

July 14, 2001

Review of Neighbor's Wells Data

Julie Roth

Julie,

Per your request, I have reviewed the Neighbor's Well Sampling data report covering the third and fourth quarters, 2000, that was made available to you April, 27, 2001. The data for your well as well as the others sampled by UCD, do not show any potentially significant concentration of VOCs. Several of the wells, however, continue to have elevated concentrations of nitrate and total chromium. From the information available, it appears that the nitrate and chromium are from natural sources, or from sources not associated with the LEHR site.

Following up on our discussions concerning the UCD monitoring of the "neighbor's wells" sampling first quarter 2000, as I indicated, a number of these wells this time – as has occurred in the past – have high chromium compared to the drinking water standard of 50 µg/L for chromium-VI. The wells of concern are listed in the table below:

Wells of Concern	Total Chromium (µg/L)
IHDW	55.3
AKIW	58.8
Duplicate AKIW	59
OHDW	52.9
NJIW	54.4
JHDW	55

We should be certain that no one is drinking that water because of the potential risk of chromium as a carcinogen. I understand that the neighbors who have wells in the program are receiving bottled water from UCD and, therefore, this may not be an issue. From the information we have, it appears that this problem may be due to natural chromium. It should also be noted that the drinking water standard is based on chromium-VI, and UCD is reporting total chromium. They should be reporting total chromium and chromium-VI.

You may have noted that in the recent press there have been a number of discussions about chromium and drinking water issues. This situation has arisen out of a politician from Southern California combining with a toxicologist from one of the Southern California universities to raise the issue of indicating that possibly chromium VI below the drinking water standard of 50 µg/L can cause cancer in people. Recently, I heard Dr. Book, a toxicologist with the Department of Health Services, discuss this issue at the CA/NV American Water Works Association meeting, where he indicated that it was DHS's position that the evidence that has been provided does not support changing the drinking water standard for chromium-VI. I have also reviewed this evidence and find that the approach that was used to suggest that the chromium-VI drinking water standard is not

protective is not valid. I know that the California Department of Health Services is conducting a major review of this issue. Additional information on the hazards of chromium in domestic water supplies should be forthcoming in the near future.

Reviewing the results of the well sampling for the third and fourth quarter, 2000, there are continuing problems with how the data are reported. First, when they list "nitrate," without indicating whether it is NO_3 or N, it is unclear as to the proper units. Please ask UCD to explicitly define the concentration units used in these reports.

Also, ask UCD to place a zero before a decimal point, so that there is no question about whether it is ".87 $\mu\text{g/L}$ total chromium" as the minimum reporting limit. It should be listed as "0.87."

Also, they should list the VOCs analyzed for and the detection limits used for that particular analysis. This information should be available in the data reports. Without it, the listing of VOCs as "non-detect," does not provide the information needed to properly interpret the data.

July 14, 2001

LEHR Site Constituents of Concern

Julie Roth

Dear Julie:

Previously I have raised the issue of the significant deficiencies in the approaches being used by UCD and DOE to adequately address the constituents of concern at the LEHR site. I have pointed out in previous writings that, in a situation like the LEHR site, where the University of California, Davis, has deposited substantial amounts of campus hazardous chemical wastes at the LEHR site landfills, there can readily be a wide variety of unregulated, unmeasured constituents in the wastes which are threats to public health and the environment.

A couple of months ago, I submitted a statement on this issue in connection with the presentation that I made at the US EPA national TAG meeting that was held in Nashville, TN, where I listed some of the chemicals that are being found in groundwaters which are not now regulated. Last fall, I attended a CA/NV AWWA annual meeting, where Dr. Bruce Macler of US EPA Region 9 presented a discussion, "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR)." Dr. Macler pointed out that the US EPA has significantly expanded its efforts to begin to address unregulated contaminants that are potential threats to drinking water. The UCMR revisions require that water utilities begin to monitor for a substantially expanded list of potentially hazardous chemicals and pathogens. The US EPA has developed three lists of contaminants. Water utilities must monitor four consecutive quarters during 2001-2003 for List 1 contaminants:

List 1 Contaminants

- acetochlor
- DCPA mono-acid degradate
- DCPA di-acid degradate
- 2,4-dinitrotoluene
- 2,6-dinitrotoluene
- 4,4-DDE
- EPTC
- molinate
- MTBE
- nitrobenzene
- per chlorate
- terbacil

Water utilities are not being required to monitor for List 2 and 3 contaminants. They are put on notice, however, that these are chemicals of concern and could be required to monitor them in the future.

List 2 contaminants:

- alachlor ESA
- diazinon
- 2,4-dichlorophenol
- 2,4-dinitrophenol
- 1,2-diphenylhydrazine
- disulfoton
- diuron
- fonofos
- linuron
- 2-methyl phenol
- prometon
- RDX
- terbufos
- 2,4,6-trichlorophenol
- polonium 210
- aeromonas

List 3 contaminants:

- lead 210
- cyanobacteria
- echoviruses
- coxsackieviruses
- *helicobacter pylori*
- microsporidia
- calciviruses
- adenoviruses

The message from this situation is that the US EPA – and, I know also, the California Department of Health Services – recognizes that the current regulated arena of chemical constituents in drinking waters such as the groundwaters at the LEHR site is a small part of the total arena of potentially hazardous chemicals that can be present in groundwaters polluted by hazardous waste sites that have received complex mixtures of a variety of waste chemicals.

It is my opinion that DSCSOC should request that the RPMs require that UCD and DOE provide the RPMs, DSCSOC and the public with their proposed plan for addressing the protection of public health and the environment from the unregulated chemicals that are present in the wastes, contaminated soils and the groundwaters at the site. As I have indicated in previous correspondence, I am concerned that there has been no attempt to characterize the TOC that is present in samples of groundwaters and other media at the LEHR site. As I have discussed, there are techniques that can be used for this purpose (such as biological impact assessment) that are not being used at the LEHR site. They should be.

If there are questions about these comments, please contact me.

Fred

Comments on the University of California, Davis LEHR Superfund Site Newsletter, Summer 2000

by

G. Fred Lee, PhD, DEE

Putah Creek Mercury

The University of California, Davis issued a Summer 2000 LEHR Newsletter in the fall 2000. Part of this newsletter is devoted to information on mercury in Putah Creek fish and other organisms. The write-up on Mercury Biological Distribution Study is accurate as far as it goes. However, it left out extremely important information derived from the US EPA ATSDR studies. As discussed in previous DSCSOC correspondence on this matter, the studies conducted by Slotton were done under high-flow conditions, where, as found and expected, the fish in Putah Creek contained about the same concentrations of mercury given a certain size fish and type. However, that is not the pattern that was found during the first ATSDR study, which was conducted under low-flow conditions. Under these conditions, the fish near where the campus wastewater treatment plant discharges to Putah Creek (which is adjacent to the LEHR site) were found to have significantly elevated concentrations of mercury compared to just upstream or downstream of this area. This is the pattern that would be expected if the UCD campus wastewater treatment plant and/or LEHR were contributing to the mercury in the creek.

While not reported by UCD in its last Newsletter, ATSDR also found that there was radioactive mercury found in the fish taken in the vicinity of the wastewater treatment plant discharge. The radioactive mercury was almost certainly derived from UCD's use of mercury in research projects on campus. Since UCD staff have had the ATSDR reports available to them for a number of years and have received detailed discussions of these data by DSCSOC, UCD's failure to report this information in its Newsletter represents more of the biased reporting that occurs in its Newsletters.

Constituents of Concern

In the 1999 Annual Water Monitoring Report, in Newsletter on page 2, second column, first full paragraph mentions the "other constituents of concern." It should be noted that the constituents of concern listed are those that are being investigated. There are many other constituents of concern that need to be investigated with respect to the public health and environmental impact of the waste disposal practices at the LEHR site.