Individual Review Form

Proposal number:_2001-F207-2____ Short Proposal Title:_Evaluation of In-Situ Hg removal from ground water.

1a) Are the objectives and hypotheses clearly stated?
The objectives are clearly stated, in that the investigators will try to evaluate the effectiveness of a PRB system on mercury removal in ground water. The hypotheses being tested are not well described.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?

The process for the treatment system is fairly well described. The relationship of that treatment system to overall reduction of mercury loads to the Delta is not described. The scale of the potential application could have been described conceptually, which would give evaluators a better idea of how large the treatment system would be if it proved effective.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?

Although generally well described, the approach appears to have a basic flaw in the design, in that the researchers will "spike" the influent with mercury (presumably mercuric salt as was done previously) to artificially increase the actual concentration of mercury found in the ground water. This seems to be problematic from two perspectives: 1) if the technology is evaluated for concentrations higher than that which would be found in sites to be treated, how will conclusions regarding efficacy be drawn?; 2) the form of mercury added to the influent may be more amenable to removal than the forms actually present in the ground water.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?

The project is essentially a research project that furthers some initial work performed at a smaller scale bench level.

1c2) Is the project likely to generate information that can be used to inform future decision making?

The value would be extremely limited at this point. The dispersed nature of the mercury contamination may make the type of treatment being proposed (which appears most applicable to contaminated hazardous waste sites) infeasible. The field investigations being performed under the CALFED Hg research effort may give some indication as to the type of remedial activities that will be necessary.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?

Since there appear to be basic flaws with the design of the project, it is unlikely that the monitoring plan would adequately address the outcome.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?
The data collection is generally well described.

3) Is the proposed work likely to be technically feasible?

The work described appears to be technically feasible, although the feasibility in terms of application in the field is likely to be limited.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?

The team has experience in similar types of projects.
Miscellaneous comments

Provide a brief explanation of your summary rating
The project seems to have some significant deficiencies. The connection between the proposed remediation approach (which is in its initial phases) and any type of benefit in terms of mercury reduction at a relevant scale is not described. Spiking the site ground water with mercury would appear to compromise any of the results derived from the project. The main objective would seem to be to determine the efficacy of the approach with unaltered ground water found at a typical mining site.

Overall Evaluation
Summary Rating

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair

xxx☐xx Poor