



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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Mr. Philip Stroud
Alabama Department of Environmental Management
Hazardous Waste Branch, Land Division
1400 Coliseum Boulevard
PO Box 301463
Montgomery, AL 36110-2059

SUBJ: EPA Comments on Installation-Wide Work Plan; Fort McClellan

Dear Mr. Stroud:

The Environmental Protection Agency (EPA) has reviewed the subject document and offers the enclosed comments to the Alabama Department of Environmental Management (ADEM) for your consideration. As ADEM considers appropriate, please transmit these comments to Fort McClellan (FTMC). If you have any questions, please call me at (404) 562-8549.

Sincerely,

Doyle J. Brittain
Senior Remedial Project Manager

Enc.

- cc: Ron Levy, FTMC
- Lisa Holstein, FTMC
- Ellis Pope, USA/COE
- Jeanne Yacoub, IT
- Daniel Copeland, CEHNC-OE-DC
- Maj. Wayne Sartwell, ALANG
- Maj. Bernie Case, ALANG
- Hugh Vick, Gannett-Fleming
- Ted Simon, EPA/OTS

**EPA Comments on Installation-Wide Work Plan
Fort McClellan, Calhoun County, Alabama; Revision 2; February 2002**

General Comments

1. With the exception of the issue given in Specific Comment No. 1, the revisions to the facility description have been very well done. The facility description is the best EPA has seen in any of the documents from Fort McClellan.
2. Region 4 Human Health and Ecological Health Bulletins should be reviewed prior to revising this document. For human health concerns especially, there are several significant deviations from Region 4 guidance.

Specific Comments

1. Page 2-11. With one exception, this surface hydrology discussion mentions nearly every creek shown on Figure 2.4. Cave Creek is mentioned as one of the three major creeks draining Fort McClellan. However, Remount Creek, which has a drainage area nearly as big as Cave Creek, is not mentioned. Remount Creek should be added to this discussion.
2. Figure 3-2, Generic Ecological Conceptual Site Model. This figure includes the words "No Change" in many boxes and it is unclear what this term represents or if the inclusion of no change was accidental. Please either include the definition for no change in the legend or add in the appropriate terms should be added for each box.
3. Page 5-2, Forty-Second Sentence. The sentence discusses using frequency of detection to eliminate chemicals for further consideration. Frequency of detection should not be used for elimination of chemicals during the COPC screening process. However, it can be used in a weight of evidence analysis. Frequency of detection should not be used in this section but may be used at the end of the risk characterization section during a weight of evidence form of analysis.
4. Page 5-3, Twenty-Second through Thirty-Fourth Sentences. This paragraph discusses comparison of chemical concentrations to background concentrations and the use of a two-step approach. The first step would be a comparison using the 2x's mean approach, which is appropriate. The second step presented would be a supplemental comparison step, using more rigorous statistical and geochemical analysis as described in Section 5.2.1. The use of additional statistical and geochemical analysis is not appropriate for inclusion during the COPC screening process. However, if additional statistical and geochemical analyses are performed, then this analysis may be used in a weight of evidence approach, along with frequency of detection, hot spot analysis, etc. The text should be amended to only address the 2x background comparison during the COPC selection process. The discussion about the results from any statistical and geochemical analysis should be presented for inclusion at the end of the risk characterization section.
5. Page 5-4, First Sentence. The text states that a table will be prepared for each medium and the table should include 8 different columns. It is unclear what rationale was used to select some of the information. The information that raises concern for inclusion are:

- 1) arithmetic mean of site concentrations; and 2) 95% upper tolerance limit on the background set. While it may be appropriate to include arithmetic mean of site concentrations, at minimum, the maximum site concentration should be presented for each constituent. It is unclear why the 95% upper tolerance limit on the background set is being included. This table should include the information shown in Region 4 Human Health Risk Assessment Bulletin Number 1, Page 1-3.
6. Page 5-7, Equation 5-4. This equation is proposed for use on non-parametric data in place of Formula 5-3 because it is believed that the Chebychev equation (Eq. 5-4), based on professional judgment by IT personnel is the preferred equation. Any deviation from approved Region 4 UCL calculations must be approved by the EPA Region 4 Risk Assessment Section. It is recommended that these risk assessment personnel be contacted in order to discuss the use of the Chebychev equation. Until official approval is received, equation 5-3 will be used to determine UCLs for nonparametric data.
 7. Page 5-7, Thirtieth Sentence. The text states that other alternative approaches may be used if they become better developed and more generally accepted. Unless official approval is received from the Region 4 risk assessment section, only equations Eq. 5-1, Eq. 5-2, and 5-3 will be used. The text should be changed to state this fact.
 8. Page 5-9, Section 5.2.2.3. Throughout this section, dermal exposure factors, such as soil-to-skin adherence factors and body surface area exposed, are either obtained from the EPA 1997b, Exposure Factors Handbook or from Ted Simon's Risk Review Comments, Human Health Aspects, Fort McClellan, 1998. However, it is unclear why appropriate US EPA Dermal guidance, either 1992 or the newer 2002 dermal guidance, was not used as sources of these factors. It is important that the EPA dermal guidance be utilized in this risk assessment.
 9. Page 5-9, Twenty-Eighth through Thirty-Fifth Sentences. The text discusses the use of a fraction of exposure term (FI) to allow for adjustment for the fraction of time a receptor plausibly could be expected to spend in contact with the contaminated medium on the site. It is stated that the default value for FI is 1, unless site-specific data permits justification of a smaller value. It would be more appropriate to adjust the exposure duration or exposure frequency term, on a site by site basis, rather than develop an arbitrary value for FI. For example, the recreational site user was given an FI of 0.25 for incidental ingestion of soils. It is unclear how the FI of 0.25 was determined. Additionally, the use of FI adds a tremendous amount of subjectivity to the risk characterization. Therefore, fraction of exposure will not be utilized to calculate risk to receptors and the text in this paragraph and throughout this section should be modified to delete the inclusion of the fraction of exposure term (Table 5-1 and equations 5-8 through 5-12 need to be amended to delete FI as a pathway variable). The text can include a discussion about the potential need to adjust some of the acceptable exposure factors, based on a site-specific condition.
 10. Page 5-13, Second Sentence. It is stated that a groundskeeper drinking water ingestion rate is assumed to be 1 L/day. The rationale to support this rate is not included and it is

unclear why 2 L/day was not selected. A groundskeeper would be expected to drink water throughout the day while working on the grounds and it is assumed that the groundskeeper would be an adult. Therefore, 2 L/day should be the drinking water ingestion rate and the text edited to state this rate.

11. Page 5-14, Thirty-Third Sentence. It is stated that a construction workers drinking water ingestion rate is assumed to be 1 L/day, the same as the groundskeeper. 1 L/day was found not to be appropriate for the groundskeeper and it is also not appropriate for the construction worker. The ingestion rate should be changed to 2 L/day.
12. Page 5-17, Fourteenth through Twenty-Second Sentences. The text discusses consumption of game, assumed to be venison. It is stated that 30 g/day ingestion rate combined with the recreational site user BW of 45 kg is considered to be sufficiently conservative for all receptors. While the 30 g/day is acceptable as the ingestion rate, it is unclear why the BW of 45 kg was chosen for the resident. It would be more appropriate to perform an age adjusted venison consumption calculation rather than using a BW of 45 kg for the resident. The text should be changed, accordingly.
13. Table 5-2, Site Evaluation Step One. For surface soil and the residential exposure scenario, it is stated that a comparison will be made unless the site is physically unsuitable for residential use. It is unclear what or who will determine if a site is unsuitable for residential use. Region 4's guidance is that a resident will be evaluated and no determination is made with regard to suitability of the site. The text should be edited to state the comparison would be made and nothing more. This issue with regard to determining if a receptor scenario is appropriate or not appropriate needs to be made on a site by site basis. The text in the comment column should state that a comparison will be made unless site specific conditions would indicate that a specific exposure scenario is not warranted (except for the resident, as previously stated).
14. Page 50, Section 5.2.5.3., Future Groundwater Conditions. This section of the document discusses the use of Ft. McClellan site-specific soil screening levels (SSSSL) developed using site-specific values for several geologic and hydrogeologic parameters to create a Ft. McClellan groundwater screening value. The discussion presented in this section does not belong in a risk assessment, rather, this discussion belongs in Section 4.0 – Remedial Investigation. Additionally, it is unknown if a EPA Region 4 hydrogeologist has reviewed this proposed methodology. If not, then this section should be forwarded to them for review.
15. Page 5-50, Twenty-Seventh Sentence. The text states “the resulting SSSSLs, however, may be unnecessarily conservative or restrictive”. This sentence is addressing the use of soil screening values available from EPA. While the EPA SSLs may be conservative, they should not be considered to be “unnecessarily conservative” or “restrictive”. This sentence should be deleted from the text.
16. Page 5-58, Twenty-Ninth Sentence. This sentence cites the EPA Process Document as the reference that will be followed during the Ecological Risk Assessment (ERA).

Additionally, EPA Region 4 Ecological Risk Assessment Bulletins should also be cited and used during the ERA process.

17. Figure 5-2, Decision Diagram/Flow Chart for Ecological Risk Assessment. This flow chart does not follow the eight step process shown in Figure 5-1. Step 1 in Figure 5-2 shows the start of the screening level risk assessment (SLERA) by evaluation of chemical data and screening against benchmarks. For Step 2, it is simply stated that results will be issued in site-specific SI reports. Figure 5-2 should be re-drawn to follow the steps outlined in Figure 5-1.

Additionally, the box entitled "Initiate the Benchmark Screening Assessment" includes a statement to discuss background metals. It is unclear why background metals are being discussed at this point because background comparisons and descriptions should be included in Step 3. Therefore, the text "discuss background metals" should be removed from the box.

18. Page 5-64, Twenty-Third Sentence. The text states that the ecological site conceptual model (SCM) is a simplified, schematic diagram. The SCM presented in Figure 5-3 is not a simplified diagram and it is very difficult to read due to its complexity. The text should be re-worded to just state that the SCM is a schematic diagram.
19. Figure 5-3, Generalized Conceptual Site Model for SLERA. This figure is too crowded and very difficult to read. The figure should be broken down into several figures in order to present the information in a readable format.
20. Page 5-68, Fourth Sentence. EPA Region V ecological data quality levels (EDQL) are listed as the third source in the hierarchy of soil ESVs. Rationale should be added to the text justifying the inclusion of the Region V data above the EPA Region III Biological Technical Advisory Group (BTAG) values.
21. Page 5-68, Fifteenth Sentence. EPA Region V (EDQLs) are listed as the third source in the hierarchy of surface water ESVs. Rationale should be added to the text justifying the inclusion of the Region V data above the EPA Region III Biological Technical Advisory Group (BTAG) and other two sources listed.
22. Page 5-68, Thirty-Second Sentence. EPA Region V (EDQLs) are listed as the third source in the hierarchy of soil ESVs. Rationale should be added to the text justifying the inclusion of the Region V data above the other three references presented in the same text.
23. Page 5-70, Thirty-Second Sentence. This bullet states that a comparison will be done between site chemical concentrations to naturally-occurring background concentrations. This comparison is not done until Step 3. This statement should be removed from this section.

24. Page 5-71, Thirty-Third Sentence. This sentence and the remaining text in this paragraph presents a discussion concerning the comparison of site chemical concentrations to naturally-occurring background concentrations. While the methodology discussed is appropriate for inclusion in Step 3 of the ERA, it does not belong in Step 1. The background comparison should be moved to Step 3 of an ERA or the SLERA should be expanded to include a Step 3a, that would allow for the comparison to background.
25. Page 5-72, Twenty-Third through Thirty-Fifth Sentences. The discussion contained in these sentences pertains to the use of integrated statistical and geochemical background assessment. While this approach provides information that should be used in the refinement step of the COPC selection process, it should not be included in Step 1 of the SLERA, as presented here. This section should be moved to Step 3.
26. Page 5-73, Twelfth Sentence. It is stated that the integrated statistical and geochemical approach will be used to determine if an inorganic constituent is not naturally occurring. While this approach provides information that should be used in the refinement step of the COPC selection process, it should not be included in Step 2 of the SLERA, as presented here. This section should be moved to Step 3.