NOV 0 2 1999

Yellow Copy

1921 General

Mr. James Bearzi, Chief
Hazardous and Radioactive
Materials Bureau
New Mexico Environment Department
2044A Galisteo Street
Santa Fe, NM 87505

Re: Comments on the New Mexico Environment Department's (NMED) "Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Risk Assessment"

Dear Mr. Bearzi:

The Environmental Protection Agency (EPA) has completed a review of NMED's "Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Risk Assessment" and offers the enclosed comments for your review. The document was reviewed by Rich Mayer from a project manager perspective and by Jeff Yurk and Cheryl Overstreet from a risk assessor perspective. For your convenience, each comment is identified by the commentors name.

Should you have any questions, please feel free to contact Rich Mayer at (214) 665-7442, Cheryl Overstreet at (214) 665-6643 or Jeff Yurk at (214) 665-8309.

Sincerely,

David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

6PD-N:RMAYER:RM:10/27/99:l:\epacoeco

RM
10/27/99

13312

Comments on NMED's Ecological Risk Assessment Guidance

General Comments

1. Generally, a scoping phase of an ecological screening assessment requires very little site data, but uses very conservative assumptions. The screening phase of the ecological risk assessment requires more data, but the trade-off is in using less conservative assumptions. The Ecological Risk Assessment uses site specific data and more realistic assumptions. The NMED ecological risk guidance does not always follow this basis concept. In some cases, the burden of proof and the requirements for site data are extensive for both the scoping phase and the phase 2 screening assessment. More specific details on these situations is found below under "Specific Comments."

   It doesn't seem probable that any site will be determined to not require an ecological screening risk assessment without the expenditure of significant resources based upon the procedures described.

   The conclusion at the end of the screen essentially is to remediate or go forward with a site-specific ecological risk assessment assuming that the screen showed risk above the 0.3 ESQ. What if by setting home ranges at appropriate sizes, the risk fell below 0.3. Would a detailed site-specific risk assessment be necessary? This guidance does not appear to allow re-doing the screen with less conservative assumptions and avoiding the cost of a full-blown risk assessment.

   Some actual examples illustrating the aspects of the guidance that remain unclear would be very helpful. **C. Overstreet.**

2. The majority of the specific comments presented below address suggested areas in which the guidance could be expanded to provide more information in the "how to" category. In general, this guidance could be greatly enhanced with the addition of a detailed case study implementing all phases of the guidance. **J. Yurk.**

3. There needs to be a glossary included with this guidance. **R. Mayer.**

4. The guidance did not address how you perform a risk assessment in which there are tens or hundreds of SWMUs located within the range of a particular species of interest. Is this addressed in the screening phases or is it addresed in the site specific risk assessment or a combination thereof? Please clarify in the guidance. **R. Mayer**

Specific Comments

1. Page 5: Is this guidance applicable to Superfund sites? If not state that it is not. If it is applicable, you should probably get some reviewers from the Superfund program involved in the

review process. **J. Yurk.**

2. Pages 5-6: It would probably be good to add a flow chart of the entire process up front. **J. Yurk.**

3. Page 6 (top bullets): Are the three bullets the only the only three possibilities? What happens if you get a site where the risk management decision is that it is not economically feasible to clean up to a risk-based level? Do trustees step in and negotiate maybe like enhancing habitat in a different area as mitigation? It is unclear where trustees fit into the decision process. **J. Yurk.**

4. **Page 8:** Suggest appending copy of Appendix A checklist from US EPA 1997a. **J. Yurk and R. Mayer.**

5. **Page 7; Section 1.0:** Please state whether the size of the contaminated area has any impact on the scoping. **J. Yurk.**

6. **Page 7; Section 1.1 second sentence:** Edit sentence to say "This includes, but is not limited to documentation of the following:". **J. Yurk.**

7. **Page 8; Bulleted items:** More detail is required associated with bulleted recommendations for data compilation. For example: what temperature data should be collected, when you say wind speed are you talking about average or maximum, and how will any of these parameters be used in the risk assessment? Also, when referencing NMGF, USFWS, NMFD, and USBLM, I would suggest providing addresses, points of contact and phone numbers. **J. Yurk.**

8. **Page 8; Section 1.2; second sentence:** Edit sentence to end "and verify the current and potential future land use." **J. Yurk.**

9. Page 9 & 10; Section 1.3: The guidance mentions that there are certain contaminants that might not be a threat to human health but might be a threat to biological communities. It would be helpful if there was a list of these contaminants listed in the guidance. **R. Mayer and J. Yurk.**

10. **Page 11; Footnote:** I would suggest changing this write-up a bit to make it a little more palatable to the regulated community. Present the examples you have provided as possible extremes to be considered and state something along the lines that generally the ecologically relevant depth at a site is within the upper five feet. When you start evaluating really deep depths one has to think about where root zones spread out to and how much dilution goes on when water is absorbed over a wide area, both vertically and horizontally. **J. Yurk.**

11. Page 11.: The demonstration that contamination is inaccessible to wildlife is not clearly defined. It appears that one would have to have samples down to a depth of 200 feet in some circumstances to make this demonstration. It is preferable that the data intensive activities not be required for scoping. It would be better to spend the time and resources on remediation rather

than a demonstration of inaccessibility. Other States have limited the root zone demonstration to 5 feet. If junipers and alfalfa are present at the site, it would be better to state that an ecological screen will be necessary. **C. Overstreet.**

12. Page 12; Table 1: It is unclear how this example table was derived. What is growth medium? How did you determine where dashed lines should be, which pathways are important and which are unimportant? **J. Yurk.**

13. Page 13; first para: Should the word "significant" be added in front of complete exposure pathway? **J. Yurk.**

14. Page 14: Provide and example of a site survey. **J. Yurk.**

15. Page 14: The site survey requires delineation of types and amounts of both vegetation and wildlife at the site in enough depth to characterize the site and receptors. Some examples of what is meant by this would be helpful. It is not clear how the amount of vegetation and wildlife is incorporated into the screening assessment. The screening assessment is usually based upon the measurement receptor which is a representative of a feeding guild. Wouldn't it be sufficient to characterize the site generically, rather than specifically? **C. Overstreet.**

16. Page 15: Suggest adding more detail to clarify the statement "The sampling should take into account all media through which COPEC's may reach ecological receptors." For example, are you only considering significant exposure pathways? Would you have air samples collected at all sites? **J. Yurk.**

17. Page 15; 3rd para: Suggest defining what the shallowest depth a soil sample can be practically can practically be obtained from. For example, are you asking that soil concentrations in the top 1 or 2 cm of soil be used in calculating dose from incidental ingestion of soil and average 20 cm concentrations be used to compare to plant or terrestrial invertebrate soil benchmarks? **J. Yurk.**

18. Page 15; 3rd para: Suggest establishing a web page, if one does not already exist, and putting all position papers on the web and citing the web location here. Otherwise you may consider appending the position papers to this document. **J. Yurk.**

19. Page 15; bottom para: Provide an example of the general approach for evaluating sampling needs, developing a sampling plan, and conducting field sampling. **J. Yurk.**

20. Page 17; last sentence: The word, "by" should be "be." **C. Overstreet.**

21. Page 18: The box concerning frequency of detection is hard to interpret. The word, "exceed" adds some confusion. **C. Overstreet.**

22. Page 18; Figure 1: There does not appear to be a path in the flow chart of what to do if fate

and transport information is lacking. For example, what happens if a COPEC does not have a Kow or Kd? **J. Yurk.**

23. Page 20: It would be helpful to add the definition for what is meant by an SQL here. I would suggest using the definition from EPA's Data Usability Guide. **J. Yurk.**

24. Page 21; 1st para: More detail should be provided as to how "All qualifiers and codes must be addressed ..." **J. Yurk.**

25. Page 22; 2nd from bottom: It would be helpful to provide more detail on how historical site information should be examined and what should be looked for. An example would be beneficial here. **J. Yurk.**

26. Page 23; top para: It is unclear how ground water COPEC's will be interpreted in an ecological risk assessment. What would be the receptors? You may want to change this to a runoff to surface water example. **J. Yurk.**

27. Page 24; 2nd para: Reference concentrations should either be defined here or a citation provided as to where they are defined. **J. Yurk.**

28. Page 28; bottom: Provide an example of the results of the COPEC selection process in tabular form. **J. Yurk.**

29. Page 28; Section 1.3: The guidance mentions that certain chemicals have transformation products that are more toxic than the parent compound. The guidance should provide a list of the chemicals that meet this criteria. **R. Mayer.**

30. Page 34; 2nd para: Recommend changing language from "must always be modified" to "should be modified where necessary." **J. Yurk.**

31. Page 34; 2nd para: Refining the species composition of a food web is somewhat important, but what is more important is establishing the presence or absence of various communities and class-specific guilds. In the example provided, what is important is whether there are herbivorous mammals present, not whether the pika is present. The only time an individual species is of relevance is when it is threatened or endangered or is being selected as a measurement receptor to represent a class-specific guild or community. **J. Yurk.**

32. Page 34; last para: Add "class-specific" qualifier to the front end of each use of the word guild. **J. Yurk.**

33. Page 35; Section 2.3.4: Should the section heading read "Identify Significant Complete Exposure Pathways?" **J. Yurk.**

34. Page 38; Section 2.5.2: It is unclear how you would select a measurement receptor with the highest ingestion rate per kilogram body weight. You may need to make a risk management call here to specify age, sex, life stage, etc. An example would be select the minimum body weight of adult females provided in the exposure factors handbook. **J. Yurk.**

35. Page 39; last word 2nd para: Should the word "mitigation" be "management"? **J. Yurk.**

36. Page 40; top of page: Please provide an example of an exposure pathway model. **J. Yurk.**

37. Page 41: It is recommended that equations be solved for both "equal" and "exclusive" diets to determine the most protective scenario. How is this information to be used? Are the actual diet compositions used for the derivation of the ESQ? **C. Overstreet.**

38. Page 42: For clarity you might want to add what is meant by conservative body weights and food ingestion rates. **C. Overstreet.**

39. Page 49; bottom equation: Do you want people calculating concentrations in carnivorous mammals or birds? You do not appear to have anything eating these mammals and birds in the dose equations. **J. Yurk.**

40. Page 58; Section 3.2: The TRV's in Appendix G will need to be changed for any State-specific standards. For example, Appendix G freshwater TRV's may be based on Ambient Water Quality Criteria, doesn't the State have values which supercede these? **J. Yurk.**

41. Page 61: The use of the TRVs found in Appendix G implies that New Mexico does not intend to use allometric equations to extrapolate toxicity testing on one species to another somewhat dissimilar species. EPA prefers this approach of not using allometric equations to extrapolate because we have found that the level of uncertainty in the calculation of risk to larger animals does not improve the risk management decision and the toxicity information is generally available only for the smaller organisms. However, the New Mexico guidance would be improved by explaining their rationale for not extrapolating. It is also unnecessary to develop a lot of site-specific information for large top carnivores and other large higher trophic level species and this should be noted also. **C. Overstreet.**

42. Page 62; 1st para: An example of the summary Table being requested should be provided. **J. Yurk.**

43. Page 64; footnote: May want to note that the ESQ of 0.3 is an NMED policy. **J. Yurk.**

44. Page 64: The use of 0.3 ESQ seems ultra-conservative given the fact that the TRVs and the assumptions for the screening risk assessment are also conservative. Why not provide the option of an ESQ of 1 and the introduction of the HI concept of 1 except that you should call it something like "sum ESQ." **C. Overstreet.**

45. Page 70; last paragraph: Does New Mexico plan on issuing guidance for a site specific risk assessment? **R. Mayer.**

46. Appendices. The appendices are from EPA's combustion eco-risk guidance and have been updated. Updated Appendices should be available from EPA by November 1. **J. Yurk.**