



7/91

MEMORANDUM

SUBJECT: Update on OSWER Soil Lead Cleanup Guidance

FROM: Don R. Clay  
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Office of Solid Waste and Emergency Response

TO: Addressees

PURPOSE

This memorandum addresses the progress of the Office of Solid Waste and Emergency Response (OSWER) on updating the directive #9355.4-02 entitled "Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites" (SEPT 89).

BACKGROUND

Currently, as set forth by OSWER directive #9355.4-02, EPA recommends an interim soil cleanup level of 500 - 1000 ppm total lead for CERCLA sites characterized as residential. This directive is being revised to:

1. Account for the contribution of various media to total lead exposure, and the variability of each medium's contribution with location and age of the exposed population, and
2. Provide a strong scientific basis for choosing a soil lead cleanup level specific for a given CERCLA/RCRA site.

OSWER believes that the best available approach is to use the EPA Uptake Biokinetic (UBK) Model as a risk assessment tool to predict blood lead levels and aid the risk management decision on soil lead cleanup levels at CERCLA/RCRA sites which are characterized as residential.

OBJECTIVE

The EPA UBK Model, which was mentioned in OSWER directive #9355.4-02 as a tool for site-specific assessment of total lead exposure, will predict blood lead levels in the most sensitive

populations (i.e., children 0-6 years old) exposed to lead in air, dust, drinking water, soil, and paint. The USK Model has:

1. undergone Agency review in its use for the National Ambient Air Quality Standard (NAAQS)
2. been used to support rulemaking for the Clean Air Act and the Safe Drinking Water Act
3. been adapted and reviewed for Superfund application
4. been validated at several Superfund sites
5. had its default parameters documented by the Office of Research and Development (ORD)<sup>1</sup>

The UBK Model can be run with either site-specific data or its default parameters. Concern exists, however, over the use of the default parameters versus site-specific data for input to the model. OSWER has decided to address these concerns, as well as the appropriate method to use for collecting site specific data, before issuing a directive recommending the UBK model as the preferred method for setting lead cleanup levels at CERCLA/RCRA sites. To this end, the Science Advisory Board (SAB) has agreed to review the UBK model and its applicability for developing site-specific soil lead cleanup levels at CERCLA/RCRA sites. Also, a technical workgroup consisting of Regional, ORD, and OSWER scientists in consultation with outside experts is presently developing a "Site-specific Guidance Manual" which will provide guidance to site managers for determining why and when to collect site-specific data for the model. The guidance will also include appropriate protocols and sampling strategies for collecting the site-specific data (e.g., soil, indoor/outdoor dust, paint, etc.) Once this guidance is complete, and the SAB issues have been resolved, EPA expects to release this guidance in conjunction with a revised OSWER directive recommending the UBK model as a risk assessment tool to develop soil lead cleanup levels at CERCLA/RCRA sites.

To assist in the implementation of this revised directive, once it is issued, the technical workgroup mentioned above will:

1. review inputs and technical applications of the model, within 2-4 weeks of receipt, to aid site managers in the appropriate and consistent application of the model to individual site conditions.
2. provide clarification and assistance to the Regions in the use and interpretation of the Site-specific Guidance Manual, such as the type of data to use in the Model.
3. provide scientific support for those cases which the workgroup has reviewed and found the use of the model to be both appropriate and justified.

4. collect data pertaining to the use of the model and Regional site-specific information which will be used to refine and further validate the model.

Also, once the revised directive is issued, Headquarters has recommended that, whenever the UBK model is used to help determine cleanup levels for a site, the Regions consult the workgroup on the parameters utilized in the model and the reasons for their selection, before finalizing the risk assessment and specifying cleanup levels for that site.

We are aware that a number of Regions are already using the UBK Model to develop soil lead cleanup levels at their sites and that the current directive (#9355.4-02) allows for deviations from the 500 - 1000 ppm range due to site-specific conditions. In these situations, we recommend a model projection benchmark of either 95% of the sensitive population having blood lead levels below 10 ug/dl or a 95% probability of an individual having a blood lead level below 10 ug/dl. This recommendation is consistent with EPA's Agency-Wide Lead Strategy.<sup>2</sup> When the model is run using this benchmark, as well as each of the model's default parameters (i.e. no site-specific data is input), an acceptable soil level of approximately 500 ppm is predicted for lead. For those Regions which have used or are planning on using the model prior to release of the revised directive, and who have developed soil lead cleanup levels which fall outside the 500 - 1000 ppm range, Headquarters has requested that the Assistant Administrator of OSWER be consulted prior to implementation of those cleanup levels. The use of the UBK model in these situations is considered as a national precedent-setting issue and, as such, a formal consultation with Headquarters is recommended as set forth in OSWER directive #9012.10-1 entitled "Clarification of Delegation of Authority (April 1990). Headquarters should also be consulted on removal actions which use soil lead cleanup levels derived by the UBK model and which fall outside the 500-1000 ppm range. For further information please contact Susan Griffin of the Toxics Integration Branch at FTS 475-9493.

#### **DISCLAIMER**

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## REFERENCES

1. USEPA, 1990. Technical Support Document on Lead. Draft. Cincinnati, OH. Office of Health and Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency. ECAO-CIN-757
2. USEPA, 1991. Strategy for Reducing Lead Exposure. Washington D.C., Office of Toxic Substances, U.S. Environmental Protection Agency. Available from the Toxic Substances Control Act Hotline (202) 554-1404.

### Addressees:

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