

**MINUTES**  
**ECOLOGICAL AND HUMAN HEALTH RISK ASSESSMENT MEETING**  
**EPA REGION IV OFFICES IN ATLANTA, GA**  
**June 25, 2001**

**Attendees:**

Ron Levy, Ft. McClellan	Lisa Kingsbury, Ft. McClellan	Philip Stroud, ADEM
Sharon Thoms, EPA	Ellis Pope, USACE Mobile	Doyle Brittain, EPA
Bernie Case, AL-ARNG	Dan Levine, IT	Ted Simon, EPA
Matt Bazar, CHPPM	Wayne Sartwell, AL-ARNG	Rich Prann, IT
Robin Zimmer, IT	Karen Barnes, TRADOC	Randy McBride, IT
Paul Goetchius, IT	Larry Tannenbaum, CHPPM	Steve Moran, IT
Jeanne Yacoub, IT		

The attendees met at EPA Region IV offices in Atlanta, GA at 9:00am on June 25 to review the ecological and human health risk assessment approaches for the small arms ranges on Ft. McClellan. Attachment A provides the meeting agenda. All attendees were provided with handouts of the slide presentation. The meeting concluded at 3:00pm. The following minutes describe discussions and action items.

Ellis Pope, USACE Mobile District, opened the meeting with a statement of the Army's objectives. He indicated that the Army's objectives were three-fold; to present the Army's technical approach to small arms ranges, to solicit EPA's feed-back/buy-in to the proposed technical approach and schedule for reviews, and to use the approach to develop mutually acceptable remedial goals for the small arms ranges.

Randy McBride and Dan Levine, IT Corporation, provided an overview and background information on the Iron Mountain Road and Bains Gap Road small arms ranges. This information included known historical background information, chemical data results from recent sampling events, and a photo/GIS tour of the ranges and corresponding safety fans. The photo/GIS tour showed the location of the ranges on the base, as well as the range configurations and the configurations and extent of the safety fans. The purpose of the historical information was to support the Army's analytical program; the visual depiction of the ranges was to support the Army's decision not to perform extensive sampling in the fans. EPA's stated concerns were that the Army may have missed contaminants of potential ecological concern because sampling did not take place in worst-case locations, was limited in the analyses performed, and did not include any chemical data from the extensive safety fans.

Rob Zimmer, IT Corporation, described the Army's proposed technical approach to the ecological risk assessment effort. He indicated that the Army had completed SLERAs (Screening Level Ecological Risk Assessments) for many parcels on Ft. McClellan. Rob further stated that the Army's position was that the SLERA had also been completed for the small arms ranges. His objective was to present the Army's proposal for the BERA

(Baseline Ecological Risk Assessment) for the small arms ranges, as defined in steps 3 and 4 of EPA's 8-step ecological risk process. During this discussion, Sharon Thoms, EPA, indicated her position that a proposal for steps 3 and 4 was premature because step 2 had not been adequately addressed. Sharon stated that the data the Army presented did not represent worst-case locations, and therefore concentrations (of copper, antimony, zinc, lead, arsenic, and other COPECs) were biased low, and could not represent maximum exposures as required by the SLERA. She also pointed out that since the analytical suite for the samples was not comprehensive, it was possible that the Army could have missed COPECs (contaminants of potential ecological concern) to carry into steps 3 and 4, such as zinc, manganese, and perchlorates. She also indicated her position that the data, and therefore the SLERA, was confined to a very small portion of the small arms ranges, and did not address the safety fans at all.

During discussions, Rob and Larry pointed out that even if the SLERA had missed a few compounds, the proposed approach would identify those substances, and they would be addressed in the BERA. They felt confident in that assertion for two reasons. The first reason is that the Army has strong historical operational information about the small arms ranges; their dates of usage and the munitions used at each range are well known, and their physical configuration and chemical characteristics are also well known. The second reason is that the potentially overlooked substances would not be highly bio-accumulative, such as DDT or PCBs. Sharon indicated that the Army needed to collect samples from the most highly contaminated areas on the ranges, and subject those samples to a full analytical scan to assure adequate identification of COPECs and maximum exposure information. She also reiterated the need for more detail in step 2 documentation, specifically the conceptual model and the exposure pathways.

The attendees also discussed the technical aspects of the proposed toxicological studies and the bio-survey. Sharon questioned whether rodent studies would provide complete toxicological data, since she believes the Army has not identified all the COPECs. Her concern was that since the Army hadn't fully characterized the COPECs at the ranges, additional COPECs may be identified that might represent a contaminant class that would require completely different biological/toxicological surveys. Rob again pointed out his opinion that given the extensive knowledge of the range historical operations and background, the Army was confident that COPECs had been identified. Rob also indicated that even if one or two COPECs had been missed, the proposed studies would allow for their identification and evaluation. Larry asserted that the rodent populations would provide valuable information for two significant reasons; first they represent the territory in which they are caught. Secondly, Larry pointed out that small mammals today are the result of hundreds of generations having bred and lived through the site condition with its contamination. If the contamination is producing adverse effects to the various populations, then those effects should be noticeable through the proposed studies. If effects are absent, it is unreasonable to expect them to first appear at this late date. Sharon pointed out that the ecological risk process is not to evaluate impacts, but to determine the potential for future risks. The participants engaged in lively discussions about impacts vs. future risks when a site has had contamination over a long enough period of time to reach some type of equilibrium. Sharon's preference would entail

determining food/prey concentrations of COPECs, and then using models to predict total exposures for upper trophic level organisms. Larry asked Sharon if she thought ecological risk modeling would produce better information than actual empirical field data. Sharon indicated that she thought models would produce better data, when projecting future potential risks in higher trophic mammals.

The Army agreed to collect additional samples from the berms at the Iron Mountain Road ranges. Those samples will undergo full chemical analysis. IT will also shoot a few XRF points in the safety fans to confirm the assumption that lead contamination from small arms range operations has not significantly impacted the safety fans. IT will revise step 2 documentation to provide more detail, but recognizing that as much additional data as Sharon wants will not be available until another round of fieldwork is complete. IT will also prepare the Problem Formulation and Study Design documents in accordance with EPA's 8-step process. Doyle committed to a rapid review and turnaround on those documents so that fieldwork could take place this summer. Doyle and Philip also agreed to visit the ranges again on Wednesday, June 27, to get a better understanding of the range configurations, and to evaluate potential well locations for groundwater sampling.

Attendees wrapped up discussions on ecological risk assessment and took a lunch break.

After lunch, the group began discussions on the HHRA (human health risk assessment) issues raised by EPA. Paul Goetchius discussed the issues within the context of EPA comments on the HHRA in the EE/CA for the Iron Mountain Road small arms ranges, recognizing that assumptions and decisions for these ranges would be applied as appropriate to other small arms ranges on the installation. These discussions focused on derivation of the soil lead cleanup levels for two specific future site-use scenarios -- highway construction and passive recreational site use -- which, without further explanation appeared inordinately high.

Paul stated that highway construction is unlike fixed-location projects, so that adopting the exposure assumptions for the construction worker scenario used for SSSL development would be inappropriate. Although a highway construction project might take years to complete, the duration of exposure to any given spatial unit, i.e., a mile of highway right-of-way, would be small. He explained the information obtained from the Alabama Dept. of Transportation (ALDOT) regarding highway construction, and showed that the highway construction scenario represented an upper-bound on exposure. The newly developed exposure parameters were used in the adult blood-lead model to derive cleanup levels for lead for the highway construction worker.

Passive recreational site use is a common site-use scenario used to evaluate the upper-bound on exposure to remote or outlying areas, or areas that are not suited or scheduled for more beneficial use. Paul explained that a passive site use scenario had been developed and included in the Installation-Wide Work Plan (IWWP), which had been approved by EPA Region IV and ADEM. The exposure assumptions developed in the IWWP were used in the adult blood-lead model to develop cleanup levels for lead for passive recreational site use.

Ted stated that he accepted the soil lead cleanup levels for the highway construction worker and passive recreational site use, given the fuller explanation regarding their development. Paul agreed to revise the Uncertainty and the Summary and Conclusions Sections to more fully explain and defend the assumptions underlying the soil lead cleanup levels for these scenarios.

Discussion followed regarding application of the cleanup levels to soil at a specific site. Cleanup levels developed with the adult blood-lead model are intended to be average concentrations over the entire area over which the receptor is uniformly and randomly exposed. It is understood that there may be some locations where measured lead concentrations substantially exceed the cleanup level. However, the site is interpreted as being in compliance as long as the average concentration over the entire exposure unit does not exceed the appropriate cleanup level.

Ted indicated that groundwater data are missing from the database and that he understood from discussions during the morning that groundwater data would be provided. He also recommended that the document clearly reflect that the Army is addressing non-CERCLA UXO issues under another separate EE/CA.

Ted asked about a "maximum concentration (of lead) to be left behind" referring to the soils where the senior center would be. Paul and Larry reminded Ted that there is no regulatory basis for computing such a concentration. Paul and Ted also indicated that individual chemical detections, as high as they could possibly be, are irrelevant, if the exposure point concentration does not trigger a risk (here, a blood level concentration in excess of 10 ug/dl). In the discussions, Paul and Larry convinced Ted that visiting grandchildren would not be present for sufficiently long periods to warrant the running of the lead model on their behalf.

After discussions on risk assessment issues were complete, Ron spoke to the group about the Army's urgency to proceed with the cleanup of the ranges at Iron Mountain Road. He indicated that the Eastern Bypass construction is rapidly approaching, and that he must begin cleanup to accommodate that construction. He also discussed the funding difficulties that may occur if he can't spend the funds he has obligated for the cleanups, specifically, he will lose his funding, and will not receive future funding if he doesn't spend the money he has set aside for the small arms range cleanups. Doyle indicated that he would do whatever he could to expedite the process for the Army, but that the Army must comply with the process. He further indicated his willingness to work with the Army to speed up the process as much as possible. He promised rapid review and turnaround of the documents, providing the Army gets him revisions and documents as discussed. Doyle and Philip agreed to a site visit to the small arms ranges on Wednesday to further evaluate the Army's risk assumptions, and to evaluate potential sample locations for additional data collection efforts.

The meeting finished at 3:00 pm.

**ATTACHMENT A**

**AGENDA  
ECOLOGICAL AND HUMAN HEALTH RISK ASSESSMENT  
JUNE 25**

9:00am	Introductions and Meeting Objectives	E. Pope
9:10	FTMC Ranges Background <ul style="list-style-type: none"><li>- FTMC Range Overview</li><li>- IMR and BGR Ranges</li><li>- Sampling and Analytical Program for IMR and BGR EE/CAs</li></ul>	R. McBride
9:45	Eco-Risk Approach <ul style="list-style-type: none"><li>- Conformance with EPA Risk Process</li><li>- SLERA Results to Date</li><li>- Proposed BERA Process at IMP and BGR</li><li>- Management Decision Points</li><li>- Study Design and Data Quality Objectives</li></ul>	R. Zimmer/R. Prann
11:15	Eco-Risk Wrap-up and Conclusions	L. Tannenbaum
12:00pm	Lunch	
1:00	Human Health Risk Issues	P. Goetchius