds of munitions debris. Sent to recycler for disposal.	82.75 pounds of civilian debris. Sent to recycler for disposal.

Artillery Impact Area Buffer Zone

The Artillery Impact Area Buffer Zone is located immediately north of Camp Williams, near the northwestern corner of the installation. A portion of this site was affected by the September 2010 wildfire that began on the Camp Williams installation, and burned northward. One hundred sixty-six acres of land affected by the wildfire were included in the TCRA.

A member of the TCRA crew transporting a munitions item to Camp Williams for disposal.

"The vegetation at this site is very thick, which makes it difficult to traverse the terrain with munitions detection equipment, and usually requires some brush cutting, said Price. "In areas where the wildfire burned, the vegetation has just begun to grow back, but is not as thick as it usually would be. We used the sparse vegetation to our advantage." The sparse vegetation allowed field crews to see the ground more clearly without the inconvenience of brush cutting and also made it easier to maneuver munitions-detection equipment in the area.

The TCRA at the Artillery Impact Area Buffer Zone involved a surface removal of munitions and munitions debris. To assist with the surface removal, hand-held metal detectors were used.

Items found at the Artillery Impact Area Buffer Zone

Munitions and Explosives of Concern	Munitions Debris (Artillery fragments, expended munitions)	Civilian Debris (Cans, wire, horseshoes, other metal objects)
Four items found, moved to Camp Williams to be detonated.	93.5 pounds of munitions debris. Sent to recycler for disposal.	No civilian debris was found at this site.

The close proximity of a residential area made it necessary to dispose of hazardous munitions items, known as Munitions and Explosives of Concern (MEC), found at the Artillery Impact Area Buffer Zone in a way that would not impact homeowners. "The MEC items found at the Artillery Impact Area Buffer Zone were too large to detonate on site without affecting homeowners," said Price. "When MEC items were found, the items were guarded until they could be safely transported to Camp Williams for disposal. Some MEC items were carried almost a half mile to Camp Williams property for disposal."

What is the Next Step?

The TCRA's findings support conclusions from previous investigations, which projected that very few munitions would be present at the sites. "We expected a low density of munitions would be present at both sites," said Price. "We also expected most munitions would be located on the surface or would be shallowly buried in the subsurface. The TCRA confirmed this and will help us develop our approach for future investigations"

The next step for these two sites will be a feasibility study, which will evaluate possible alternatives that may be used to eliminate hazards from the other portions of the sites that were not included in the TCRA.

"Once the UTNG determines what it believes to be the best alternative, it will submit a proposal, called the Proposed Plan, to the Utah Department of Environmental Quality for approval and to the public for comment," said Price. The Proposed Plan outlines the UTNG's preferred method for cleaning up the site and provides a summary of the other cleanup alternatives considered for the site. Alternatives for the sites are currently being developed. The proposed plan should be released in Fall 2012.

New RAB members for Herriman

The Camp Williams RAB recently welcomed two new members representing Herriman community. Mr. Alan Paxton will serve as the primary member and Michael McKinley will serve as the alternate. Mr. Paxton can be reached at apaxton@campwilliamsrab.org and Mr McKinley can be reached at mmckinley@campwilliamsrab.org.

Project Update

Site Name	Investigation Stage	Results of Remedial Investigation	Status of Site
Southeast Area	Completed Remedial Investigation	During the Remedial Investigation, munitions-related items such as: communication wire, grommets that protect the rotating bands, shipping lugs, empty fuse containers, and expended M82 primers were found. The site was found to have no elevated risks related to explosives or munitions-related contamination.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for No Further Action. Decision Document for No Further Action decision being drafted.
Southwest Area	Completed Remedial Investigation	During the Remedial Investigation, artillery fragments were found, but were determined to be related to on-post munitions use at Camp Williams. The site was found to have no elevated risks related to explosives or munitions-related contamination.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for No Further Action. Decision Document for No Further Action decision being drafted.
Southeast Simulated Attack Area	Completed Remedial Investigation	During the Remedial Investigation, 5.56mm and 7.62mm small-arms blanks as well as range-realted debris such as: a lid to a C-Ration can and several ammunition links were discovered. The site was found to have no elevated risks related to explosives or munitions-related contamination.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for No Further Action. Decision Document for No Further Action decision being drafted.
Wood Hollow Training Area	Completed Remedial Investigation	During the Remedial Investigation munitions debris (artillery fragments), and munitions and explosives of concern, 75mm, and to a lesser extent, 37mm artillery shells were discovered.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for the site to undergo further investigation and proceed with a Feasibility Study, where various alternatives for eliminating munitions hazards are evaluated. Following the Feasibility Study, the UTNG will select a preferred cleanup alternative, which will be presented to the public for review and comment.
**NEW Rose Canyon Training Area	Completed Remedial Investigation	During the Remedial Investigation a 155mm artillery projectile and several other pieces of artillery munitions debris were found farther to the south near the adjacent Artillery Impact Area Buffer Zone MRS and closer to the Camp Williams boundary.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for No Further Action. Decision Document for No Further Action decision being drafted.
**NEW Artillery Impact Area Buffer Zone	Completed Remedial Investigation	During the Remedial Investigation one live 155mm projectile and expended 155mm illumination projectiles were found, along with abundant fragments from artillery projectiles.	Remedial Investigation report complete. Concurrence received from UDEQ regulators for the site to undergo further investigation and proceed with a Feasibility Study, where various alternatives for eliminating munitions hazards are evaluated. Following the Feasibility Study, the UTNG will select a preferred cleanup alternative, which will be presented to the public for review and comment.

**The boundaries of the Rose Canyon Training Area and the Artillery Impact Area Buffer Zone were revised based on the results of the Remedial Investigation. Munitions of concern and munitions debris discovered during the Remedial Investigation of both sites were all found within a limited area of land that straddles the boundary between the two sites and lies just north of the Camp Williams boundary. No other munitions or evidence of military use was found in either of the two sites outside of this limited area, measuring 800 acres. For this reason, the UTNG revised the boundary of both sites, such that the 800-acre munitions contaminated area will form the NEW Artillery Impact Area Buffer Zone, and the remaining areas with no munitions contamination will become the NEW Rose Canyon Training Area.

Digital Geophysical Mapping

Two Camp Williams Military Munitions Response Program (MMRP) sites have been recommended to proceed to the next investigation stage and undergo a Feasibility Study to determine the most appropriate way to cleanup potential hazards at the sites. As part of the Feasibility Study, a process known as Digital Geophysical Mapping (DGM) will be evaluated as a potential Remedial Alternative.

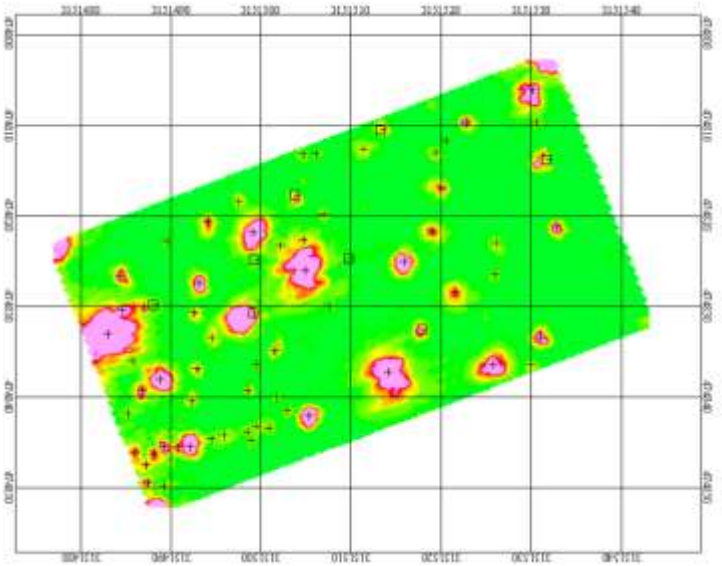
DGM is a common process used at MMRP sites where there is potential for buried munitions. DGM utilizes highly specialized instruments that are able to distinguish the physical makeup of buried munitions from that of the surrounding environment, helping to identify anomalies, or metallic items, that may be buried munitions. The instrument records and stores the anomalies and tags them with coordinates generated by the device's global positioning system, or GPS. The coordinates are later downloaded to special software that generates a map showing the location of each anomaly.

The anomaly map created during the DGM process will, in a sense, allow the UTNG to see what is buried beneath the surface. However, creating the map is not an easy thing. The DGM process requires a lot of time and planning. Before an area of concern can be surveyed and mapped, technicians must select the proper geophysical instrument and appropriate survey method.

For the UTNG, several different factors have to be considered before selecting the right geophysical instrument for use at the Camp Williams MMRP sites. “Steep terrain and thick brush cover make it necessary for us to find an instrument that is easy to carry and has a slim profile to fit between the vegetation,” said Robert Price the MMRP technical lead for the UTNG. Price said the EMU 7.1 geophysical instrument has been used at Camp Williams during other investigation stages and would likely be DGM instrument selected for the Remedial Action. The EMU has the ability to distinguish between metallic objects and volcanic rocks, which contain small amounts of iron and often confuse lesser instruments.

Once the geophysical instrument is selected, technicians test it using a method called geophysical prove-out. Seed items, items similar in size and shape to munitions, are buried in known locations at different depths and orientations to test the accuracy of the geophysical instrument and to provide examples of detections that could represent buried munitions. If the selected geophysical instrument performs as desired during the Geophysical Prove Out, the DGM can commence.

“We used DGM previously at the Wood Hollow Training Area and Artillery Impact Area Buffer Zone, during the Remedial Investigation,” said Price. “At that time we were using DGM surveys to establish the nature and extent of buried munitions, not to find all potentially buried munitions. During the Remedial Action, we may use DGM in a greater extent to find and remove buried munitions.”



Anomaly map created during the DGM process.

If selected as a Remedial Alternative, the areas of concern at the Wood Hollow Training Area and Artillery Impact Area Buffer Zone MRSs will be split up into a ground-based grid system to track the positions of collected data and to create a map of the survey. Then, a survey crew will walk each grid using the geophysical instrument and GPS positioning to digitally map and record anomalies, located within that grid.

“Once the survey crew has walked the grids, the data recorded by the geophysical instruments is sent to a team that uses the data to identify anomalies that may represent buried munitions,” said Price. Then an anomaly map is created. An example of an anomaly map is shown below.

According to Price, the next step would have crews carefully digging at the locations identified on the anomaly map to determine what the anomaly is. He said often the anomaly turns out to be nothing more than an old horseshoe or can--what he refers to as “civilian debris.” If it is buried munitions, however, crews would identify the item and mark it for removal and disposal. In some cases the anomalies may be civilian debris such as horseshoes, cans, wire, or other metallic non-munitions-related objects. In other cases the anomalies may be buried munitions.”

Feasibility studies for the Wood Hollow Training Area and the Artillery Impact Area Buffer Zone will commence Summer 2012 and will evaluate the DGM process as a Remedial Alternative to identify potentially buried munitions.