

FT. McCLELLAN BCT MEETING MINUTES  
 PARTNERING SESSION #44  
 FT. McCLELLAN, AL  
 MAY 21 - 22, 2002

AGENDA ITEM	RESPONSIBILITY	NOTES
Check In Guest Introduction and Roles	Host: Ron Levy Leader: Recorder: Jeanne Yacoub	See Attendees List – Attachment A.
Ground Rules	BCT	Attachment B provides the ground rules, as revised in January, 2001.
Agenda	BCT	The BCT revised the May agenda, and proceeded accordingly. Attachment C provides the draft June agenda. Attachment D provides the May meeting summary.
Accept Previous Minutes	BCT	The team reviewed the draft April minutes, and accepted the minutes with revisions as final.
Action Items	BCT	Action items were reviewed and updated, as indicated in Attachment D.
Long-Term Planning (BCP)	BCT	IT provided a final BCP on December 21, 2001.
Goals/Metrics Update	BCT	The team began brainstorming this topic during the June, 1998 meeting, and also began development of preliminary goals for consideration by the group. This topic requires the BCT to set aside schedule time to address.
Facilitator Observations	David Sanderson	David Sanderson attended his twenty-fifth meeting with the team. His notes and observations are provided at Attachment E.



ATTACHMENT A

LIST OF ATTENDEES  
BCT SESSION #44  
FT. McCLELLAN, AL  
MAY 21 - 22, 2002

***Attendees:***

Ron Levy, Ft. McClellan (FTMC)  
Lisa Holstein, FTMC  
Ellis Pope, Mobile District Corps of Engineers  
Philip Stroud, Alabama Department of Environmental Management (ADEM)  
Doyle Brittain, Environmental Protection Agency, Region IV (EPA)  
Dan Copeland, US Army Engineering and Support Center, Huntsville (CEHNC)  
Miki Schneider, Joint Powers Authority (JPA)  
Bernie Case, Alabama Army National Guard (AL-ARNG)  
JoAnn Watson, National Guard Bureau (by telephone)  
Jeanne Yacoub, Shaw Environmental and Infrastructure (Shaw)  
Steve Moran, Shaw  
David Sanderson, Eagle Point Consulting  
Steve Neill, Foster Wheeler Environmental Corp. (FWENC)

***Guests:***

Jim Grassiano, ADEM  
Todd Biggs, FWENC  
Greg Williams, FWENC  
Linda Winston, CEHNC  
Karen Pinson, FTMC  
Larry Lumeh, CC Johnson and Malhotra (by telephone)  
Josh Jenkins, Shaw  
Randy McBride, Shaw (by telephone)  
Greg Sisco, Shaw

## ATTACHMENT B

### BCT GROUND RULES

#### *General:*

1. Leave rank and title at the door, and have a free and open discussion on any subject affecting the BCT.
2. Work smarter, not harder: create ways to simplify and streamline the BCT process.
3. Identify and express individual team members' sensitive issues, and agree to keep them within the team.
4. Alert other team members of any changes in cost or schedules.
5. Rotate meeting leaders.
6. Have fun.

#### *Meeting Behavior:*

1. Come prepared; do your homework.
2. Participate fully: offer your perspective and advice for the benefit of the whole team.
3. Listen to others' views and opinions, try to understand their needs, respect them, and work to resolve differences, and support team decisions.
4. Draw out other members: be open to other ideas and different perspectives.
5. Avoid interruptions and side conversations.
6. Call time out when necessary.
7. Make decisions by consensus: all in agreement, all owning the decision.
8. Turn off cell phones.

ATTACHMENT C  
BCT MEETING AGENDA

1. Check In
2. Guest Introduction/Role in Meeting
3. Review Ground Rules (Attachment B to these minutes)
4. Finalize Agenda with additions and/or subtractions (Item 9 of this Attachment)
5. Accept Previous Meeting Minutes
6. Review Action Items from Previous Minutes (Attachment D to these minutes)
7. Review Long-Term Planning (BCP)
8. Goals/Metrics Update
9. Accomplish Agenda Items (Item 9 of this Attachment)
10. Meeting Summary Review
  - Set next meeting date
  - Set next meeting agenda
  - Set time and date for conference call
  - Set meeting dates for next six months
  - Review action and consensus items
  - Review and evaluate Partnering Process

ITEM #9  
DRAFT JUNE AGENDA

**Wednesday, June 5, 2002**

0800 – 0830	Check-in/Finalize Minutes/Agenda/Action Items	BCT
0830 – 1000	Feasibility Studies for MP 1500 and Parcel 66	Shaw
1000 – 1030	Range 16 Work Plan	Shaw
1030 – 1100	Soldiers' Chapel PRA	Shaw
1100 – 1130	Parcel 93 Acetone	Shaw
1130 – 1300	Lunch	
1300 – 1400	Pelham Range Site Investigation Report	Parsons
1400 – 1700	Team Building	David

Breaks as Needed  
Dinner Plans

***Parking Lot***

WebEx Ad

Meeting Minutes

Filtered vs. Unfiltered Groundwater Samples...When is it acceptable? What is the path forward?

RAB Meetings

ATTACHMENT D  
MEETING SUMMARY  
With  
ACTION ITEMS

**Next BCT Meeting:** June 5, 2002  
Ft. McClellan, AL

**Primary Agenda:** See Item #9

**May Meeting Summary:**

Check-In - Team members introduced themselves and told the group why they were at the meeting and what they wanted to achieve. Doyle suggested having a standard agenda item to review RAB meetings and proceedings.

Finalize Agenda and Minutes - The BCT reviewed the April minutes, and accepted them with a few changes as final. The team reviewed the May agenda, and made the following additions:

- Land Reuse Definitions
- RAB Agendas
- Future BCT Meetings

Action Items - The BCT reviewed May's action items; the updates are presented in Attachment D at the end of this text. During the update of action items, Ron indicated that the Army would remove the guns from Truitt Hill during FWENC's UXO clearance activities.

JPA Update - Miki informed the team that the JPA has hired Matrix Design Group to review the landfill EE/CA and risk assessments. The JPA has a June 18 deadline for comments to the Army. Miki will meet with Matrix representatives on the 22<sup>nd</sup>.

The JPA has advertised the bid package for UST removals and expects to start actual removal actions in July. Ron indicated that the Army will pull all the USTs from the 3100 Area, Parcel 146. These USTs were not included in the JPA's bid package.

The JPA has also just received another 2200 acres from the Army.

Pete Conroy has just joined the JPA Board. His first meeting with the Board was today. Pete has worked closely with USF&W to coordinate development of a National Wildlife Refuge at Ft. McClellan.

The high-rise building behind the MP School has been sold to the Episcopalean Diocese for independent living units. The building will undergo a \$1.3M renovation. Miki would like an update on the Bldg. 3137 status...the Army is still working on the site. Lisa indicated the Army had recently NFA'd the site, and that would be included in SuperFOST 3. Miki said the map she just received from Gary Harvey did not include

Bldg. 3137. Lisa will check on that.

Passive Diffusion Bag Sampling - The BCT previously agreed to conduct a limited study comparing PDB samplers to traditional sampling methods for VOCs as a result of interest expressed to Ron by TRADOC (Oct., 2001). Shaw sampled at Soldiers' Chapel, Range J, and Range 24A. Based on the results, the study shows that PDB results correlate well with conventional sampling techniques and is very economical. Ron asked whether regulators would consider PDB application at Ft. McClellan sites. ADEM indicated they would entertain its usage; EPA expressed concern, especially at LF #3 where there is high public interest. Doyle suggested on non-controversial sites that PDB sampling, supplemented with a round of conventional sampling might be useful. The BCT agreed that as they group considers LTM options, Shaw will propose PDB sampling as appropriate for consideration.

SI Results for Area North of MOUT - This is an approximately 50-acre site located north of MOUT and south of the former POW training facility. The site has several 55-gallon drums that appear to have served as targets for small arms fire. There are some bullets scattered over the land surface, but not heavily concentrated such as what occurs at the small arms ranges. 2 monitoring wells were proposed, but not installed because drilling reached 100 feet with no encounter of groundwater or bedrock. (The BCT was consulted on the decision not to install the wells). One residuum monitoring well was installed. SI data (surface, depositional, and subsurface soils) showed some metals exceeding ESVs and two metals exceeding SSSLs, but on the same order of magnitude concentrations as the SSSLs. Shaw performed a PRA and recommended NFA with unrestricted reuse. Ron wants the drums removed from the area. Dan will check to see if the drums are in a UXO removal area and report back to the BCT. Ron says they can be removed for scrap value if they do not present a UXO issue. Philip wants to see the site. The BCT will inspect the site tomorrow.

Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, (Impact Area) - SI data shows metals exceedances in soils and groundwater, and explosives in groundwater. Doyle wants to know what is planned for this site, and suggested moving into a RI and finalizing the SI at this point. Ron will discuss options with Shaw and come back to the BCT.

Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, (Firing Line Areas) - The BCT concurred with NFA recommendation. SI data showed lead in one spot slightly exceeding the SSSL of 400mg/kg (404 mg/kg), but the BCT decided that it presents no unacceptable risk.

Land Reuse Definitions - Karen presented her email from a couple of weeks ago addressing this topic. That email is provided as Attachment F to these minutes. The Army's intent was to define the land reuse categories in the proposed reuse plan in terms of risk assessment criteria. Miki pointed out that the City of Anniston uses zoning ordinances to govern property reuse; she wanted to know where the concept of "passive recreation" originated. The reuse plan calls out "recreation." Miki pointed out that the City of Anniston uses zoning ordinances to govern property reuse; she wanted to know where the concept of "passive recreation" originated. A copy of the JPA reuse plan map was brought out to show Miki that areas of passive recreation were identified on the map. The City zoning ordinance defines the activities that fall within the recreation zoning category, and some of them require intrusive activity (construction) such as auditoriums, skating rinks, sports facilities, and libraries.

The Old Water Hole - SAIC performed a RI on this site in 1995 (report in 2000). The RI report did not

conclude massive burial of any items. Shaw proposed supplemental investigations to define nature and extent of contaminants. The National Guard requested one additional well (MW09) northeast of MW05/07. The BCT concurred with the recommendations and one additional well as discussed.

Range 23A, Parcel 109(7)PR, 152Q-X - This site was previously used for demolition and wall-of-flame training. The site is currently inactive; Bernie indicated it is not a good site for live-fire training because of Cane Creek, but some other type of training would be acceptable. CH2MHill previously performed site investigations, but there were unresolved lab QA/QC issues and analytical problems; the BCT decided to go back and redress this site. Shaw collected more samples and installed additional wells. SI data was all below SSSLs or background levels with the exception of 5 metals in groundwater. Steve noted that at this site, even using the low-flow sampling techniques, turbidities were very high. Shaw recommended NFA with unrestricted reuse. The BCT concurred, but wants the SI report to reflect no unacceptable risks due to site contaminants, and to include the turbidity measurements related to the metals. The National Guard contractor suggested taking filtered samples to lower the metals concentrations; Ron explained that filtered samples have never been allowed at Ft. McClellan. The installation also paid for a study to demonstrate the direct correlation between turbidity and metals concentrations, and that based on that study, the BCT accepts that high turbidities in groundwater result in elevated metals concentrations. Doyle suggested that when the low-flow sampling technique does not yield reduced turbidity, then Shaw should consider a filtered sample in addition to the unfiltered sample to demonstrate the relationship between turbidity and elevated metals.

Former Decon Complex (Acetone) - Randy presented the acetone analysis to the BCT and project team via conference call, and presented two recommendations at the end of the discussion. Doyle does not want to drop acetone from the VOC target list. He wants to track the acetone hits; Larry (NG contractor) wants to look at wells' locations and depths, and conduct an extensive analysis of the acetone presence. Ron pointed out that the MOA requires a SI; further work is the responsibility of the National Guard. JoAnn would like the recommendations captured in the SI report. Doyle is not convinced that the problem is not coming from LF #3. Philip agrees with Doyle's assessment. JoAnn suggested holding finalization of the SI report pending results from the LF #3 RI.

Former Toxic Gas Area, Parcel 211(7) - Steve presented the proposed work plan for this site. He pointed out that Shaw will prepare an SI report that incorporates Station 6 and the Toxic Gas Area. All wells are residuum wells. The BCT agreed to sample the drum at site 24 and the soil under it. The BCT concurred with the work plan.

Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7) - Steve presented the proposed work plan for this site. CEHNC/Parsons tested this site for CWM and found nothing. The BCT concurred with the proposed work plan, however they determined that agent breakdown analysis is needed only for groundwater, not soils.

Range K Drum Sampling - CEHNC has approved Shaw's proposed construction support work plan. Shaw will perform the work next month.

Future BCT Meetings - Doyle suggested that Francine attend the next BCT meetings as a link, and also the RAB meetings. Doyle thinks it would be beneficial for Tier II to observe team interactions and dynamics.

Range 30, Confidence Course, Parcel 88Q, et.al. - This site is a 34-acre site east of Reilly Airfield. It includes all of Parcel 106Q-x, approximately one-third of parcel 102Q, and the portion of parcel 88Q located northwest of the Fill Area at Range 30. Based on SI data results, Shaw recommended NFA with unrestricted reuse for this site. Doyle and Philip pointed out that the lead value, which is below SSSLs, exceeds ESVs. However the parcel is designated for industrial reuse and active recreation. The BCT concurred with the NFA recommendation.

Alternative UXO Removal - Dan presented a project on the Eastern Bypass where there are heavy target areas with large volumes of UXO/OE. The grids are taking a lot of time and money to clear. The total surface area is 5-7 acres. CEHNC proposes mechanized removal to save time and money. Doyle and Philip are concerned about residual explosives and metals in the soils that result from the mechanized sorting and separation before the dirt goes back to the site. Philip is also concerned about perchlorates. This area is the former Range 17, west of IMR. CEHNC will remove 18" of soil. If the operator doesn't find anything, then they will cease excavation. Dan will provide CDs of the presentation to both Doyle and Philip.

Minutes from the Ecological Risk Assessment Subgroup's Site Visit to the Small Arms Ranges - Jeanne reviewed the minutes Rich prepared after the site visit in early May by the ecological risk assessment subgroup. She indicated that Rich had previously provided the minutes to both Sharon and Cheryl, and had received no comments back, so he was assuming agreement with the minutes. Based on the site visit, the ecological risk assessment subgroup agreed to a substantial downgrading of the proposed field program for the IMR ranges. In summary, the subgroup concluded that biological sampling in Remount Creek and its tributaries was not appropriate at this time. In terms of terrestrial habitat, the subgroup agreed that laboratory-based earthworm testing, followed by desk-top modeling would suffice. These decisions apply only to the IMR ranges, as the subgroup recognized that the BGR ranges present a more robust aquatic habitat requiring more extensive fieldwork. The full minutes are provided at Attachment G to these minutes.

Teambuilding - Doyle suggested that David provide teambuilding training at the June BCT meeting. David asked what kind of focus the team wants for training. The discussion centered around managing external forces, pressures, and influences, and conflict management.

Future Meetings (3-month look ahead) - June 5, Ft. McClellan, July 17 - 18, Ft. McClellan, August 20 - 21, Ft. McClellan, September 17 - 18.

***Status of Action Items***

<b>Action Item No.</b>	<b>Responsible Team Member</b>	<b>Due Date</b>	<b>Status</b>	<b>Action Item</b>
02/2/2	Dan	Mar 02	Done	Provide Ron with new schedules considering the 40 additional acres associated with ALDOT's requirements.
02/2/3	Philip	Mar 02	SNR	Report back to BCT on ADEM's position on the Pelham Range Water Supply issue.
02/2/4	Ron	Mar 02	Done	Report back to Miki and team on what Army will do with the guns near Truitt Hill.
02/4/1	Rich	May 02	Done	Coordinate a site visit to FTMC for the ecological risk team, and work with Lisa to ensure adequate access to the sites.
02/4/2	Philip	May 02	Done	Check with ADEM to ascertain if there are risk-based closure standards for gasoline stations (Former Motor Pool Area 3100 and the Base Service Station).
02/4/3	Lisa	May 02	Done	Send Philip copies of letters pertaining to the Choccolocco Corridor investigations.
02/4/4	Lisa	May 02	Done	Send letter to ADEM documenting that SSSLs and not ISLs have been accepted by the BCT and will continue to be used for sites on FTMC.
02/4/5	Philip	May 02	Done	Check with ADEM management to clarify that ADEM has already approved the LF #3 work plan addendum, and inform that field work is underway.
02/5/1	Lisa	June 02	SNR	Check to see if SuperFOST 3 includes Bldg. 3137.
02/5/2	Ron	July 02	SNR	Review options on the Area South of POW Training Facility and report back to the BCT.
02/5/3	Dan	June 02	SNR	Provide CDs on mechanized UXO removal presentation to Doyle and Philip.
02/5/4	Jeanne	June 02	SNR	Provide electronic copy of ecological risk subgroup minutes to Philip.

SNR=Status Next Report

ATTACHMENT E  
FACILITATOR NOTES AND OBSERVATIONS

**Meeting Summary**

The BCT met on May 21-22 at Fort McClellan. Much of the work involved decisions about either work plans for or the results of site investigations, including National Guard sites. The discussion of the Guard sites took place on the first afternoon in a 4-hour period that included a conference call with JoAnn Watson of the National Guard Bureau, one of her contractors, and a Shaw E & I (formerly IT Corporation) staff member. This was an innovation in the meeting process, and the team handled it fairly well despite technical problems and the fact that the contractor was new and unknown to the BCT.

Besides the decisions about a variety of specific parcels, there were notable agreements and reports of accomplishments. The BCT agreed that passive diffusion bags can offer an alternative water sampling method in certain cases, along with conventional sampling methods. The team agreed also that work plans should be written flexibly to allow filtering of water in permanently turbid wells, with clear and complete documentation. When they could not agree on a certain parcel, Philip, Ron, and Doyle decided on a site visit the following day. The team also approved Dan Copeland's plan for UXO removal in a particular grid in the by-pass area. And Jeanne Yacoub presented a summary of the site walk taken by Shaw E & I and EPA risk assessors, showing substantial agreements among them about the risk assessment process.

While the meeting was productive, several members noted that much of the relatively less complicated work has been done, and they are looking ahead to more complex decisions about FTMC parcels. They also foresee an increase in the external pressures and decisions that affect the team and can hinder its work. Given this situation, we agreed to include a training session as part of the June meeting, focusing on conflict resolution and feedback skills in the context of managing external pressures.

One example of external influence arose because of the surprise presence for much of the first day of Jim Grassiano, Philip Stroud's supervisor at ADEM. This appears to be a continuation of ADEM's policy, since last summer, of withholding full authority from Philip as a BCT member. When Jim moved from an observer's role to what I interpreted as that of participant in decision-making, I expressed my view that Philip was the ADEM representative on the BCT and that Jim should not be participating. Ron Levy noted that ADEM's original agreement in the partnering process fully empowered the ADEM representative. The issue was not resolved in this meeting, and can only be resolved, I think, at a level above Tier I. My concern is strictly with the integrity of the BCT and its team process (this is not about Jim Grassiano personally), and I urge Tier II to intervene and clarify this matter.

## ATTACHMENT F

### LAND REUSE CATEGORIES AND RISK ASSESSMENT CRITERIA

#### Land Reuse and How it Affects the Army's Approach to Cleanup at Fort McClellan

Intended land use is a critical factor in the Army's determinations for appropriate response actions at Fort McClellan. The Army incorporates into its response actions the various land use categories described in the *Fort McClellan Comprehensive Reuse Plan, Preferred Land Use Plan*, June 1997, as amended by the Economic Development Conveyance application submitted to the Army on March 2, 2000 (hereafter referred to as the Reuse Plan).

Response actions, those actions taken to reduce risk, are based on investigations and use risk assessment ("an organized process used to describe and estimate risk", National Research Council (NRC)) to determine appropriate levels of cleanup for various parcels of land on the Fort. Parcels are investigated based on findings in the Environmental Baseline Survey and the Archives Search Report for various constituents that may include hazardous, toxic, or reactive waste (HTRW) and/or ordnance and explosives (OE) to include unexploded ordnance (UXO). The Army examines possible actions to protect public health and the environment and chooses a response action that is determined to best meet the needs of the specific site and its intended use. For some reuse areas, limitations of technology and considerations of environmental impacts may limit certain reuse options.

Risk, as defined by the NRC, is "the probability that a substance or situation will produce harm under specified conditions" and is based on a combination of two factors - the likelihood that an event will occur and the consequence from that event. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) the Environmental Protection Agency (EPA) developed a process for estimating human health and ecological risks from chemicals. There are no accepted regulatory processes for estimating and describing safety risk from UXO; however, the U.S. Army Engineering and Support Center developed a process for OE sites that is described below.

In addressing public health risks, the goal is to reduce or eliminate public contact with HTRW or UXO under reasonably anticipated future land use. Different land uses require different levels of HTRW removal or UXO clearance. The approach to deciding on a response action for an HTRW site is different than that for an OE/UXO site. The risk assessment process for HTRW takes into account long-term exposures under various exposure pathways and considers future land use to determine response actions. For hazardous and toxic chemical contamination the EPA defines receptor scenarios that are used to determine risk for the various reuse categories by matching the EPA receptor scenario to the reuse category. Receptor scenarios are hypothetical populations potentially exposed to hazardous chemicals in environmental media. The risk assessment process for OE/UXO must consider the effects of instant exposures that may injure or kill a person and also considers future land use to determine response actions. For OE/UXO contamination the risk assessment process relies on the depth required by reuse activities as well as OE sensitivity, type, depth, and density to determine response actions.

#### Using Risk Assessment to Determine Response Actions for Hazardous and Toxic Chemical Investigation Sites

Fort McClellan uses a streamlined risk assessment (SRA) process to evaluate risk as part of the environmental investigation of properties contaminated with hazardous and toxic chemicals. The SRA concept was developed for FMC to capture the economy of scale associated with a large facility consisting of hundreds of individual sites, many of which were expected to have light or no contamination and to qualify for no further action. The basis of the SRA was the development of site-specific screening levels (SSSLs) that were considered as site-specific preliminary remediation goals. They incorporate all exposure and toxicity assumptions and the same level of documentation that is generally associated with a regular CERCLA baseline human health risk assessment; thus, the SRA provides the same precision and level of documentation of a CERCLA baseline human health risk assessment.

The local reuse authority stated reuse categories in the Reuse Plan, but receptor scenarios were not defined. The SSSL development process matched the Plan's reuse categories with the closest EPA standard receptor scenarios. In cases where there was not a direct match, the SSSL development adapted the closest EPA standard receptor scenario.

The EPA's receptor scenarios that capture and mirror the Reuse Plan's categories are - residential, worker, and trespasser/site visitor. The EPA **residential scenario** is used to evaluate risk for reuse categories identified for residential or retirement reuse. (Actually, the residential reuse scenario is included in all baseline risk assessments, even for parcels that are not proposed for residential reuse, to provide additional information and perspective for risk managers and the public.) The EPA **worker scenario** was used to develop the SRA **groundskeeper, construction worker, and highway worker scenarios** that Fort McClellan used in its risk evaluation approach. The **groundskeeper scenario** is used to evaluate risk for reuse categories defined as retail, office, industrial, education/training, public use, cultural, retreat, development reserve. The **construction worker scenario** is used to evaluate risk for most sites, because activities including excavation, grading, building demolition or erection, landscaping, installation of underground utilities, etc., would be required in the development of most sites. The **highway worker scenario** is used to evaluate risk for workers along the Eastern Bypass route. The EPA Region 4 **trespasser or site visitor scenario** is used as the basis for the SRA **recreational site user scenario** and is used to evaluate risk for active and passive recreation reuse areas.

EPA Headquarters and Region 4 have developed certain default exposure assumptions that apply to each reuse scenario. The default assumptions are designed to cover for the most highly exposed individual that could reasonably be expected to be present on a site under a given reuse option or exposure scenario. This strategy is called the Reasonable Maximum Exposure (RME) approach, which is intended to identify exposure at approximately the 90<sup>th</sup> percentile. It is a very conservative approach. It involves setting some exposure parameters at their high-end values and other parameters at their central tendency values. For example, the default exposure frequency for residents is 350 days/year and for workers is 250 days/year. The default exposure duration for residents is 30 years (6 years as a child and 24 years as an adult) and for workers is 25 years. These are examples of high-end values. The residential scenario accounts for both child and adult receptors. The SRA assigned an exposure duration of 25 years for groundskeepers but for construction workers assigned one year as a more reasonable exposure duration for that exposure scenario. According to EPA Region 4, the trespasser or site visitor scenario considers the typical trespasser/site visitor to be an adolescent aged 7-16 years with a 10-year exposure duration and an exposure frequency that takes into account site-specific factors such as distance from the site to residences and the attractiveness of the site to the trespasser/site visitor. Therefore, in addition to the assumptions made by EPA for the trespasser or site visitor, the SRA made additional assumptions for exposure frequency and exposure duration that were intended to reflect high-end values. The trespasser was assumed to visit the site 2 days/week for a total of 104 visits/year, is exposed to surface soil 4 hours/day, and is assumed to spend 2 hours/day in contact with surface water and sediment if surface water exists on the site. Information on the risk assessment process and these assumptions as well as other assumptions such as soil ingestion rates for each reuse scenario can be found in the Installation-Wide Work Plan.

The SRA quantified potential human health risks using sampling data from surface soil (0-1 ft), subsurface soil (1-12 ft), sediment, surface water, and groundwater. For soil, sediment, and surface water, exposure may occur over a random area. For example, a recreational site user may roam over several acres as he walks, hikes, or plays games (soil exposure). He may wade or play from any point on a shore or a pond or along the entire length of a stream as it passes through an area (sediment and surface water exposure). A construction worker may be exposed to a much smaller area while a groundskeeper may be exposed to a larger site of several acres. An exposure assessment was performed to estimate the type and magnitude of potential exposure of a receptor to chemicals found at a site

The receptor scenarios used in the SRA assume that 100 percent of a receptor's time is spent in contact with contaminated medium at the site. For example, it was assumed that the groundskeeper spends 8 hours per day, 250

days per year exposed to contaminated surface soil on a given site. This assumption could be overly conservative for some sites, particularly small ones, where a full-time groundskeeper would not be required. For these sites an adjustment is made for the reasonable amount of time the receptor could be expected to spend in contact with any contaminated medium on site so that the SSSLs can be adjusted to site-specific considerations.

In summary, response actions at sites under investigation for hazardous and toxic contamination are determined based on risk assumptions that take into account land use and the various EPA receptor scenarios for exposure that include exposure duration and frequency and exposure routes. Cleanup decisions are based on attaining an acceptable level of risk to human health for the proposed land use. When the risk assessment determines a site to be suitable for residential reuse (no matter what the reuse in the Reuse Plan) that site is released for unrestricted use. If the proposed reuse is not residential and land is not considered safe for residential use, land use controls may be applied to mitigate risk. For example, one such land use control may be a restriction on residential reuse (through deed restrictions, zoning, and the like).

### Using Risk Assessment to Determine Response Actions for OE/UXO Investigation Sites

Fort McClellan uses the Ordnance and Explosives Risk Impact Assessment (OERIA) developed by the U.S. Army Engineering and Support Center, Huntsville Corps of Engineers, to provide a qualitative risk assessment for OE sites by using direct analysis of site conditions and human issues that create OE risk. In order for response actions at OE/UXO areas to provide an acceptable level of protection for the planned reuse, assumptions must be made concerning the future surface and subsurface activity. The OERIA model process uses OE Type and Sensitivity, Accessibility to the site ranging from "Complete Restriction to Access" to "No Restrictions to Access" and Human Activities to determine risk. For Human Activities, a relationship between certain activities, OE depth, and OE contact probability is established. The contact probability factor associated with activities ranges from low to moderate to significant taking into account the probability that the activity will disturb the surface to some depth thus increasing the probability of contact with OE. For activities such as hunting, fishing, hiking, jogging, swimming, and child play OERIA determines a significant probability of contacting OE that is 0 - 6 inches deep and a low probability of contacting OE that is greater than 6 inches deep. For activities such as picnicking, camping, and metal detecting the OERIA determines there is significant probability of contacting OE that is 0 - 6 inches deep, moderate probability of contacting OE that is 6 - 12 inches deep, and low probability of contacting OE that is greater than 12 inches deep. For construction, archaeology, and crop farming the OERIA determines there is significant probability of contacting OE that is 0 - 12 inches deep and moderate probability of contacting OE that is greater than 12 inches deep.

The Reuse Plan assigns the following reuse categories to areas that are potentially contaminated with OE - industrial, active and passive recreation, mixed business, eastern bypass, development reserve, retail, and cultural. According to the Department of Defense (DoD) *Ammunition and Explosives Safety Standards* (DoD Standards) for executing cleanup and transfer of property contaminated by ammunition, explosives, and chemical agents (all considered to be OE), the OE shall be removed until an acceptable level of protection is reached consistent with the planned reuse for the area.

The DoD Standards criteria for evaluating risk of exposure to OE is based on the planned end-use categories of **Unrestricted**, **Public Access**, **Limited Public Access**, **Like Use**, and **Not Yet Determined**. **Unrestricted** includes reuse categories such as residential, commercial, subsurface recreational, construction activity, and utility. **Public Access** includes reuse categories such as surface recreation, vehicle parking, surface supply storage, farming, and agriculture.

**Limited Public Access** includes reuse categories such as wildlife preserve and livestock grazing. **Like Use** and **Not Yet Determined** do not apply to any reuse categories in the Reuse Plan. Where site-specific information is available regarding types of ordnance and estimated depth at which unexploded ordnance may be present, the remediation depth may be determined using that information in conjunction with the reuse categories. Site-specific information is or will be available at Fort McClellan through various Engineering Evaluations/Cost Analyses (EE/CAs) that are conducted on properties suspected of OE contamination.

In its risk assumptions, the Army determined the reuse categories labeled industrial, retail, mixed business, development reserve, and cultural are associated with routine interaction with the surface and near-surface soils by the employees of a future industrial facility and the construction or maintenance of industrial facilities and structures or underground utilities. The eastern bypass was associated with highway construction. Active recreation land use is assumed to be associated with activities performed with off-road motorized vehicles or any activity that requires amplified sound, artificial lighting, or prepared grounds or courses for activities such as golf, tennis, swimming, team sports. Consistent with this use is occasional interaction of the individuals with the surface and very near-surface soils. The construction of new recreational facilities and structures or underground utilities also is assumed to be reasonably associated with this land use. All of these reuse categories fall into the **Unrestricted and Public Access** end-use categories defined in the DoD Standards.

The Army defines passive recreation land use in conjunction with the Reuse Plan's scenario to include hiking, walking, bicycling, picnicking, horseback riding, and other non-motorized activities (Department of the Army *Guidance for Leasing of Base Realignment and Closure Properties*, May 1996). Consistent with this use is the occasional incidental interaction of the individuals with the surface and very near-surface (0-6 inches) soils. No significant construction of new recreational facilities and structures or underground utilities is assumed to be reasonably associated with this land use. This land use falls under the **Limited Public Access** end-use category defined in the DoD Standards.

The Reuse Plan does not offer a definition of passive recreation but does offer the following on page 89. It describes areas of Recreation/Open Space. Open space is a network of passive and active recreation areas so that each of the neighborhoods is linked to the larger open space system surrounding the site. It further defines active recreation areas including Cane Creek Golf Course, a Retirement Golf Course, Gullion Recreation Fields, all serving as major active recreation areas. It mentions Town Center Park and Buckner Park. It then mentions a trail system that connects these different open spaces with their surrounding neighborhoods.

The definition of activities considered for the Wildlife Refuge may be different in that the mission and goals of the U.S. Fish and Wildlife Service differ from JPA land reuse activities. Goals of the refuge include preserving and enhancing the natural mountain longleaf pine ecosystem; perpetuating neotropical migratory bird resources; preserving the natural diversity and abundance of fauna and flora of the area with special emphasis on endangered and threatened species; providing compatible, wildlife-dependent recreational opportunities such as hunting, fishing, wildlife observation, photography, environmental education and interpretation; promoting an understanding and appreciation of fish and wildlife ecology. Wildlife dependent recreational activities are provided so long as they are compatible with the goals of the refuge.

In summary, the Army's response actions to OE/UXO are determined based on risk assessment that takes into account land use and in turn on the depth of activities planned for that land use while considering the effects of an instant exposure, OE type, sensitivity, density, and depth. The Army will perform a risk management analysis to determine an appropriate response and this analysis takes into account various factors to include OE findings as well as environmental impacts of the action and cost. Response actions could include land use controls such as signs or fences to restrict public access. Other actions may include public education programs on OE and UXO.

## ATTACHMENT G

### MINUTES FROM ECOLOGICAL RISK SUBGROUP SITE VISIT OF MAY 9 - 10, 2002

#### Attendees:

Sharon Thoms (USEPA, Region 4)  
Cheryl Nybro (Gannett Fleming)  
Rob Zimmer (Shaw E & I)  
Rich Prann (Shaw E & I)  
Josh Jenkins (Shaw E & I)  
Randy McBride (Shaw E & I)  
Bill Garland (USFWS)  
Ben Hodges (Shaw E & I)  
Lisa Kingsbury (FTMC)

#### Stream Habitat:

1. Remount Creek itself was experiencing significant flow due to the recent rain storms; however, most of the small tributaries that feed into Remount Creek (particularly in the area of the Skeet Range) did not have flow. Sharon pointed out that the activities related to construction of the "Eastern By-Pass" have already infringed on the creek and that a re-routing would probably take place at some point in the future, further infringing upon the Remount Creek habitat. Additionally, Remount Creek in this area would also be expected to receive significant runoff from the by-pass once completed. The group agreed that an exhaustive aquatic survey would not be warranted at this point in time given the habitat disturbance that will take place in the near future from by-pass construction and related activities.
2. Sharon and Cheryl indicated the presence of an "aquatic community" even though they acknowledged that Remount Creek, and particularly its feeding tributaries, were ephemeral in nature.
3. Bill Garland stressed the point that Remount Creek in the vicinity of the IMR ranges is not a unique or sensitive habitat that is particularly worth protecting, but that downstream habitats were worth protecting due to the potential presence of gray bats in the vicinity of the Cane Creek Golf Course.
4. The group agreed that Remount Creek is a resource worth protecting, but the greatest ecological value probably lies downstream, closer to the golf course, where there is greater flow and a greater likelihood that the federally-endangered gray bat would be more likely found foraging.
5. The group concluded that COPEC concentrations within surface water and sediment immediately downstream of the Skeet Range (e.g. near Motor Pool 3100) would be a good indicator of whether COPECs were migrating downstream from the IMR ranges to the higher quality habitats of Remount Creek.
6. In summary, the group concluded that biological sampling in Remount Creek and its tributaries was not appropriate at this time. Assessment of the potential for downstream migration of COPECs in Remount

Creek would be accomplished by assessing surface water and sediment data collected immediately downstream of the Skeet Range (e.g. Motor Pool 3100). This surface water and sediment assessment would be included in the Problem Formulation, and if the data indicated insignificant migration downstream, then further ecological assessment of Remount Creek associated with the IMR ranges would not be necessary. It was also agreed upon that if Remount Creek needed to be re-routed as a consequence of the by-pass construction that it should be re-routed in a location that exhibits equal or less contamination than its present location.

#### Terrestrial Habitat:

1. The group had a lengthy discussion about the ecological resources that should be protected and the resources that were at greatest risk from the COPECs at the IMR ranges. Based on the COPECs at the IMR ranges (Sb, Cu, Pb, and Zn) it was concluded that invertivorous and carnivorous mammals and birds have the greatest potential for exposure and subsequent risk from the COPECs at the IMR ranges. Sharon indicated that although it may be relatively easy to determine whether small mammals and birds have been exposed to COPECs or not, it is difficult to draw conclusions about adverse impacts from those exposures. Additionally, it is difficult to collect an ample number of small mammals, particularly insectivorous shrews, in order to conduct robust statistical analyses. If we were only able to collect 2-3 live shrews and one had very low tissue concentrations and one had extremely high tissue concentrations, it would be difficult to interpret the results relative to characterizing risk.

Based on the inherent difficulties in collecting and analyzing small mammals for COPEC-induced effects, it was concluded that small mammal studies at the IMR ranges would not be appropriate.

2. Sharon recommended we collect soils for laboratory-based earthworm testing. Earthworm testing (mortality and tissue burden) would enable us to assess the potential for acute effects to the bioturbative earthworm (a key component in many terrestrial food webs) and also assess the effects of earthworm body burdens of COPECs through insectivorous and carnivorous food webs.
3. The group agreed that the laboratory-derived body burdens of COPECs in earthworms would be used in carnivorous and insectivorous food web models to predict the potential for adverse effects in these higher trophic level feeding guilds. These food web models would incorporate realistic area use factors (AUF), diet compositions, and other site-specific input parameters where available in order to estimate the dosage of COPECs to representative carnivores and insectivores. Proposed food web algorithms will be presented in the Problem Formulation for USEPA review. This desk-top modeling approach would eliminate the need for field collection of small mammals and tissue analysis.
4. The laboratory-based earthworm tests will require the collection of soil from the IMR ranges. The group agreed that the rocky "soil" present within the impact berms is not representative of the natural soil at these ranges and the very low organic content of these "soils" might significantly reduce the survivability of earthworms exposed to them, irregardless of the COPEC concentrations. Therefore, the group agreed not to use the "soil" from these impact berms in the earthworm tests. The group agreed that soil should be collected from areas within the ranges that are representative of the natural soils in these areas and that have a higher organic content that is more capable of supporting a viable earthworm community. Soils

immediately above the impact berms and in the flat areas between the firing lines and the impact berms are the areas that were suggested for soil collection.

5. It was agreed that soil would be collected from five (5) locations within the IMR ranges that are representative of the concentration gradient of lead detected in surface soil throughout the IMR ranges. It was agreed that five different lead concentrations would provide sufficient resolution to identify an adverse effect level (LOAEL) and a no adverse effect level (NOAEL). It is important to identify both the NOAEL and LOAEL when deriving clean-up goals.
6. In order to determine whether the soils at the IMR ranges are similar or not with regard to binding capacity and bioavailability, several analyses will need to be conducted. The group agreed to collect soil from each of the IMR ranges and analyze them for parameters that control the soil's metal-binding capacity (e.g. pH, TOC, phosphate, grain size, etc.). These range-specific soil data would be used to assess whether the soils at the IMR ranges are similar or not with regard to binding capacity. If the soils are similar, then the soils at IMR ranges would be assessed as a single unit and five (5) soil samples would be collected from the IMR ranges in total. If the soils are dissimilar with regard to binding capacity, then the ranges would be segregated by soil type and five (5) surface soil samples would be collected from each soil type for earthworm testing.
7. It was also agreed upon that if the soil types and binding capacities of soils at the IMR ranges were determined to be similar to soil types and binding capacities of soils at other ranges at FTMC, then soil clean-up goals determined for the IMR ranges would be applicable to other ranges at FTMC.