

January 27, 2003

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Dear Dr. Smith:

I am responding to an e-mail dated March 7, 2002 from Mr. Bruce Calder to Mr. Mike Layton on questions concerning groundwater issues at the Title II sites in Texas. Following are our responses to the four questions attached to the e-mail.

1. Secondary groundwater-protection standards were apparently never established by either State agency which has regulated the Conoco/Conquista site over the years. The site, nevertheless, has at least four straight years of quarterly groundwater monitoring data. If in the near future, the Texas Department of Health (TDH) accepts, and in turn establishes, secondary groundwater-protection standards proposed by Conoco, would it be an acceptable approach for Conoco to use its previous years of data as a set to compare the standards to? The comparison would be thus a backward-looking comparison, as opposed to the more conventional approach of setting standards, then comparing future data against those standards.

**Response:** It would be acceptable for Conoco to demonstrate compliance by using its previously collected data for comparison with the secondary groundwater protection standards established by TDH. In addition, we offered the following comment regarding the establishment of the secondary standards in a teleconference between you and U.S. Nuclear Regulatory Commission (NRC) staff on December 10, 2002: The secondary groundwater protection standards in 10 CFR 40 Appendix A are either background concentrations (uncontaminated by milling from the site), Maximum Concentration Levels (MCLs), or Alternate Concentration Limits (ACLs). If a strong technical case can be made that previously collected data represent background (i.e. hydraulically up gradient or cross gradient from the site), then those data would be appropriate for establishing the secondary standards.

2. If a licensee proposes and then gets State acceptance of an ACL for a particular constituent, what happens if that ACL is itself later exceeded? Is the licensee allowed to propose another higher ACL, or is it a one-time deal on ACL setting?

**Response:** If an ACL is exceeded, the licensee has 18 months to initiate a corrective action program (Criterion 5D in 10 CFR 40 Appendix A). The regulations do not preclude revising an ACL, particularly if new information could change the hazard or exposure assessment. The licensee could revise its ACL, if the licensee can demonstrate that the new ACL is protective of human health and the environment.

3. Concerning exceedance in general, what does the NRC suggest concerning such issues

as re-sampling, statistics, etc., to decide unequivocally that there is, in fact, an actual exceedance? For example, how many occurrences of an exceedance will be considered sufficient to define it as a contamination certainty? Also, is there a form of statistical analysis or statistical significance that NRC suggests be used to determine with some degree of certainty the existence of an exceedance? Are mill tailings licensee's expected to follow the statistical analysis regimen of 40 CFR §264.97?

**Response:** We have dealt with this issue at several sites, primarily exceedance of upper control limits (UCLs) at in situ leach facilities (ISLs). We have been using the following license condition to address confirmation of exceedance:

*"If two UCLs are exceeded in a well or if a single UCL is exceeded by 20 percent, the licensee shall take a confirming water sample within 48 hours after the results of the first analyses are received and analyze the sample for the indicator parameters. If the second sample does not indicate an exceedance, a third sample shall be taken and analyzed in a similar manner within 48 hours after the second set of samples was acquired. If neither the second nor the third sample indicates an exceedance, the first sample shall be considered in error.*

*If either the second or third sample confirms that a UCL(s) has been exceeded, the well in question shall be placed on excursion status. Upon confirmation of an excursion the licensee shall notify NRC in accordance with License Condition XXX, implement corrective actions, and increase the sampling frequency for the indicator parameters at the excursion well to once every seven days. Corrective actions for confirmed excursions may be, but are not limited to, those described in Section XXXX of the approved license application. An excursion is considered concluded when the concentrations of the indicator parameters are below the concentrations levels defining an excursion for three consecutive weekly samples."*

As far as the statistical analysis is concerned, NRC has not adopted the requirements in 40 CFR §264.97. We have allowed the licensee a degree of flexibility for selecting and defending the choice of a statistical method. In the past, we have approved analysis of Variance (ANOVA), tolerance limits (used largely at ISLs) or even non-parametric analysis if the data cannot be transformed into a normal distribution. Essentially, the data quality and quantity determine the appropriateness of the statistical tool. We recently revised our Standard Review Plan (SRP) for Mill Tailings Sites (NUREG-1620) and referenced the American Society for Testing and Materials (ASTM) Standard D 6312, "Standard Guide for Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs," as acceptable guidance. We believe this ASTM standard included Environment Protection Agency (EPA) representatives on the standards development panel. The NUREG-1620 SRP can be found at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff>

4. Please help us understand what is meant in the language found in Federal Register Vol. 48, No. 196, "Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites; Final Rule," Friday October 7, 1983, p. 45942 (left column, second to last paragraph, last sentence) where it states, "If environmental contamination is a realistic possibility (or fact) beyond 500 meters [which I've converted

*to be approx. 1,640.5 feet]* (or the site boundary), remedial actions must be taken, or alternative concentration standards (with EPA concurrence) are required.”

(a) Is this particular sentence in this issue of the Federal Register codified into the regulations somewhere? If so, please advise as to a direct citation. *[I was unable to locate it in either 40 CFR Part 192 or Part 264].*

(b) Is the “site boundary” referred to here the “restricted area” boundary around the impoundment, or the property-ownership boundary?

(c) If the contamination conditions fail this test either way, then if the licensee wishes to propose an ACL for one or more particular constituents, is this saying that EPA *must also* review the ACL application for its own satisfaction, and ultimate concurrence? That is, must EPA also have to be satisfied before the ACL can go forward?

**Response:**

- (a) The language found in the October 1983 Federal Register was not adopted by NRC and therefore is not codified in the NRC regulations.
- (b) Since the language is not codified in the NRC regulations, we offer no comment on the definition of the term “site boundary” used in the October 1983 Federal Register.
- (c) ACLs granted under the authority of the Atomic Energy Act of 1954, as amended, do not require concurrence from the EPA.

If you have any questions or if we may be of further assistance, please contact me at (301) 415-3340 or Kevin Hsueh at (301) 415-2598.

Sincerely,

*/RA/*

Paul H. Lohaus, Director  
Office of State and Tribal Programs

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\*See previous concurrence.

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