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DSCSOC

**Comments on October 2006 Draft**
**Screening of Alternatives for the Feasibility Study**
**LEHR/SCDS Environmental Restoration**
**Prepared by Brown and Caldwell for the University of California, Davis**
**Comments Submitted by G. Fred Lee, Technical Advisor to DSCSOC**

In October 2006 Brown and Caldwell, on behalf of the University of California, Davis (UCD), prepared a Draft *Screening of Alternatives for the Feasibility Study* for the UC Davis Operable Unit (OU) at the Laboratory for Energy-Related Health Research (LEHR)/South Campus Disposal Site (SCDS). Presented herein are my comments on this draft *Screening of Alternatives for the Feasibility Study* (FS).

Basically, the UCD *Screening of Alternatives for the FS* presents a summary of the current pollution situation that exists associated with various operable units and a review of alternatives that can be used to remediate those OUs at the UCD LEHR Superfund site for which UCD is responsible for remediation.

**Comments on Executive Summary**

Page ES-1, the last sentence of paragraph 2 of the Executive Summary states, *"This FS was prepared based on the premise that the UC Davis areas comprise a single Area of Contamination."* As I discussed in my previous comments on the approach for the remediation of the UCD/DOE LEHR Superfund site, I feel that it is inappropriate to consider that the UCD areas comprise a single area of contamination. The contamination at this site occurs in several distinct units, which will need to be remediated separately. If I understand the US EPA RPM's preliminary position on this matter, the US EPA feels that the various waste management units will need to be remediated separately – i.e., cannot be combined into a single unit.

Page ES-3, the last sentence of the first paragraph states, *"The SWRA did not identify COCs for Putah Creek based on this information and on the comparison of upgradient and downgradient surface water and sediment data."* As I have pointed out previously to DSCSOC and as DSCSOC has passed on to the RPMs and PRPs, the upstream-downstream water and sediment studies that have been conducted at the LEHR site have not been adequate to determine whether stormwater runoff from the LEHR site has adversely affected (and continues to adversely affect) Putah Creek water quality. Of particular concern are the high levels of mercury that have been found in stormwater runoff from the LEHR site. The LEHR site mercury is contributing to the

excessive bioaccumulation that is occurring in Putah Creek, within the Yolo Bypass, the Delta and San Francisco Bay. It is for this reason that the Central Valley Regional Water Quality Control Board (CVRWQCB) has determined that UCD needs to develop BMPs to control excessive mercury in stormwater runoff from the LEHR site.

Page ES-3, last paragraph mentions that Tables 4-4 and 4-5 of this FS list the remediation goals that have been developed to comply with existing ARARs. A review of these tables shows that UCD has failed to include specific requirements of the CVRWQCB Basin Plan for protection of groundwater quality. Recently, Lee and Jones-Lee (2006) have developed a report,

> Lee, G. F. and Jones-Lee, A., "Groundwater Quality Protection Issues," Report of G. Fred Lee & Associates, El Macero, CA, December (2006).
> http://www.members.aol.com/annejlee/GWProtectionIssues.pdf

which was brought to the attention of the RPMs and PRPs, which discusses several CVRWQCB Basin Plan requirements that will need to be addressed as part of remediation of the LEHR Superfund site groundwaters. Of particular concern is the failure of UCD to conduct toxicity testing and taste and odor evaluation on the groundwaters that have been polluted by LEHR site wastes. It is certainly possible that UCD's wastes deposited at the LEHR site contain constituents which would be toxic and/or cause tastes and odors associated with the elevated TOC that occurs in some groundwaters near waste disposal sites.

A number of years ago DSCSOC pointed out to the RPMs and PRPs that the CVRWQCB has these requirements for protection of groundwater quality and suggested that measurements should be made to determine if the groundwaters are toxic and/or have tastes and odors that would impair their uses. DSCSOC's recommendations with respect to these matters were ignored, with the result that the investigation of this site, with respect to complying with CVRWQCB Basin Plan requirements, continues to be deficient.

Page ES-4, first paragraph states that, *"Soil and solid waste within Landfill Unit No. 1, Landfill Unit No. 2 and the Collocated Areas, and Landfill Unit No. 3 qualify as municipal landfill sites as described in the* Presumptive Remedy for CERCLA Municipal Landfill Sites *(Appendix A)."* When the issue of Presumptive Remedy was first mentioned at an RPM meeting, I prepared for DSCSOC a discussion of these issues,

> Lee, G. F., "Issues in Assessing the Effectiveness of US EPA's Presumptive Remedy for UCD LEHR Superfund Site Landfills in Protecting Groundwaters from Pollution by Landfill Wastes," Report to Davis South Campus Superfund Oversight Committee by G. Fred Lee & Associates, El Macero, CA, September (2006).
> http://www.members.aol.com/annejlee/PresumptiveRemedy.pdf

pointing out that the USEPA's politically developed Presumptive Remedy remediation approach is not necessarily protective of public health and the environment from future releases from a capped landfill. This document, which contains references to the US EPA documents pertaining to the appropriate application of Presumptive Remedy, is available on the DSCSOC website, at

> http://members.aol.com/dscsoc6/2006/PresumptiveRemedy.pdf.

As discussed, the typical approach allowed for capping landfills is a stopgap approach for preventing future pollution by the landfilled wastes. This is part of the US EPA's well-known significant deficiencies in managing municipal solid waste in such a manner as to prevent groundwater pollution for as long as the capped wastes in the landfill will be a threat. Further, as discussed in DSCSOC's comments on this issue, the typical groundwater monitoring programs, such as those that exist at the LEHR site, are severely deficient in detecting additional groundwater pollution by the capped wastes before widespread pollution occurs. It is important to note that DSCSOC has been discussing these issues for about 10 years in connection with remediation of the landfills at the LEHR site. Thus far, these issues have not been addressed by UCD. Instead, UCD continues to develop propaganda statements that are obviously technically deficient in addressing issues of particular concern to the offsite public who are potentially impacted by the adequacy of remediation of the LEHR site.

**Comments on Section 1**

Page 1-2, paragraph 3 states,

> *"The Old Wastewater Treatment Plant was identified in AOC 99-16 and was included in the original UC Davis OU. As directed by USEPA, data collected for this area were included in the RI, HHRA Part A, but was not required to be included in the HHRA Part C or SWERA. As a result, it is not evaluated in this FS."*

As DSCSOC has repeatedly pointed out since 1995, the investigation that was conducted of the potential for the sludge drying beds at the Old Wastewater Treatment Plant to have caused pollution of the soils and groundwater was inadequate to properly define the magnitude of the pollution that may have occurred. While this may not be part of the Superfund site, it is an area that, under the CVRWQCB requirements, should be properly investigated and, to the extent that the pollution that originally occurred is still present, remediated.

Page 1-3, last paragraph, presents a discussion of UCD's attempts to justify treating the various waste management units at the LEHR Superfund site as a single unit. As discussed above in the comments on the Executive Summary on this issue, such an approach is not appropriate without a comprehensive investigation of the characteristics of the wastes with respect to their potential to be hazardous wastes, which would require management of the hazardous waste components in a hazardous waste landfill.

Page 1-4, second and third paragraphs, under Presumptive Remedies for Municipal Landfills, the inappropriateness of the US EPA's approach for "containment" of municipal landfilled wastes at Superfund sites has been discussed above in addressing this issue in the Executive Summary. That approach, involving a typical cap on the landfill areas, is not protective of groundwaters from pollution by landfilled wastes located under the cap. Further, the characteristics of future groundwater pollution from the capped landfilled wastes make reliable monitoring of the migration of pollutants from the capped landfilled wastes difficult to achieve, in order to detect future releases from the capped landfilled wastes before significant additional pollution of groundwaters occurs. It is important to note that UCD's past waste disposal practices at these landfills has included the disposal of large amounts of hazardous chemicals in the landfills. The

massive chloroform plume that has been generated by UCD's dumping of waste chloroform into a landfill is an example of this situation.

Bottom of page 1-4 to the top of page 1-5 presents the RAOs for the contaminated groundwater. A review of the four bulleted items listed on the top of page 1-5 as remediation goals shows that achieving these goals will not comply with CVRWQCB requirements for cleanup of polluted groundwaters. UCD needs to start over with respect to defining remediation goals for the LEHR site, considering the explicit requirements set forth in the CVRWQCB Basin Plan for remediation of polluted groundwaters.

**Comments on Section 3**
Page 3-6, second paragraph states,

> *"Based on the results of testing as discussed above, the HHRA-Part C did not identify any COCs for inclusion in the FS analysis for Putah Creek. The SWERA concluded that there were no differences in risks to ecological receptors in Putah Creek upstream and downstream of the UC Davis OU."*

This statement is more of the propaganda that UCD has been foisting on those who review the impacts of the LEHR site stormwater runoff on water quality in Putah Creek. As DSCSOC has documented on several occasions based on the data produced from stormwater runoff monitoring and based on the significant deficiencies of trying to use upstream-downstream monitoring of the type that has been conducted, it is not possible to make reliable assessments of the impacts of the stormwater runoff-associated constituents on Putah Creek water quality. What is well-known, however, is that the mercury concentrations in the monitored stormwater runoff at times have exceeded 10 times the water quality objective for excessive mercury concentrations that can lead to bioaccumulation of mercury in edible fish. Further, as discussed in DSCSOC's review of the mercury situation, the actual threat to excessive bioaccumulation caused by LEHR site stormwater runoff is on the order of 100 times what is known to lead to excessive bioaccumulation of mercury in fish. This arises from the fact that the current 50 ng/L value that is used as the CTR criterion is well-known not to be protective. DSCSOC has provided the RPMs and PRPs with quotes from US EPA Region 9 staff on these issues.

It is this kind of distorted reporting as exemplified by the above-quoted paragraph by UCD and its consultants that causes the public to justifiably not trust UCD to provide reliable information on the impacts of the LEHR site.

Pages 3-6 and 3-7 present a summary of the groundwater pollution situation at LEHR. This summary, like past summaries developed by UCD, continues to ignore the fact that, associated with the measured total organic carbon, there can readily be a significant number of hazardous and otherwise deleterious chemicals in groundwaters which have been produced by LEHR site waste disposal practices. Any report that fails to mention this situation is more of the biased reporting of the potential problems that exist at LEHR.

**Comments on Section 4**
Section 4-1 presents a discussion of ARARs for the site. As discussed above in the comments on the Executive Summary, the ARARs that UCD has selected ignore several of the CVRWQCB Basin Plan requirements for protection of the beneficial uses of groundwaters, such as toxicity and tastes and odors.

Page 4-5, section 4.2, under Soil, the second sentence states, *"As described in Section 4.3 (RAOs), landfill wastes will be removed or capped to eliminate complete pathways to humans and ecological receptors."* It is highly misleading to state that the capping of the wastes will *"eliminate complete pathways."* At best, depending on the quality of the construction used in the cap, it will only slow down for a period of time the pollution of groundwaters by the landfilled wastes.

Page 4-5, section 4.2, under Groundwater, the third sentence states, *"Both state and federal laws establish 100 micrograms per liter (µg/L) as the drinking water standard for trihalomethanes, which includes chloroform."* It is my understanding that that value has been decreased.

**Comments on Section 5**
Page 5-1, second paragraph, first bulleted item states,

> *"Solid media, which include solid waste and vadose zone soil. The RAOs include preventing COCs in these media from contact with human and ecological receptors, storm water and groundwater. Therefore, the alternative that is ultimately selected must not only protect human health, but also prevent leachate production that may impact surface water and groundwater."*

UCD needs to explain how any proposed cap for the landfilled wastes will *"prevent leachate production,"* especially in light of the fact that the cap, at the time of construction, will not prevent water from entering the wastes through it and that, over time, the low-permeability characteristics of the cap, which can be achieved with high-quality construction, will deteriorate, leading to significant moisture penetration through the cap, which will generate leachate.

**Comments on Section 6**
Page 6-2, section Cover Construction, again provides unreliable information on the ability of any proposed landfill cover to *"… prevent the migration of surface water into the waste."* Those knowledgeable on the characteristics of landfill covers of this type know that this level of performance cannot be achieved.

Page 6-6, under HSU-4 Alternatives: As I mentioned at the last RPM meeting, there is need for a comprehensive review of just what is the current situation with respect to the pollution of HSU-4 by LEHR site wastes. A definitive report on this situation needs to be developed.

**DSCSOC Remediation Goals**
Several months ago, DSCSOC submitted its criteria for adequate remediation of the LEHR site,

DSCSOC, "DSCSOC's Community Acceptance Criteria -- LEHR Superfund Site, UC Davis Campus," Davis South Campus Superfund Oversight Committee, Davis, CA, June (2006). http://members.aol.com/dscsoc6/2006/CommunityCriteria2.pdf

Since community acceptance of remediation approaches is one of the nine Superfund site remediation goals, UCD should be required to present and discuss how the proposed remediation approach will achieve DSCSOC's criteria for LEHR site remediation.

**Comments on References**

REF-1 presents a list of the references that support this FS. No mention is made of the DSCSOC discussions of the significant technical deficiencies that exist in many of the reports that are referenced in this list of references. DSCSOC's reports on these issues are available on their website at http://www.members.aol.com/dscsoc/doc.htm.