UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

May 3, 2004

Ms. Sharon Cotner
FUSRAP Program Manager
St. Louis District, Corps of Engineers
8945 Latty Avenue
Berkeley, Missouri 63134

Re: The Draft Record of Decision for the North St. Louis County Sites (February 4, 2004)

Dear Ms. Cotner:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft ROD package. Our comments are enclosed. The EPA has a general concern that the information is organized and presented in a way that makes it difficult to find and understand the critical information. We made some specific comments to indicate where we think the discussion could be made more clear, but did not try to comment each and every place a similar comment could be made.

We appreciate the opportunity to review the Draft ROD and look forward to your response. Please call if you have any questions or to discuss how we should proceed.

Sincerely,

Daniel R. Wall
Remedial Project Manager
Superfund Division

Enclosure

cc: Larry Erickson, MDNR
Eric Gilstrap, MDNR Field Office

U.S. EPA Comments
Draft Record of Decision
For The
North St. Louis County Sites
May 3, 2004

General Comments

1. The manner in which the information is organized and presented frequently makes the already complex subject matter even more difficult to follow. Information already presented and analyzed in the RI/FS reports need only be presented in summary form in the ROD. The summary discussions should emphasize the information that drives the decision-making. Information not directly related to the decision at hand should be made brief or omitted altogether. In some cases, the same information is presented multiple times in various places when once would be sufficient. In other cases, different information on the same subject is presented in a variety of locations, when presenting it in one place would make it more clear. In some cases, elements critical to complete definition of the remedy are barely mentioned in passing. We have provided some specific comments to indicate where we think the discussion could be made more clear, but did not try to comment each and every place a similar comment could be made.

2. In addition to being a legal document that certifies the remedy selection process was carried out in accordance with CERCLA and the NCP, the ROD also serves as a communication tool for the public explaining the contamination problems that the remedy is addressing and the rationale for its selection. So, some greater thought should be given to using language that a lay person can understand.

3. More effort needs to made on focusing the discussion to bring out the link between risk, remedial action objective (RAO), and selected remedial action. No explanation is provided for a selected remedy intended to result in unlimited use when reasonably anticipated land use for most properties is described as commercial/industrial.

4. The discussion is often unnecessarily complicated by qualifying every determination on the basis of whether MED/AEC material or non-MED/AEC material is being addressed. Also, the references continue to leave open the question of whether there are non-MED/AEC problems identified that are not being addressed. We suggest the scope of the action being undertaken by the USACE and the scope of other problems identified but not included as part of the response action be clearly explained in an introductory section and repetitive use of the MED/AEC qualifier be omitted or minimized thereafter.

5. The manner in which the USACE proposes to handle what has been termed "inaccessible soils" seems to be dealt with inconsistently in the various places it is described within the document.

The proposal seems to be made more complex than necessary which contributes to the confusion. Further, the standard applied seems inconsistent with the CERCLA remedy selection process. The contingency tends to be described as something which may or may not occur, making it very close to a non-decision, and making it difficult to discuss the specific use restrictions considered necessary. The costing methodology seems to try to fit out-year capital costs in the O&M category, making cost comparisons difficult. The USACE should also be aware that identifying a contingency remedy will postpone construction completion until such time as the remedy is implemented or a decision is made not to implement. We suggest that the USACE make a clear determination, based on an examination of risks and the remedy evaluation criteria, which properties will have the soils excavated and which properties will have the soils managed in place. This will help support a specific discussion of which properties require institutional controls and what uses need to be restricted or managed.

6. The USACE selects remedial goals for Th-230 based on an interpretation of 40 CFR 192 that is inconsistent with EPA's interpretation as described in OSWER 9200.4-25. The comments are the same as provided on the FS/PP and we will not repeat them again here.

7. The index of the Administrative Record is not a part of the ROD deliverables we received. The AR is a critical part of the ROD package and an index should have been submitted along with the draft ROD and Responsiveness Summary for review.

Specific Comments

Declaration:

1. 1.1 Statement of Name and Location, pg. 1-1 – EPA's ROD Guidance provides for identifying the site name as listed on the NPL and EPA's data base (CERCLIS) identification number. See Section 6.2.1 of the ROD Guidance. We suggest identifying the site as the North St. Louis County Sites portion of the St. Louis FUSRAP Site, which includes the St. Louis Airport/Hazelwood Interim Storage/Futura Coatings Site(s), or something to that effect. The EPA ID number is MOD980633176.

2. 1.2 Statement of Basis and Purpose, pg. 1-1 The proposed language should be replaced with more concise statements consistent with standard language. See Highlight 6-2 of Section 6.2 of the ROD Guidance. As written, this section has more detail than appropriate, making it more difficult to follow the certification statements, which are intended to be its key components. This section should specify whether the State concurs or does not concur with the selected remedy.

3. 1.3 Assessment of the Site, pg. 2 – As written, this statement leaves open the question as to whether there are non-MED/AEC hazardous substances or pollutants or contaminants that

aren't being addressed which might threaten the public health or welfare or the environment. We suggest clarifying this.

4. 1.4 Description of the Selected Remedy, pg. 1-2 – This section should be made more concise and more consistent with the format provided in Section 6.2.4 of the ROD Guidance. The description should include a brief explanation of the site cleanup strategy and how this action fits into the overall FUSRAP Site management plan. There should be a brief description of what the principle threat materials are and how they in particular will be addressed. These would be in addition to the bullets on the major elements of the selected remedy. The discussion of 5-year reviews is more appropriate for the next section on statutory determinations.

5. 1.4 Description of the Selected Remedy, pg. 1-2 – In the 1st bullet, what is meant by "the" 30-year time frame?

6. 1.4 Description of the Selected Remedy, pg. 1-2 – The meaning of bullet 3 is not clear in that it refers to ICs being needed for soils that remain inaccessible throughout the remediation effort but only until they become available.

7. 1.4 Description of the Selected Remedy, pg. 1-3 – The meaning of bullet 4 is not clear. The Declaration should contain a brief and simple description of the remedy. The use of as yet undefined terms such as the hydro-stratigraphic unit designations and "short-term monitoring" make it more difficult to be clear.

8. 1.4 Description of the Selected Remedy, pg. 1-3 – The description of the radon standards appears out of place in this section.

9. 1.5 Statutory Determinations, pg. 1-4 – The statutory determinations don't quite match the standard language as described in Section 6.2.5 of the ROD guidance, especially with respect to the use of permanent solutions and alternative treatment technologies. The preference for treatment as a principal element is not limited to toxicity and should also consider mobility and volume.

Decision Summary:

10. 2.1.3 Lead and Support Agencies, pg. 2-2 – Most of the information presented here including discussion of the transfer of cleanup responsibility and the FFA would seem to be more appropriately placed in the next section - Site History and Enforcement Activities. A brief statement on lead and support agencies would meet the expectation of the ROD guidance.

11. 2.2.2 Previous Investigations and Response Actions, pg. 2-5 – We recommend reducing the investigation history to a concise statement conveying the message that numerous investigations

have been conducted at the site over the past 28 plus years and omitting the detailed information provided in Table 2-1. This seems to be more detail than necessary for a ROD, which doesn't add significantly to the explanation of the selected response action while making the ROD more cumbersome to read through. We assume that all of the listed documents are in the Administrative Record, an index for which should accompany this document as part of the ROD package.

12. 2.2.2.2 Previous Response Actions, pg. 2-9 – We would also omit table 2.9 and briefly summarize the types of removal actions that have been done and the time period over which they were completed.

13. 2.4 Scope and Role of the Operable Unit, pg. 2-11 – As written, this section is missing some information and contains some of the wrong sort of information. This section should focus on the overarching St. Louis Site strategy and explain how this operable unit action fits into the plan. The discussion on transition from removal action to remedial action is pertinent to the subject, but the process isn't explained as clearly as it could be. Rather than just saying all removal actions will be terminated and incorporated into the remedial action, more explanation as to how the transition will be implemented should be provided.

14. 2.4 Scope and Role of the Operable Unit, pg. 2-12, 2nd full ¶– This paragraph doesn't clearly convey its intended meaning, i.e., that areas previously cleaned up via a removal action will be tested to make sure they meet the final cleanup level selected in the ROD, and if any don't meet final ROD cleanup levels more work will be done so that they meet the cleanup level.

15. 2.5 Site Characteristics, pg. 2-12, and following sections – As a general observation, the information about site characteristics would be easier to understand if each sub-site were discussed as a unit, i.e., SLAPS soil, groundwater, current and potential future land use, current and potential future water use, human health risks, ecological risks, perhaps through remedial action objectives, then SLAPS VPs soil, groundwater, etc. . The current presentation in which each of these factors are discussed independently for all sub-sites makes the information on each sub-site very difficult to follow. Also, by discussing each sub-site as a unit, it would be easier to decide what information is really relevant and what could be eliminated without sacrificing substantive information needed to support the remedial action objectives and, ultimately, the selected remedial action. It would also make it easier to correlate sub-sites and response actions.

16. 2.5 Site Characteristics, pg. 2-12, and following sections – These sections are not clear on some of the elements that make up a comprehensive overview of the site. See Section 6.3.5 of the ROD Guidance for an outline of these elements. For example, we don't find a discussion of the conceptual site model on which the risk assessment and response actions are based. The site conceptual model is referenced in § 2.7.1.1 (pg. 2-24), pertaining to human health risks,

but not otherwise described. The sections on nature and extent of contamination are largely limited to listings of constituents that have been detected but, in the manner presented, it is difficult to sort out what constitutes the principal concerns. There is limited information presented on waste characteristics, quantities, whether or not the contaminants are co-located, lateral and vertical extent, and routes of migration. Such information would make it easier to correlate the remedy selection rationale with problems being addressed.

17. 2.5.4 Hydrogeology/Groundwater, pg.2-13 – We believe the conceptual groundwater model shown in Figure 2-18 of the Feasibility Study report provides a much better illustration of the HZs than Figure 2-7 of the ROD and should be included as well.

18. 2.4.5 Hydrology/Ground Water, pg. 2-14, 1st partial ¶ – Stating that removal of the contaminated soil will "likely" remove the source material for groundwater contamination suggests significantly more uncertainty about the effectiveness of the remedy than is probably intended.

19. 2.5.7.1 SLAPS, pg. 2-16, 2nd full ¶ – This paragraph seems to say that VOCs were found at SLAPS, but because they didn't come from MED/AEC activities, no information is being provided and they aren't be addressed in the cleanup. We know the intent is to cleanup up co-located contaminants that didn't come from MED/AEC activities, but this intent does not come across in the information presented. As written, the information presented here and elsewhere contributes to the impression that the USACE is leaving unidentified problems behind after its cleanup action, which would contradict the conclusion that the remedy is protective. To the extent the VOCs are not collocated but the USACE has information about them, this information should be included.

20. 2.5.7.1 SLAPS, pg. 2-16, 2nd full ¶ – What does it mean to say that soil "generally" does not exhibit RCRA hazardous waste characteristics? What is the purpose of saying that surrounding industrial sites "could" generate RCRA-listed wastes? The information provided is too vague to make it understood whether this a significant finding or not.

21. 2.5.7.1 SLAPS, pg. 2-16, 4nd full ¶ – It's not clear what the specific VOCs are that are discussed here or whether the VOCs and other contaminants are considered to be MED/AEC wastes or are collocated with MED/AEC wastes. The subsequent sections on other areas of concern are similarly vague on this issue.

22. 2.5.7.4 Structures, pg. 2-19 – The information presented here on contaminated structures is not adequate either to support any decision as to the need to cleanup structures or to make a decision as to what that cleanup action should be. This is inconsistent with a ROD that identifies remediation of buildings and structures as an element of the selected remedy.

23. 2.6.1 Current and Potential Future Land Use, pg. 2-20 – The discussion should more clearly present the basis for the reasonably anticipated land use assumptions being stated here. Looking at Table 2-3, it appears that, other than the primary storage areas, few changes in land use are anticipated. Was any kind of sensitivity analysis done to get an idea of how much difference, if any, the anticipated land use would make to the various remedial alternatives? While zoning restrictions do have a potential impact on future land use, they are subject to change over time. Finally, what consideration, if any, was given to the possible relocation of the St. Louis Airport elsewhere at some time in the future in terms of how that would impact potential land use in this area, since elsewhere in the draft ROD the presence of the airport is cited as a reason for there not being more residential development in this area.

24. Table 2-3, pg. 2-21 – We suggest the information in this table could be presented in a more easily understandable fashion by discussing the various relevant categories of properties and then listing the individual properties that would fall into each category. As it is, it is unclear what information from the table the USACE considers relevant to the decision at hand or why it is relevant. If the table is used, columns headed "Current Receptor" and "RME Receptor" would be more accurately captioned "Current Land Use" and "Anticipated Future Land Use" since the idea of receptors is more relevant to the discussion of risk, which is presented next. Also, we could not find an explanation of the meaning of the "(A), (L), and (C)" designations on some of the properties.

25. Section 2.7 Summary of Site Risks, pg. 2-24 – The section is generally devoted to explaining how the risk assessment was performed but seems not to provide a clear presentation of information that is directly relevant to the action proposed in the ROD. As written, it's very difficult to tell whether sufficient relevant information has been presented to justify any cleanup action. While we understand that the ROD guidance recommends explaining the risk assessment process, the focus of this discussion is supposed to be on the "risk drivers." See Section 6.3.7.1 of the ROD Guidance for guidelines on how to present the pertinent information. The basic purpose of the discussion of risk is to summarize what the contaminants of concern are, what risks/hazards they present outside the acceptable range, and where those unacceptable risks/hazards occur. The discussion should also function to explain the technical information presented in the tables in plain English that a lay person can understand. The discussion should address COCs rather than PCOCs. While there's a lot of information presented here, much of it seems largely irrelevant to the basic purpose.

26. Soil, pg. 2-25 – If radionuclide COCs *include* the ones listed here, what other radionuclide COCs are there that aren't listed here?

27. Identification of Receptors and Primary Exposure Parameters, pg. 2-28 – Explain that standard EPA exposure assumptions were used, and if not, why not.

28. 2.7.1.3 Toxicity Assessment – Some thought should be given to explaining this in a way that is more easily understandable.

29. 2.7.1.4 Risk Characterization, pg. 2-29 – Under the standard process, there is one reasonable maximum exposure (RME) for a given "site" which is used to derive site-specific remediation goals. The RME is generally associated with reasonably anticipated future land use since the objective is generally to identify the most constraining hypothetical land use that is also reasonable to anticipate. The process outlined here that identifies the RME for current use and the RME for hypothetical future use is not consistent with the standard process. At a minimum, there needs to be an explanation of why this is being done and how it is being considered in a way that is consistent with the standard process.

30. Uncertainties, pg. 2-37 – The risk characterization should include a brief discussion of the significant sources of uncertainty and an indication of whether the uncertainties underestimate or overestimate the potential risk. Some thought should be given to presenting this information in more clear and concise fashion and making its relevance more easily understandable.

31. 2.7.2 Ecological Risks, pg. 2-38 – The emphasis should be on presenting the outcomes that are pertinent to the decision process rather than presenting the process itself.

32. 2.7.3 Basis for Action, pg. 2-47 – We recommend using standard language for the basis for action and omitting the explanations which only serve to make the determination less clear.

33. 2.8 Remedial Action Objectives, pg. 2-47 – This section has too much information that doesn't serve to make clear and precise statements of the RAOs and some information we would expect to see in this section is not provided. See Section 6.3.8 of the ROD Guidance for further explanation. The statement of the RAOs sets the stage for the discussion of remedial alternatives in the next section. It's important to have a clear understanding of what the alternatives are expected to achieve when evaluating and comparing these alternatives. Since the RAOs are the main topic for this section, we recommend including the RAOs in the body of the text and not putting them in a table. The basis for the RAOs in terms of anticipated land and water use should be provided. The discussion should resolve the discrepancy between reasonably anticipated land use and the unrestricted land use objectives identified for several of the remedial alternatives. The section should also explain how the RAOs address the risk identified in the risk assessment. Since remedial goals are key to a discussion of RAOs, it may be appropriate to include relevant parts of § 2.12.1, Derivation of Remedial Goals. The RAO statements themselves could be made more clear and more precise. For example, with respect to soil and sediment, the first two bullets appear to be different ways of saying the same thing. Saying that the objective of the remedial action is to meet standards that haven't been defined yet isn't very informative. The statements leave open the question as to whether there are potentially significant exposures to non-MED/AEC that are not going to be addressed. The

third bullet apparently relates to the statutory preference for treatment as a principal element; however, it is not clear how that makes a good site-specific RAO especially in this case where no good treatment options have been identified.

34. 2.9 Description of Alternatives – The descriptions of all the alternatives are missing some key elements or lack clear presentation of the key elements. See Section 6.3.9 of the ROD Guidance for an example of how to present these descriptions. In particular, see the information under the heading *Common Elements and Distinguishing Features of Each Alternative*. Elements such as ARARs, quantities of waste to be treated or disposed, estimated implementation timeframes, and expected outcomes should be presented in a fashion that allows easy identification of the key distinguishing features. The cost figures need to show capital cost, annual O&M, and total present worth with discount rate and the number of years over which the cost estimate is projected.

35. 2.9 Description of Alternatives, pg. 2-48 – If all ongoing removal actions would terminated when the ROD is signed no matter which alternative is selected, the discussion of on-going removal actions should not be limited to just alternatives 2 through 6. What is meant by "These actions will be incorporated into the remedial action and completed as part of the remedial action"? Doesn't the USACE mean to say that the remedial action is expected to be consistent with the objectives of the removal actions. The intended meaning of the sentence beginning "Neither are there any ongoing removal actions ... " isn't entirely clear.

36. 2.9 Description of Alternatives, Excavation, pg. 2-49 – In that the various alternatives don't address excavation exactly the same, e.g., Alternatives 2 and 3 are labeled *partial* excavation, Alternative 4 is labeled *no further* excavation, and Alternatives 5 and 6 are labeled excavation *and something*, it doesn't appear that excavation is appropriately discussed as a common component. We recommend it be discussed under each of the individual alternatives so it will be clearer as to how excavation contributes to that alternatives ability to meet the RAOs in the context of each alternative. Perhaps if the same excavation techniques would be used for each of the alternatives involving some excavation it would be appropriate to discuss those techniques as a common element, but the goals to be achieved by excavation clearly are different for the various alternatives and therefore the excavation goals are not appropriately discussed in common.

37. 2.9 Description of Alternatives, Institutional Controls, pg. 2-49 – Much like the discussion of excavation, the use of ICs would seem to need to be tailored to the individual alternatives under consideration, making ICs not very amendable to a common discussion.

38. 2.9 Description of Alternatives, Transportation and Waste Management, pg. 2-50, 1st full ¶– This discussion of PDI sampling seems out of place in a discussion of waste management issues.

39. 2.9 Description of Alternatives, Monitoring, pg. 2-50 – The objectives of the monitoring component change significantly depending on which alternative is being considered. Short-term monitoring would not be appropriate for the capping or on-site management alternatives. The discussion would be better tailored to each alternative. Also, "short-term monitoring" is not a recognized term-of-art and therefore needs to be better explained. The conditions under which short-term monitoring would be terminated for each application need to be identified.

40. Alternative 2, Partial Excavation and Capping, pg. 2-51 – It is not clear what is to be capped and what isn't. It's not clear where it is given that soils exceeding 25/70/250 pCi/g above background will be excavated and shipped off-site or how that relates to the use of supplemental standards (which haven't, as yet, been explained). Also, the justification that "excavation of the remaining low activity soils to ARAR-based unrestricted soil RGs would result in excessive remedial action costs relative to the long-term benefits" would seem to contradict the rationale that leads to the selected remedy (Alternative 5). Where does the standard "clear present or future hazard" fit in and how is it defined? As described, it doesn't appear that Alternative 2 would achieve unrestricted use cleanup levels, how ever they are defined, which seems to be the intention of Alternatives 5 and 6. This discrepancy makes it even more important to define the RAOs before doing the alternatives analysis so each alternative is compared to a common cleanup goal. What is meant by the sentence "No institutional controls would be required for accessible soil at the SLAP VPs or the Latty Avenue VPs." Is that because the soil would be cleaned up? If so, the inference is not clear. Under Alternative 2, contaminated sediment from Coldwater Creek would apparently not be dredged but rather managed by institutional control and ongoing management of sediment dredged or removed out by others. This distinguishing feature is of no value if the comparative analysis is not made to address head to head comparison of this option with the dredging option found in the other alternatives.

41. Alternative 3, Partial Excavation and Treatment, pg. 2-51 – What is an estimate of how much volume reduction can be achieved through soil washing techniques? In our comments on the FS/PP, EPA questioned whether the proposed treatment processes are effective at achieving the indicated goals. If the USACE believes that treatment to reduce waste volume can be effectively done at a cost that is comparable to other alternatives, the rationale for choosing not to meet the statutory preference for using treatment as a principal element will need to be made more clear in the comparative analysis. It appears the concentration standard for what remains behind is the same for this alternative as it is for Alternative 2. Why then is a soil cover sufficiently protective in Alternative 3 but a multi-layer cap is necessary for Alternative 2, and what is the value of this distinction if no head-to-head comparison is made? As in Alternative 2, what does it mean to say no institutional controls would be required for accessible soil? What RAO (risk) is the phytoremediation intended to address and why isn't this a concern for all alternatives.

42. Alternative 5, Excavation with Institutional Controls, pg. 2-52 & 2-53 – The decision to remediate an area or not should be based on the need to address risk. The method used should be based on an evaluation against the nine criteria. Whether or not some other entity decides to make it available for cleanup is not relevant to the decision. The discussion refers to new decision documents that will identify future response actions as appropriate, which is not consistent with this being a final decision as described elsewhere. If the inaccessible soils are to be handled as a contingency action defined in this ROD, then what would be addressed by the future decision documents? The USACE should be aware that the remedial phase will not be complete until either the contingency action is carried out or until a decision is made that the contingency is not necessary. The description of the alternative should define what CERCLA requires to make the site protective. Whether or not the USACE or some other federal agency is authorized by congress to perform the work is not pertinent. The MOU with DOE and the division of responsibility between the two agencies is really not relevant to a description of the necessary CERCLA response. Information on this matter should be presented somewhere in the introductory sections of the Decision Summary. What is meant by "Additional soil may be identified as inaccessible during implementation of the response action and will be deferred for separate action as documented in the post remedial action report."? The discussion on long-term monitoring versus short-term monitoring and which of these is needed, why, and for how long is just not clear.

43. Alternative 6, Excavation at all Properties, pg. 2-53 – As commented previously on the FS/PP, the distinction between alternatives 5 and 6 is not clear. The difference appears to be the timing of the implementation, although an estimate of the anticipated differences in timing is not provided. There is apparently no difference in what will be cleaned up or what cleanup levels will be achieved. This probably does not make them two distinct alternatives for purposes of CERCLA remedy selection purposes.

44. 2.10.2 Comparison of the Alternatives, pg. 2-56 – Much of the description in this summary of the comparative analysis of alternatives is too general to illustrate the relative performance of the alternatives being considered. Some elements that distinguish one alternative from another don't appear to be mentioned. It would help to conclude the section by presenting the alternatives and/or the distinguishing features of the alternatives in decreasing order from most to least advantageous. As written, it is not entirely clear why the USACE believes Alternative 5 falls out as the best choice. See Section 6.3.10 of the ROD Guidance.

45. 2.10.2.1 Overall Protection of Human Health and the Environment, pg. 2-56 – This discussion is supposed to address whether each alternative provides adequate protection of human health and the environment and describe how risks posed through each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls or ICs. While this discussion states some overall conclusions, it doesn't provide the analysis sufficient to support those conclusions. No mention is made of the risks posed through specific exposure

pathways or how those risks are or aren't addressed by each of the alternatives. Much of the information presented may more properly be considered in other factors, such as short-term risks due to accidents, which are more closely associated with short-term effectiveness.

46. 2.10.2.2 Compliance with ARARs. Pg. 2-56 – A discussion on compliance with ARARs can not be evaluated when the ARARs that must be complied with are not identified. What ARARs does Alternative 4 not comply with and how did the alternative not get screened out if does not meet the threshold criteria? Also, statements to the effect that requirements will be met, *to the extent they are applicable*, don't seem appropriate for a ROD document which is supposed to make the determination on what requirements are applicable or relevant and appropriate.

47. 2.10.2.3 Long-Term Effectiveness and Permanence, pg. 2-56 – One of the key factors in evaluating long-term effectiveness is identifying what the residual risk is that will be left after completion of each of the alternatives, which this discussion doesn't do very clearly. The statement on 5-year review seems out of place.

48. Table 2-16, pg. 2-58 – As a general comment, it appears this table is intended to be a summary of the comparative analysis rather than as a summary of the detailed analysis.

a. Under Overall Protection, Human Health, the analysis would be much more informative if it listed the exposure routes contributing to the risk/hazard the response action is intended to alleviate and explained what effect each alternative would have on each risk/hazard. For Environment, Alternative 1 is listed as not being protective when the narrative in § 2.10.2.1 seems to say there is no risk to the environment in the first place.

b. Under ARARs, a blanket statement of compliant or non-compliant isn't helpful in evaluating the alternatives. Some more complete discussion of the various ARARs for each alternative should be included. Explain the requirements under 40 CFR 192 that wouldn't be met and explain how an alternative that doesn't meet ARARs can survive the preliminary screening.

c. Under Long-Term Effectiveness, the magnitude of the remaining risk needs to be evaluated in terms of the actual risks posed which lead to the need for a response action. Under reliability of controls, there is no mention of the need to maintain the cap for Alternative 2.

d. Reduction of Contaminant (Overall) should be "reduction of toxicity, mobility, or volume through treatment," with some more detailed discussion of factors such as treatment process used, amount destroyed or treated, reduction of toxicity, mobility or volume, type and quantity of residuals remaining after treatment. What is the meaning of "conditional soil treatment"? What treatment of buildings is contemplated. Is this element included in the description of alternatives?

e. Under Short-term Effectiveness, there's no discussion of how long each of the

alternatives would take to achieve the remedial goals, which makes it difficult to compare the various alternatives. Also, it's not clear what the subcategory for geology and soil is intended to address.

f. Under Implementability, all the alternatives except 1 and 6 rely at least in part on ICs that would need to remain in place essentially in perpetuity, but there is no discussion of the specific types of ICs that might be used, how easily they could be implemented, what they would cost to implement and maintain over time, etc. Also, there are other more precise factors that should be considered in evaluating the engineered controls, such as ability to construct and operate, ease of doing more action if needed, ability to monitor effectiveness, ability to obtain necessary approvals, availability of equipment and materials, etc.

g. What about state and community acceptance?

49. 2.10.2.4 Reduction in Volume, Toxicity, or Mobility Through Treatment, pg. 2-61 – What reduction in volume, toxicity or mobility through treatment would be achieved by Alternative 3 and what would be the volume and characteristics of the residual material? How would the decision be made to use some treatment technology for one of the other alternatives in the future and how is it consistent with this being the final decision? What is meant by decontamination of buildings is retained *if* building contamination is discovered? Does the USACE not have sufficient information to decide whether or not this is necessary? The purpose of this ROD is to select the appropriate remedial actions. Language to the effect that response actions may be added in the future or a response action is retained in case something is found is generally not consistent with remedy selection, especially if this is intended to be a final decision.

50. 2.10.2.5 Short-Term Effectiveness, pg. 2-61 – How long would it take to complete, i.e., achieve remediation goals, for each alternative?

51. 2.10.2.6 Implementability, pg. 2-61 – A more complete discussion of the ICs to be used, how easily they can be implemented, how reliable they are, etc., needs to be included in the ROD for those alternatives relying at least in part on ICs to achieve protectiveness. What about the ability to obtain necessary approvals, such as the cap under Alternative 2?

52. 2.10.2.7 Cost, pg. 2-62 – As commented previously, more complete cost information needs to be provided. Capital cost, annual O&M cost, and present worth including the discount rate and the number of years over which the costs were projected should be presented and any other information sufficient to make it clear how the alternatives are comparable.

53. 2.10.2.8 State and Community Acceptance, pg. 2-62 – What information did the public and the state provide relevant to their acceptance of the alternatives that aren't mentioned here, i.e., alternative 1 through 4? The final ROD will need to explain in more direct terms whether the State concurs or does not concur on the remedy.

54. 2.11 Principal Threat Wastes, pg. 2-63 – Explain why the site is not considered to have principal threat wastes in the terms provided under Section 6.3.11 and Highlight 6-26 of the ROD Guidance.

55. 2.12 Selected Remedy, pg. 2-63 – EPA's ROD guidance recommends organizing the discussion of the selected remedy much differently than was done in the draft ROD. According to the ROD guidance, the discussion should be organized as follows: (1) a concise summary of the rationale for the selected remedy, (2) a description of the selected remedy, (3) summary of the estimated remedy costs, and (4) expected outcomes of the selected remedy. The very limited discussion of the rationale for selecting the remedy is found at the end of this section and basically summarizes the conclusions discussed in greater detail in the next section on Statutory Determinations. The draft ROD has a fairly lengthy description of the selected remedy, but it sometimes repeats similar information and is sometimes seemingly contradictory, as in the handling of inaccessible soils. The performance goals for ICs need to be made more clear. The means of implementing the controls should be more explicit. Sufficient information needs to be provided as to what ICs will be used and where they will be used, to move on to the design phase expeditiously, even allowing for pre-design investigations. Much of the actual decision-making for ICs apparently is planned to happen after the ROD, which is not consistent with EPA's approach. Too much supporting information is provided on the derivation of RGs. Not enough information is provided on costs. See Section 6.3.12 of the ROD guidance for an explanation of the expectations for cost information. The expected outcomes of the remedy are not made clear. Thus, the discussion of the selected remedy needs to be rewritten to provide greater clarity and more complete information about the selected remedy.

56. 2.12 Selected Remedy, pg. 2-63, 1st Sentence – How does this option to use treatment fit with the expectations of the CERCLA remedy selection process? Where is this option defined and when would it be triggered? This section should define the performance objectives and the methods that will be used to achieve those objectives in a way that makes the commitments clear. Vague reference to an option that may be used does not seem appropriate.

57. 2.12 Selected Remedy, pg. 2-63, 2nd paragraph – The definition of inaccessible soils does not seem appropriate in that whether or not a structure is considered "permanent" seems to be dependent on whether or not the property owner finds the disruption acceptable. The text goes on to say that all inaccessible soils will be remediated under this ROD, but apparently only if the property owner makes it available and if Congress Authorizes someone to perform the work. This is not proper CERCLA decision-making. The need to remedy soils should be based on risk assessment, and the decision on whether to remove the soils or manage them in place should be based on analysis against the remedy evaluation criteria (NCP §300.430(f)(5)(i)). The process gives preference to permanent, engineered solutions, although institutional controls may be used in conjunction with engineered solutions or in cases where full remediation is not

appropriate.

58. 2.12.1 Derivation of Remediation Goals – The selected remedy section is not a good place to present the derivation of remedial goals. This section should be devoted to a concise description of the selected remedy. As discussed above, a discussion of the goals of the remedial action is relevant to the evaluation of various alternatives and should be presented earlier in the document. The selected remedy section should present the RGs themselves, briefly explain the basis, and clearly explain in words what the effect of achieving the numerical limits discussed in this section actually means in terms of how the various properties could be safely used after the cleanup. There is an occasional statement about unlimited use and unrestricted access; however, we find no definition of what that means. If the USACE believes achieving the numerical cleanup values discussed here will allow for unrestricted use, then we need to have a clear and concise description of what is meant by unrestricted use. It also should be made clear how all the areas presenting unacceptable risk under "unlimited use and unrestricted access" have been identified given that baseline risks were calculated based on the assumption the property would be used for industrial or commercial purposes.

59. 2.12.1.2 Structures DCGLs, pg. 2-66 – We found no clear statements about what risks to human health are being addressed, what buildings present this risks, and what use is supported after the decontamination/remediation work is accomplished.

60. 2.12.2 Primary Components of the Selected Remedy, beginning pg. 2-67 – This seems to repeat information that began the selected remedy section. The discussion on inaccessible soils is almost incomprehensible. What is meant by future remediation will be addressed as appropriate in accordance with the long-term stewardship plan to be developed as part of this remedy and under the provisions of the MOU with DOE? Remediation objectives should be established in the ROD. Pg. 2-68: Briefly discuss the basis for the sediment standards below mean water gradient. A brief statement that the SOR approach will be used is probably sufficient. Explain the statement that soil sources of TCE will be evaluated during preparation of remedial design. This appears to be the lone reference to TCE in the description. Pg. 2-69: The discussion mentions that chemical sampling will be conducted to verify that cleanup of the radiological COCs will also cleanup non-rad COCs, without ever explaining the expectation that these contaminants are co-located and without explaining that the radiological contaminants are expected to drive the remediation. Briefly explain the rationale for deriving surface and subsurface RGs and how this is consistent with unlimited use.

61. 2.12.2.3 Building Decontamination, pg. 2-71 – What buildings are being addressed? What is meant by the statement beginning "Results presented in Table 2-18.....may be adjusted...."?

62. 2.12.2.4 Institutional Controls, pg. 2-71 – The ROD should provide clearer statements of the performance goals. EPA normally expects to see more explicit description of the properties

and activities needing to be restricted and more explicit description of the conveyances that would be used in each case.

63. Table 2-19 Location and Estimated Volume of Inaccessible Soils, pg. 2-72 – Are the indicated volumes in cubic yards? The properties are not well indicated on Figure 2-9.

64. 2.12.2.5 Long-Term Stewardship Plan, pg. 2-73 – The discussion doesn't do a very clear job of outlining the elements of a long-term site management plan. Many of the terms and conditions for Institutional Controls are not clearly understandable and, in any event, the IC section would seem the logical place to talk about the elements of the selected ICs. With respect to the first bullet, ICs are administrative controls and do not "contain" residual contamination.

65. 2.12.2.6 Monitoring, pg. 2-73 – The monitoring objectives for each situation need to be more clearly explained. The discussion should be more clear in supporting the conclusion that the RGs for soil are also protective of groundwater.

66. 2.12.2.6 Monitoring, pg. 2-74 – The description talks about doing radon monitoring and mitigation that is necessary and appropriate. The ROD is the document in which the USACE should be drawing conclusions about what is necessary and appropriate.

67. 2.12.2.8 Treatment, pg. 2-75 – This discussion on treatment that may or may not be done is not consistent with the CERCLA decision process. This ROD is the document in which the USACE should draw conclusions about what remedial actions will be undertaken.

68. 2.12.4, Additional Components of the Selected Remedy, pg. 2-76 – Has the USACE identified any wetland areas that will be impacted? Again, the ROD is the document in which the USACE should draw conclusions about what remedial actions will be undertaken. Some of the information on this page is appropriate for a FS report or an implementation plan, but is not necessary for a ROD. The paragraph on water treatment seems to be a repeat of the 2nd bullet on the previous page. The information on the final remedy for groundwater should be combined with the other information on the remedy for groundwater and brought to the forefront where the principal elements of the remedy are presented. The groundwater response action and the rationale for it is not clear. Explanation of why the USACE believes the selected alternative provides the best balance of tradeoffs is information that should be used to introduce the selected remedy. The information on statutory determinations is not consistent with standard language (See Section 6.3.13 of the ROD Guidance) and is repetitive of the information in Section 2.13 that follows.

69. 2.13, Protection of Human Health and the Environment, pg 2-77 – The discussion doesn't address either how the selected remedy will eliminate, reduce, or control existing or potential

risk through each exposure pathway or whether implementation of the selected remedy will pose unacceptable short-term risks or cross-media impacts.

70. Compliance with ARARs, pg. 2-78 – There is no discussion as to whether leaving contamination in inaccessible soils complies with ARARs.

71. Cost Effectiveness, pg. 2-81 – This discusses cost but doesn't really address cost effectiveness, which involves a comparison of cost to the overall effectiveness of the remedy in terms of long-term effectiveness and permanence, reduction in toxicity, mobility and volume, and short-term effectiveness.

72. Utilization of Permanent Solutions, pg. 2-81, 1st ¶– This section should describe the rationale for the selected remedy in terms of it best balancing the trade-offs with respect to the 7 balancing criteria. The explanation should be illustrative of how the selected remedy uses permanent solutions and treatment technologies to the maximum extent practicable for this site. It is not simply a justification for why more treatment wasn't included in the remedy. Treatment is also be used to reduce volume or mobility, so limiting the discussion just to the availability of treatment to reduce toxicity isn't adequate to justify not including use of more treatment technologies in the selected remedy.

73. This Section should contain a separate sub-heading called "Preference for Treatment as a Principal Element." This section should address whether or not the statutory preference is met and why or why not.

74. 2.14, Significant Changes, pg. 2-83 – This section will need to be revised to be consistent with whatever the final approach is for dealing with inaccessible soils.

75. 2.15 References, pg 2-84 – The reference material for a ROD is the Administrative Record. Presumably, these references are a subset of the Administrative Record and we would not recommend a separate list of references.

76. Responsiveness Summary; general comments–

1. The presentation of the responses to comments in a landscaped table format, with smaller font and lots of blank space on most pages, make the summary more difficult to read than if they had been presented in narrative form, with the comment followed by the response.
2. The term "remediation goals" or "RGs" is used frequently when discussing cleanup levels, without saying more precisely what the specific RGs are that the USACE is referring to. For example, in comment 3, regarding concerns about cleanup plans for Clearwater Creek, the USACE talks about RGs for soils above and below the mean water gradient as being two different things, each of which will be protective. This

discussion would be much more informative if a more substantive description was provided of what the two RGs were or what type(s) of use/exposure standard(s) each is based on.

77. Responsiveness Summary, pg. 3-4, general 1– We disagree that the USACE followed either the intent or the letter of the consultation provision of the FFA.

78. Responsiveness Summary, pg. 3-5, general 2b– We don't believe all the confusion as to the distinction between alternatives 5 and 6 has been eliminated. What is the USACE's basis for concluding that it won't have to cover the cost of removing and replacing roads, bridges, etc. that must be removed to get access to contaminated soils? If the USACE is making the assumption it won't have to remove and replace such structures, that seems to be an implementability issue that should be addressed in greater detail in the body of the ROD.

79. Responsiveness Summary, pg. 3-25, proposed plan 42– While the criteria is discussed in § 2.12.1.2, it's still not clear exactly what the standard is or how it will be applied to buildings and other structures.

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