



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

April 15, 2004

Mr. Steve McCracken
Assistant Manager for Environmental Management
DOE-Oak Ridge Operations
P.O. Box 2001, EM-90
Oak Ridge, TN 37831

Dear Mr. McCracken:

Comments on Soil Vapor Results for Winter Sampling for Buildings K-1007, K-1225, K-1330, K-1400, and K-1580 at East Tennessee Technology Park, Oak Ridge, Tennessee

The Oak Ridge Site Specific Advisory Board (ORSSAB) has reviewed the subject results and offers the enclosed comments.

We appreciate your consideration of our comments and look forward to receiving your written response.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Mosby".

David N. Mosby, Chair

DNM/plo

Enclosure

cc w/enc: Dave Adler, DOE-ORO
Pat Halsey, DOE-ORO
Connie Jones, EPA Region 4
John Owsley, TDEC
Sandra Waisley, EM-33, DOE-HQ



Oak Ridge Site Specific Advisory Board

Comments on Soil Vapor Results for Winter Sampling for Buildings K-1007, K-1225, K-1330, K-1400, and K-1580 at East Tennessee Technology Park, Oak Ridge, Tennessee

BACKGROUND

A property transfer process at the East Tennessee Technology Park (ETTP) is being accomplished by the U.S. Department of Energy (DOE) with assistance from the Community Reuse Organization of East Tennessee (CROET) and Bechtel Jacobs Company LLC. Twenty-six facilities that have the potential to be transferred were identified as part of the process. To date, CROET has submitted proposals requesting transfer of eight facilities, including five office buildings (K-1007, K-1225, K-1330, K-1400, and K-1580); two manufacturing facilities (K-1035 and K-1036); and one land parcel (ED-5 East). DOE concurred with the proposals, and transfer of the office buildings is scheduled to be complete by June 2004. Transfer of the other three facilities will be complete by October 2004. Concurrence by the State of Tennessee and EPA is required for the covenant deferral process to be used to transfer the properties.

To demonstrate that the transfers are protective of human health and the environment, DOE performed radiological surveys, and because volatile organic compounds are present in groundwater at the site, EPA recommended investigation of vapor intrusion to determine if volatile organic compound vapors are migrating to within the buildings. The results of the vapor intrusion sampling are available at the DOE Information Center Internet site (http://www.oakridge.doe.gov/info_cntr). Comments will be accepted through March 20, 2004.

DISCUSSION

A presentation to the Oak Ridge Site Specific Advisory Board was made by Susan Cange of the DOE Reindustrialization Program at the Board's March 10, 2004, meeting. Based on discussion at the meeting, the Board's Environmental Management Committee prepared the following comments.

COMMENTS

Soil vapor results for the winter sampling for Buildings K-1007, K-1225, K-1330, K-1400, and K-1580 at ETTP have been made available to the public. In general, the presentation of the results and the associated sampling and analysis plan could be improved to facilitate greater public education and contribution to the overall knowledge base of this issue. ORSSAB feels that other technically sound approaches allowed by the guidance in evaluating the vapor intrusion pathway may have better achieved these objectives. We are not convinced that the protocol is adequate to reassure the public of the safety of the buildings. Please clarify the objectives of conducting this vapor intrusion analysis.

A number of specific issues were identified in review of the sampling and analysis plans and presentation of the soil vapor results:

- Although the sampling indicates that the inlet tubing to the soil vapor sampling system shall be as short as possible, no additional information is provided on steps that were taken to avoid biasing results.
- No duplicate samples are specified for the soil vapor samples that would provide indication of repeatability of the sampling results at a given location.
- Analytical data quality objectives are incomplete except for specification of reporting and detection limits well within the capability of the method. Default application of Method TO-15 requirements must otherwise be assumed. According to Compendium Method TO-15, there are three performance criteria to be met for a system to qualify under that method. These criteria are: the method detection limit of ≤ 0.5 ppbv, replicate precision within 25%, and audit accuracy within 30% for concentrations normally expected in contaminated ambient air (0.5 to 25 ppbv). Additionally, whether the analytical laboratory used the SIM or SCAN mode of analytical operation is not specified. The choice is a consideration in determining other tentatively identified compounds along with those on the target list but can also affect reported results.
- The presentation of the results simply announces the results and does not provide sufficient information for determination of whether the results are valid based upon the criteria discussed above.
- The presentation of the results does not discuss any issues that arose during field implementation of the sampling plan or any deviations from the sampling plan or during analysis and how such issues were addressed.
- The sampling plan indicated that a groundwater sample would also be collected in the first phase of sampling to define current conditions and monitor for any future change in conditions. Presentation of the groundwater sampling results accompanying the soil vapor samples is not obvious along with any criteria that would be used to establish future changes in conditions.
- The rationale and justification for selection and application of the attenuation coefficients to calculate indoor air concentrations are not obvious. The same attenuation coefficient appears to be used for each compound at each building. The potential presence of undocumented preferential pathways for vapor intrusion would seem to be a logical consideration that would require modification of this assumption to be considered.

Generally, the presentation of these results appears to be an exercise that involved considerable resources and application of evolving technical protocol to situations where the issue being investigated was not expected to be a problem. Other technically sound approaches could have been implemented and presented that would better characterize the presence of the issue on the Oak Ridge Reservation and facilitate greater public education and contribution to the overall knowledge base at the national level. Presentation of these and future vapor intrusion results based on addressing the issues raised above is recommended.