

Subject: (No subject)

Date: Mon, 03 Mar 2003 4:38:01 GMT

From: kirby_tim@cybermesa.com

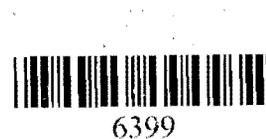
To: vickie_maranville@nmenv.state.nm.us

CC: kirby_tim@cybermesa.com

Here's your MDA P risk memo! You can paste it onto HWB memo letterhead if you want, I don't have that file any more....

Note that I included bolded language under each section saying that the site met risk-based criteria equivalent to clean so you can use this as part of your clean closure demonstration. Have a fun Monday and watch out for shrews

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To: Vickie Maranville
From: Kirby Olson
Date: Feb. 28, 2003
RE: MDA P Closure Certification Report Risk Review

I've reviewed Section 3 Risk Assessments, Appendix A, Attachment 1 to Appendix A, and Attachment 2 to Appendix A of Volume 1 of this report.

Human Health Risk Assessment

The 95% UCL of the mean concentrations of contaminants from the confirmatory sampling are below the NMED residential human health soil screening levels. This is true even when the UCL for barium is determined by placing a standard residential lot size over the most contaminated areas of the site and averaging only the concentrations within that lot size. Therefore, the residual levels of contaminants do not present an excess risk to human health and **the site can be considered as meeting a risk-based criteria that is equivalent to clean for human health.**

Ecological Risk Assessment

The screening for ecological risk compared residual concentrations of contaminants at the site to ecological screening levels (ESLs) developed by Los Alamos National Lab using a methodology that parallels the method in NMED's ecological risk screening guidance document. This comparison to ESLs indicated a potential for ecological risk to some ecological receptors from some contaminants. A number of contaminants exceeded a hazard quotient (HQ) of 1 for only the plant receptor; by itself this receptor-ESL combination tends to be a poor predictor of overall ecological risk at sites and I did not further investigate contaminants which generated high HQs only for plants. DDT generated a HQ of 1.5-3.0 for the robin, but was detected in only one sample and would therefore be reduced to below 1 when the home range of the robin was considered compared to the size of the area of detection. However, Table 3.3-8 shows hazard quotients well above 1 for a number of receptors for both barium and cobalt:

Because the ESLs for cobalt are below the background concentration of cobalt at LANL, a high ecological HQ will result whenever cobalt is retained as a contaminant. In Attachment 2 of Appendix A LANL demonstrated using statistical analysis and box and whisker plots that the distribution of cobalt at the site is actually not statistically different from the background distribution of cobalt at LANL. Therefore, cobalt at the site represents no more risk to wildlife receptors than background cobalt does. Cobalt can be eliminated as a contaminant posing excess risk to ecological receptors.

Barium concentrations remaining at the site are clearly elevated above background and above the ESLs for the ecological receptors. Because barium concentrations here and at other sites across LANL are frequently elevated, LANL designed and carried out field studies to determine if elevated barium concentrations actually impact ecological receptors. Sections 3.3.3.1 through 3.3.3.7 of the MDA P Closure Certification Report summarize the design and results of these studies. The design of these studies was developed and agreed to in a series of High Performing Team meetings over year 2001 and 2002; the studies are well designed and follow appropriate scientific methods for this type of work. Some of the studies evaluated potential impacts of barium to rodent population abundance and structure and the potential impact of rodent body burdens on higher trophic level receptors such as owls. Additional studies looked at effects on aquatic insect population and diversity. The studies compared the bottom of Canon de Valle (which contains much higher levels of barium than the MDA P site) to reference sites in Pajarito Canyon. The results of these studies demonstrate that barium concentrations much higher than the LANL ESL do not result in actual impacts to terrestrial or aquatic ecological receptors, and therefore barium can be eliminated as a contaminant of concern at MDA P.

Barium and cobalt were the only two contaminants at MDA P for which the ESL comparisons indicated a substantial potential for ecological risk. Because they can be eliminated based on the above lines of evidence, **the site can be considered as meeting a risk-based criteria that is equivalent to clean for ecological receptors.**