

**Ravenna Army Ammunition Plant  
Restoration Advisory Board (RAB)  
Meeting Minutes  
February 14, 2001**

**1. Call to Order and Reading of Minutes**

The meeting was called to order by Lt. Lt. Col. Tom Tadsen at the Freedom Town Hall, Freedom Township, Ohio at 6:12 p.m. Secretary Denise Gilliam took attendance with 17 present, 3 excused and 4 absent (Mr. Jay Abercrombie, Ms. Barbara Andreas, Mr. Edward Boles and Ms. Nina Miller). Lt. Col. Tadsen made the motion to suspend the reading of the minutes, seconded by Mr. Walter Landor. The motion was passed.

**2. General Business**

Mr. Patterson welcomed URS (RAB elected TAPP provider) to the meeting. Representatives present were Ms. Janet Bishop, Mr. Bill Parlane and Ms. Joanne ?. These individuals will meet with Dr. Craig at some point in the near future. Lt. Col. Tadsen informed them that they will have their hands full but the experience should be enjoyable. Mr. Patterson stated that the TAPP application had been approved. He said that the principal focus of URS would be to review and advise the board on the ecological risk assessment at the Winklepeck Burning Grounds. He stated that the final document is going through the last stage of the internal review process. He stated that he expected it to be released at some point in April. He stated that he would provide space within the agenda to give them an overview of what has been happening.

**3. Review of Meeting with Portage and Trumbull County Board of Commissioners.**

Ms. Marti Long presented. Mr. Patterson opened the floor to Ms. Long, so that she could inform the board of the results of the meeting held with the Portage and Trumbull County Health Commissioners.

Lt. Col. Tadsen stated that questions were raised about the possibility of carcinogens leaving the installation and moving into the community. When Dr. Indian spoke at a previous RAB meeting his data was incomplete for Portage County as a whole, in particular the townships surrounding the installation. Ms. Long had enlisted the aid of Dr. Rupp and chaired the meeting. At this point he introduced Ms. Long.

Ms. Long stated that Dr. Rupp (Portage County Health Commissioner) and Mr. Catuango (Trumbull County Health Commissioner) were invited to help assess the situation at RVAAP as far as health risks and advise the board as to whether or not further investigation was needed. Should the need for further investigation be warranted the goal was to see if they (the commissioners) could accomplish that or at least encourage the state to lend its assistance. She stated that the topic is very complex and doesn't boil down to simple answers. It was a great start but if the RAB is going to pursue this further it needs to ask the hard questions. No evidence has been found of contamination traveling from RVAAP to the surrounding communities. There is no particular flare of cancer in the area that indicates carcinogens are leaving RVAAP. There isn't any concrete data available concerning that. A number of people from the RAB were in attendance at this meeting. She invited the RAB members to review the minutes of the

meeting (please see attached meeting minutes). She stated that any comments from the members would be welcomed and she asked that the members review the minutes over the next few weeks and plan to talk more in-depth about the material at the next RAB meeting. Mr. Smith stated that we have had this data for quite some time. They have used Ravenna's zip code instead of our areas'. In order to get useful data we would have to do a door-to-door canvass. Ms. Long stated that the statistics were obtained from the state, according to zip codes. Lt. Col. Tadsen stated that starting in 1992 more specific data became available. Dr. Craig lent her support to Ms. Long and stated that she believed the board to be more interested in the immediate area. She also agreed with Mr. Smith that a door-to-door survey would be the most effective tool. Mr. Smith stated that Paris Township for example has three different zip codes. Using the zip codes dilutes the scope of what we are trying to do. Lt. Col. Tadsen asked the board to review the report and further discussion time would be included in the next meeting's agenda.

Mr. Patterson stated that there was still one position open on the RAB. Mr. Markov stated that he might have someone interested in the position. He stated that he really wasn't very familiar with the interested party. Mr. Smith interjected that he knew whom Mr. Markov was referring to and that he had talked with her and believes that she is a geologist. Mr. Patterson suggested that they have her call him.

Dr. Craig stated that she would like to follow up on a topic raised in the September meeting minutes. She said that questions were raised about chromium. The RAB should be familiar with the Army's report dated March 15, 2000. Looking through that report there is a chart that refers to the chromium present from stream sampling. The level in the stream is greater than background. The board should receive more information about this and maybe use the TAPP providers to help. Mr. Patterson stated that three sites in the installation have raw data. More information regarding hex and trivalent levels at those sites will be made available. He went on to say that more background information is needed. Dr. Brancato (of the US Army Corps of Engineers) added that chromium 6 is the carcinogen. Chromium 3 is non-toxic and that is the substance that was found. Dr. Craig stated that the board needs a full health report about that and need valence states for Ferrochrome. Mr. Patterson added that leach studies were performed on the Ferrochrome piles by the Defense Logistics Agency (DLA) who stores that information and has for years. That particular area is down gradient from the Erie Burning Grounds. He suggested that the board look at that document/report. Dr. Craig asked how chrome was used, where, what residues, and at what levels. She stated that information would be useful to the RAB. Mr. Patterson replied that there is a sample point where the Ore Piles and Erie Burning Ground drainage meet. He stated that he would work on obtaining additional information for the members.

#### 4. **IRP Schedule**

Mr. Patterson presented. He passed around a summary sheet for the board members to follow along (see attached). The Installation Action Plan (IAP) has been signed by the installation and will go up to OSC for final signatures. After that copies will be made available. They should be available for viewing within the next three to four weeks. He invited the board members to attend the new IAP

Workshop on September 11th through the 13th. They will be informed as to the exact time and location.

He stated that this year's budget will be approximately 5.2 million dollars and that work is building up. Lt. Col. Tadsen took this opportunity to discuss building T-5301. The guard took down the building, transported it to a new location and re-erected it. Mr. Patterson added that this saves the installation as well as the Ohio Army National Guard (OHARNG) money.

Please refer to the handout entitled Summary, for complete information. The status of RVAAP is as follows:

RVAAP is not a National Priority List (NPL) site. RVAAP had submitted a RCRA Part B permit application to U.S. and Ohio EPA. The application covered the installation's interim status RCRA sites. The permit application was withdrawn during the 3<sup>rd</sup> quarter FY94. The installation is currently revising the existing findings and orders with the Ohio EPA to cover future hazardous waste activities needed for closure of RVAAP.

There are 51 Defense Site Environmental Restoration Tracking System (DSERTS) sites. The 19 Response Complete ER,A Eligible sites are not regulated under CERCLA but effort must be put forth to ensure that they are investigated and cleaned up if necessary. Referring to the handout Mr. Patterson stated that there is a spreadsheet for each site. The map attached corresponds with the numbers listed for each area. Most of the sites are burning grounds or load lines. The Fuze and Booster lines were added later on.

The main contaminants of concern on RVAAP are explosives and heavy metals. The main media of concern are groundwater, soil, surface water, and sediments.

Building T-5301 IRA is the first CERCLA closure site. It was cleaned up to levels consistent with background and the area was restored.

At Load Line 12 IRA, the bioremediation is nearing completion.

In the Projected IRP Phases the Long Term Monitoring is proposed to be conducted at 23 sites to ensure that the corrective action is working and to determine if there has been a change in contaminants or their movements. The funds for these projects are based on the current cost to complete (CTC).

The potential removal action for the Winklepeck Burning Grounds has been suspended. The IRA will not continue beyond 2002. This site will be remediated as one single project after all of the ecological risk studies (feasibility studies) have been completed.

In the funding section the monies allotted for future requirements keep coming down due to the fact that there is a lot more information available. Empirical data is being gathered now. The total funding amount is \$48,435,492.00.

In the Duration section Mr. Patterson noted that by 2007 all of the remediation actions should be in place. The budget has been reduced but we are still going to be receiving the same amount of monies per year. This enables us to move projects that were on the back burner towards the front. Please note that this is far ahead of the Department of Defense's original guidance goals.

Referring to the spread sheet entitled: Ravenna AAP FY01 Constrained CTC Short the following notes were made: (please note that the funding listed for each of the sites is what is anticipated to bring each to closure.)  
Most Remedial Investigations take 18 months to complete.

**RVAAP-03 (Demolition Area #1)** Undergoing UXO clearance. Sifting dirt at the site is on-going. Soil is being characterized and separated. The UXO team is in the process of removing small fuzes and other ordnance. Remedial actions and removal actions have been paired. This to save on future remediation costs. This is a CERCLA site.

**RVAAP-08 and 09 (Load Lines #2, 3, 4)** The LL #2 site borders State Route 5. They are secondary explosives load lines (attempts are made to group sites together as much as possible). A lot was learned from LL #1 and this information will be applied to LL #2 in an attempt to cut down on the number of samples taken which will in turn cut down on the cost. These were melt pour lines. Lines 2, 3, and 4 will be combined, all field work will be done and one document will be produced. This will save money on the risk assessments.

**RVAAP-28 (Alleged Mustard Agent Burial Site)** (Suspected area) Original report, of the possible presence of mustard agent was made in the 60's. Funding is there to provide fencing and restrict access. Magnetometer studies have been done and although some anomalies have been found there is no evidence of mustard agent. This site was identified by a former employee who worked in the area. Interviewing former employees for more concrete information regarding the site. More than likely this site will remain restricted.

**RVAAP-29 (Upper & Lower Cobbs Ponds)** These are settling ponds for Load Lines 12 and 3 and a small drain from LL #4. Part of original phase I study. Full blown remedial investigation coming up this year. Small explosive amounts have been found in the sediments.

**RVAAP-34 (Sand Creek Disposal Road Landfill)** Direct removal action will be accomplished at this site. The debris that is visible will be removed and sent off-site to a landfill.

**RVAAP-49 (Central Burn Pits)** Remedial Investigation under contract. Can see debris on top; will be going for review.

**RVAAP-51 (Dump Along Paris-Windham Road)** Mr. Callahan from MKM Engineers will discuss this site more thoroughly.

Mr. Patterson stated that he feels that the budget amounts are fair. He added that these monies could roll over into the next year.

Mr. Markov stated that recently the term radioactivity has come up concerning RVAAP. Mr. Patterson answered that a Corps of Engineer's radiological (RAD) group had come out and studied the installation and had 0 hits for all of these sites, discussed earlier.

Mr. Patterson's handout also includes the DSERTS spreadsheet. This shows the site's RVAAP number, a description of the site and the site type. Also included is the regulating authority (CERCLA, RCRA, etc.)

The final map on the last page of the handout is a general area map, depicting the locations of the identified environmental areas of concern.

## 5. **Upcoming Remedial Investigations at Load Lines 2, 3, and 4.**

Mr. John Jent, US Army Corps of Engineers, Louisville District presented. Please refer to attached handout. Mr. Jent stated the three basic goals of the army in transferring RVAAP to the Ohio National Guard were A: Clean up facility to eliminate any significant off-facility migration of contamination. B: Clean up facility to eliminate any significant threat to health of future users of the facility (OHARNG). C: Remove significant unexploded ordnance dangers to provide safe site for OHARNG safety as they train in the future. The whole purpose is to accomplish these goals in the least expensive and quickest way in the long run.

Mr. Jent discussed the funding available to accomplish these goals. The Defense Environmental Restoration Program (DERP) funded older CERCLA activities prior to 1984, for example Load Lines 1, 2, 3, and 4. The Base Production Support (BPS) program primarily funds the AOC at Ramsdell, RCRA, and PCB storage after 1984. The DERP program will provide funding if related to CERCLA cleanup such as Hazardous Waste cleanup efforts. Future funding source to provide solely for UXO clearance and independent Hazardous Waste cleanup is in the works.

Referring to the handout under the heading Major Activities at Load Lines 2, 3, and 4 the acronyms are as follows:

RI: Remedial Investigation  
FS: Feasibility Study  
ROD: Record of Decision  
RD: Remedial Design  
RA: Remedial Action  
LTM: Long Term Monitoring

Under the heading Lessons From Load Line 1 additional comments are as follows:

- Did not coordinate CERCLA RI with BPS building demolition so had to stop for 2 years.
- Hazardous material remains in bldgs., floor dirt debris; paint chips, 48 55-gallon drums of hazardous waste were removed from Load Line 1 (Hazardous for lead and cadmium)

Under Main Points: Funding constraints require RI's at Load Lines 2, 3, and 4 be accomplished prior to demolition.

Mr. Jent's handouts include a flow chart of the CERCLA Process. On the next flow chart in the handout Mr. Jent concentrated on the RVAAP CERCLA Approach. He stated that this is a modified version. Please note that PA stands for the Preliminary Assessment. He stated that monies can be spent studying the different sites or we can reasonably move forward based upon the information that has already been learned, always keeping the end goal in mind. The steps are clearly outlined in the flow chart. Please note that the Winklepeck Burning Grounds phase II RI is in the process of being finalized. The field work for the mini-FS was completed. Next there will be the Proposed Remedial Plan, etc. The final stage in that column of RD/RA includes long term monitoring. On the next page of the handout under the section 1.1 Purpose of the RI/FS, Mr. Jent made a point of reading the underlined statement. This statement is enlarged on the next page and reads as follows:

A significant challenge project managers face in effectively managing an RI/FS is the inherent uncertainties associated with the remediation of uncontrolled hazardous waste sites. These uncertainties can be numerous, ranging from potential unknowns regarding site hydrogeology and the actual extent of contamination, to the performance of treatment and engineering controls being considered as part of the remedial strategy. While these uncertainties foster a natural desire to want to know more, this desire competes with the Superfund program's mandate to perform cleanups within designated schedules.

The next page of the handout highlights the Phases of the RI/FS Process.

The following page deals with the components of a Baseline Risk Assessment. The idea of a risk assessment is conceptual. They are not difficult. Two are done: one for human health and one filled for ecological factors. From these true data is accumulated. Additional notes to the individual headings are as follows. After Data Collection and Evaluation the next two steps are Exposure Assessment and Toxicity Assessment. Exposure Assessment basically looks at how the contaminants get into the receptors. A lot of assumptions are made here. In the Toxicity Assessment we find a lot of true data. We also see how toxic the levels are for humans and the ecology. In the final stage, Risk Characterization a comparison is made between toxic levels and what is actually being taken in.

Next Mr. Jent went over the next page of the handout entitled Model SOW (Scope of Work) for Conducting an RI/FS.

Following that is an outline of an actual scope of work. The outline headings are reduplicated here with additional comments in emboldened Italics.

- 1 BACKGROUND  
*No additional comments added.*
- 2 PROJECT PLANNING  
*Develop Draft Work Plans agreed on by the EPA, etc.*
- 3 COMMUNITY RELATIONS  
*RAB-Results of the investigation is presented.*
- 4 FIELD INVESTIGATIONS  
*No additional comments.*
- 5 UXO ANOMALY SUPPORT  
*Anytime a hole is dug it is cleared by UXO technicians for safety.*
- 6 DISPOSITION OF INVESTIGATIVE-DERIVED WASTES  
*No comments*
- 7 ANALYTICAL INVESTIGATIONS  
*Determines concentration levels of contaminates.*
- 8 BASELINE RISK ASSESSMENTS  
*Human/Ecological*

- 9 DRAFT PHASE II RI REPORTS  
*At this stage the reports are reviewed internally before being sent out to the public. Internal reviewers include USCHPPM, OEPA, OHARNG, U.S. Army Corps of Engineers, OSC and RVAAP.*
- 10 DRAFT REPORT MEETING  
*Reviewer's comments are annotated and then a meeting is held to discuss the comments.*
- 11 DRAFT-FINAL PHASE II RI REPORTS  
*After the internal comments have been reviewed and items are either accepted or corrected the reports are sent out to the public for review.*

Next Mr. Jent went over the historic information utilized to maximize investigation efficiency. He stated that it was important to have an understanding of the general operations of each load line. This is helped by the large supply of maps and drawings available including "as built" drawings and maps which outline operating procedures. Because of the wealth of knowledge gained from Load Line 1, Lines 2, 3, and 4 are compared to it. A graph of the comparison of artillery projectile and bomb production of these sites is included in the handout. Topo maps are used to determine drainage flows, streams and sewers. Surface water and sanitary drainage maps are looked as well as building plans.

Mr. Jent discussed the lessons that were learned from the Load Line 1 RI and can now be applied to the other lines. These lessons included the use of on-site lab explosive tests used to determine the nature and extent of contamination. Using these on-site labs helps the crews save time and immediately determine the extent of the contamination. These are "real time" on-site labs.

Mr. Jent then went on to discuss the remedial investigation objectives for Load Lines 2, 3, and 4. (Please refer to the handout).

Mr. Jent went over the general types of sampling conducted in a field investigation. He stated that the sampling in all of the various locations were done at biased locations. He stated that the locations were selected based upon the areas that are thought to be the most contaminated. The sampling conducted adjacent and extending out from load line buildings are ones that, based upon the Phase I RI, are known to have a lot of contamination. Testing is conducted under building floor slabs. These floor slabs remain after the building has been demolished. Most of the sanitary sewers that have been examined have been in great condition. Approximately 10 ground water monitoring wells have been installed per load line. This is a rough number. The ground water samples can be used to determine depth of the water and flow direction. Areas for possible use as "clean, hard, fill areas" are located through testing. These sites, as discussed earlier, provide great cost savings to the project. For further information please refer to handout.

Mr. Jent included in his presentation plot plans for Load Lines 2, 3, and 4, and maps of the dilution settling pond at LL #2 showing sample locations and analytical parameters and relative concentrations of explosive compounds in surface soils and sediments.

Mr. Jent stated that the Ohio EPA has submitted guidance documents that provide the comprehensive framework for the work being accomplished.

Mr. Markov asked why transite was being removed at the different load lines. Mr. Jent responded that the weather breaks down the transite panels releasing the asbestos into the environment. Mr. Markov then asked how is it possible to remove the panels without releasing the asbestos. Mr. Patterson answered that the panels are coated with a protective covering and that the asbestos is encapsulated. By removing each individual nail and maintaining the panels in large pieces it is possible to remove the panels with a low risk of contamination. Mr. Markov then asked which is removed the first the UXO or the transite panels. Mr. Jent replied that there is a safety plan put into effect to minimize the UXO hazard. Lt. Col. Tadsen added that a UXO technician is available in case ordnance is found. He stated that a 40 mm grenade had been found at the Winklepeck Burning Grounds. The UXO technicians found the grenade to be volatile and had to detonate it in the spot where it was discovered.

Dr. Craig asked if ground water migration was part of the study being conducted. Mr. Jent replied not as of yet. Dr. Craig asked for clarification on the purpose of on-site testing. Mr. Jent replied that the purpose is to determine how large of an area needs extensive testing. Dr. Craig asked is this was also being done in regards to metals and Mr. Jent replied in the affirmative. Very extensive X-ray Florescence (XRF) studies to determine the approximate levels of metals are being conducted. While the XRF is not as minutely accurate for metals as it is for TNT the information gained will be a great help in clean up. Lab analysis will be done for all metals these test will prove invaluable and will give exact levels of contamination with regards to metals.

6. **Remediation of Sand Creek Road Landfill, Paris-Windham Road Dump, Open Demolition Area #1, and Load Line 11**

Mr. Richard Callahan from MKM Engineers, Inc. introduced himself to the board and stated that the last time he presented to the RAB he had discussed the partnering agreement that goes on with regards to RVAAP. The partnership includes the RAB, OEPA, OSC, USACE and RVAAP. He will be presenting some new projects as well as the status of on-going projects. He proceeded to present to the board a slide show centering on the remedial actions planned for 2001. These were the Paris-Windham Dump, Sand Creek Dump, Open Detonation Area #1, and Load Line 11.

He began by discussing the difficulties that the Paris-Windham Dump site remediation will present. This 400-ft. x 20 ft. dump site was used for the disposal of miscellaneous materials including transite siding, wire fencing, and wooden debris. The USCHPPM report identifies surface soil, water and sediments as potential media for contaminant migration. Mr. Callahan showed pictures of the site. He stated that the scope of work included clearing and grubbing, removal and disposal of unconsolidated surface waste followed by confirmation sampling and geophysical screening to evaluate the success of the remedial action. Surgical excavation (soil removal) would be performed based upon the results obtained. There is no indication of ordnance in this area but UXO support will be utilized for maximum safety efforts. Because of the nature of the site it is best to remove the debris then conduct sampling. Some of the pictures that he showed depicted panels of transite in the area and showed where backwater was standing.

Sediments from this water filled area will be sampled. He stated that when the debris from this area is removed every effort will be made to keep as much soil as possible in place. Some trees may have to be cleared due to the steep incline of the site. In order to enable equipment to remove the debris. MKM has received talking and working with the OHARNG and Tim Morgan on this issue.

The Sand Creek Dump site is similar to the Paris-Windham Road Dump with the exception of size. This 1200-ft. x 50 ft. dump site was used for miscellaneous materials including transite siding, wire fencing, and wooden debris. There were no previous investigations conducted in the area. This site is larger than Paris-Windham but surface soil; water and sediments are also considered as potential media pathways. Mr. Callahan showed pictures of the site including pictures of the concrete and metal debris, telephone poles, and transite panels found there. The scope of work for this site is the same as that of the Paris-Windham Dump. As with the Paris-Windham Road Dumpsite some clearing of trees will have to be performed here as well to facilitate the use of the large pieces of equipment. The large amounts of concrete will hopefully be able to be used as clean hard fill. This will save the facility money in disposal costs.

Open Demolition Area #1 is a 600-ft. x 400-ft. site used for thermal treatment of munitions by burning and detonation. The Phase I report indicates explosives and metals as contaminants of concern. The Interim Removal Action (IRA) is underway. Mr. Callahan showed photos of munitions and ordnance laying on surface soils. His presentation included pictures of the excavation process, the sifter and the crew sorting through the soil locating ordnance. The final picture showed a one of the excavated grids after restoration. The Remedial Action scope of work for this site involves the surgical removal and disposal of contaminated soil and re-grading the site. Confirmation sampling, analysis and geophysical screening are performed to evaluate the success of the remedial action. The results of the Phase I RI were invaluable in directing the efforts.

Mr. Callahan began presentation of Load Line 11 with a site view photograph. This site was utilized primarily for the production of artillery primers and fuzes. The main contaminants of concern are metals and explosives. The USCHPPM report identifies surface soil, and sediments as potential media for contaminant migration via open ditches, sedimentation sumps and sewers. His photographs for the site included pictures of the sumps and concrete manholes at the site. Another photograph depicted the excavation of a sump as well as the excavated area after the sump was removed. He also showed photos of the sump liners. The Remedial Action Scope of Work for the site involves field screening for explosives, metals, and nitrates, the removal and disposal of sumps and surrounding soil, sewer and open ditch soils. Confirmation sampling, analysis need to be performed to evaluate the success of the remedial action. When the line was in operation the sumps were cleaned out often this helps with the clean-up operation. On LL #11 operations were done using smaller amounts of explosives with more precise techniques. These lines were cleaner and safer than the melt-pour buildings.

One of the RAB members asked if any explosions occurred that would have released asbestos into the environment. Mr. Patterson answered that according to Mr. Jim McGee (Toltest) there were no major explosions that would have released the asbestos from the transite panels. If a hole was discovered in the transite it was either repaired or sent to the dump. Mr. Markov asked if transite released from building demolition would be released from the ground by activities

from the National Guard. It was basically stated that in order to have asbestos contamination the asbestos level has to be equal to or exceed 1%. The greatest potential threat of asbestos contamination at RVAAP was from the Defense Logistic Agency (DLA) storage. They were storing large tanks filled with raw asbestos. These storage tanks began to rust and fibers were released. The DLA has removed all of the asbestos that they stored at RVAAP. Akron Regional Air Quality Management District came out and ensured it's clean up.

2. Scheduling of the Next Meeting

It was agreed that the next RAB meeting would take place on May 16, 2001 at the Paris Town Hall, Paris Township, There being no further business, Lt. Col. Tadsen adjourned the meeting at 9:00 p.m.

Respectfully Submitted,

Denise L. Gilliam  
RAB Secretary  
DLG/dlg