Mike — Comments from our office on 11/20/89 Re: R. Flat

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Ref: 8HWM-SR

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MEMORANDUM

TO: Gene Taylor

FROM: Jim LaVelle

SUBJECT: Health Assessment for Richardson Flats Tailings

I have reviewed, as requested, the ATSDR Health Assessment for the proposed Richardson Flats Tailings NPL site. In general I thought that the document was a reasonable overview of the site and that the recommendations in the back of the assessment were appropriate. However, I have a number of comments which I listed below in the order encountered in the document. I should also caution that, since I have not seen the site, I may not be aware of all possible site-specific and environmental factors that might impact the assessment. You should also seek comments from other qualified reviewers who are more familiar with the site and surrounding areas.

SPECIFIC COMMENTS:

1. Future residential use of the site is alluded to in the text, but no real indication of use potential is given. Is there land-use planning in the Park City area which would provide an indication of possible use in the future? This, of course, has great implications for possible target populations at this site in later years. On a similar vein, is the town currently growing? I.e. can we predict a demand for additional development anytime soon?

2. For As, Cd, Cr and Pb, maximum downgradient groundwater concentrations exceed proposed and tentative MCL's by up to several orders of magnitude (Pb). However, there is no mention of standards in the text. It seems to me that a brief discussion of current and/or future standards would be in order. In addition, whether the groundwater samples were filtered should be reported. Dissolved metals are generally of greater concern that metals present in filterable particulates.

3. As with groundwater, Cu and Pb, at maximum downstream concentrations in Silver Creek, greatly exceeded ambient water quality criteria for aquatic organisms. While this is not of direct public health concern, the presence of high concentrations of Cu and Pb could have visual impact on

Silver Creek. If the Cu concentration listed were a 4-day average, it would exceed ambient criteria by 3X or more. Depending on the organisms in the stream, it may take as much as three years to recover from this insult. It would be worthwhile to note if significant impacts are visible in the stream in comparing sampling locations above and below the site. This would give a qualitative indication of the biological significance of the exposure, and would certainly have implications for human exposure via ingestion of fish.

4. What is the water quality of the alluvial aquifer? From the text it appears that most local wells are drilled into the deep aquifer. If this is because the shallow aquifer is of poor quality to start with, the future impact of contamination from tailings to human health may be very small.

5. On page 5, paragraph 2, mention is made of downgradient groundwater containing 10 times more contaminants than a control upgradient sample. I cannot find data to support this in the document. More explanation is needed. Along this line, it would be helpful to the reader to number or letter the data tables, then refer to them in the text.

6. At the bottom of page 5, it could be mentioned that, in any event, the soil covering is unlikely to have any effect on the migration of metals to groundwater.

7. On page 6, paragraph 2, the document suggests that metals from mine tailings may reach groundwater. Indeed, data suggest that this has already occurred. It would be worthwhile to note that this will continue to be an on-going process if no remediation is performed.

8. On page 8, last paragraph, the document suggests that effects of arsenic following inhalation are "much more mild" than those following ingestion. This type of qualifier is very difficult to interpret on its own. I request that either a reference be used here or, preferably, an example be given to illustrate what "much more mild" means.

9. Except for Pb, there is no indication in the document what standards were applied when determining that the air concentrations were not of public health concern. Especially for Cd and As, where no inhalation RfD is available, it seems premature to make such statements. I would prefer either listing the criteria used to make the judgement, or using more qualified language.

10. A proposed inhalation RfD for cadmium is 0.18 ug/cubic meter.

11. Lead is now classified as a B2 human carcinogen.

12. The high arsenic and lead levels at the site suggest that the recommendation by ATSDR to restrict access to the site be emphasized. Simple, and fairly liberal, calculations of risk to children visiting the site (30 visits/yr for 3 years for an 18 kg child, ingestion of 50 mg soil/per visit, arsenic concentration of 2000 ppm) still suggest a risk of nearly 1E-03 for cancer caused by As. Thus, restricted access, especially if children, dirt-bike riders, etc. are known to frequent the site, seems critical.

I hope the above comments are helpful in any revisions of the assessment. If you have any questions, please be sure to stop in or call.

cc: Schaller
Nichols

FCD:November 20, 1989: