

Superfund Technical Review Workgroup (TRW) – Lead (Pb) 2024 Accomplishments

The Technical Review Workgroup Lead Committee (TRW – Pb) provides site consultation relevant to Pb in soil site assessment activities and human health risk assessment. The TRW-Pb has made advances in the development, maintenance, support, and promotion of consistent application and improvement of the best science in the field of human health risk assessment for lead (Pb).

Technical Support

One of the fundamental roles and responsibilities of the TRW – Pb Committee is to provide technical support regarding the application of lead risk assessment tools at Superfund sites. This support is provided to EPA regional risk assessors as well as other federal, tribal, state, non-governmental and international groups. Furthermore, the Lead TRW promotes application of the best available scientific information concerning risk assessment methods in soil and soil-like (e.g., floodplains) media at affected sites.

The TRW – Pb Committee members are a group of experienced and highly trained professionals in lead risk assessment and have provided expert assistance in sometimes complex risk assessment scenarios.

In January 2024, EPA announced updates to guidance for lead in residential soil at CERCLA sites and RCRA corrective action facilities. These updates recommended that EPA regions use the most current version of the IEUBK model, with 5 µg/dL as the 95th percentile target blood lead level and site-specific environmental data (e.g., lead concentrations in various media and bioavailability) to develop preliminary remediation goals (PRGs) and cleanup levels for residential land use. If an additional source of lead (e.g., lead water service lines, lead-based paint, non-attainment areas where the lead concentrations exceed NAAQS) is identified, the 2024 Updated Soil Lead Guidance recommends 3.5 µg/dL as the 95th percentile target blood lead level. The TRW – Pb Committee provided technical support to regional risk assessors, remedial program managers, and others regarding the interpretation, Integrated Exposure Uptake Biokinetic (IEUBK) model application and implementation of this updated guidance.

In 2024, the TRW – Pb Committee consulted on Region 4's Southside Chattanooga site. The Region proposed a risk-based approach for exposures at various soil depths using a time-weighted average approach for children and adults. The proposed approach considered an exposure scenario where a child comes in direct contact with the 0-12" soil horizon and intermittently comes in direct contact with soil brought to the surface at depths >12".

In addition to supporting work at specific sites, the TRW – Pb responded to 50 hotline (pbhelp@epa.gov) requests from other federal, state, international, and non-governmental sources. Requests were received from the following groups:

- 41 requests were from state and federal agencies;
- 1 request was from outside the United States;
- 8 requests were from other sources (public, non-governmental organizations, engineering and consulting firms, and academia); and

- 16 requests pertained to the IEUBK model, 12 requests pertained to the draft All Ages Lead Model (AALM), and 4 requests pertained to the Adult Lead Methodology (ALM).

As shown above, over 30 percent of the hotline requests pertained to the IEUBK, including installation and use, exposure scenarios, soil/dust and air concentrations, incorporation of bioavailability, target blood lead levels, and intermittent exposure. Slightly less than 10 percent of the requests pertained to the ALM, and almost 25 percent pertained to the draft AALM. The remainder of the requests were questions regarding topics ranging from the updated *Superfund Lead-Contaminated Residential Sites Handbook* and *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* to lead-based paint, lead uptake from consumer goods, soil/dust ratios, and source attribution.

Communication, Training and Outreach

In January 2024, the TRW – Pb Committee gave a virtual and in-person training regarding lead risk assessment modeling (the IEUBK and ALM) to Region 9 EPA personnel. In February 2024, committee members gave an overview of the Lead TRW to new Remedial Program Managers at “NARPM Presents.”

In April 2024, the TRW – Pb Committee gave a virtual in-person training regarding lead risk assessment modeling (the IEUBK and ALM) to Region 4 and their state risk assessors.

Also in April 2024, the TRW – Pb Committee presented the updated OLEM Residential Lead Guidance to the Southeastern Lead Consortium, which is comprised of Region 4 staff and their states that implement the lead-based paint programs.

In June 2024, the TRW – Pb Committee presented at the Office of Land and Emergency Management’s (OLEM) Human Health Regional Risk Assessment Forum’s (OHHRRAF) training meeting, including a hands-on training of the lead risk assessment models.

The TRW – Pb Committee prepared materials for virtual planning sessions in January of 2025.

Technical Guidance Documents (Completed and Active Projects)

The TRW – Pb Committee completed revisions to the Office of Superfund Remediation and Technology Innovation’s 2003 *Superfund Residential Lead Sites-Handbook*, publishing the updated “Handbook” in March 2024. The Handbook was published in a modular format in order to update relevant chapters as the science and best practices evolve regarding residential lead sites.

<https://www.epa.gov/superfund/lead-superfund-sites-guidance#residentialsites>

The TRW – Pb Committee continues its ongoing support to provide site information and beta testing of the EPA Office of Research and Development’s draft AALM. The draft AALM tool is an outgrowth of the IEUBK. It can evaluate lead exposure from birth to 90 years of age and allows for the assessment of intermittent exposures as short as one day, a limitation of both the IEUBK and ALM.

The TRW – Pb Committee finalized *Assessing Intermittent or Variable Exposure at Lead Sites* in August 2024 (<https://www.epa.gov/superfund/lead-superfund-sites-guidance#leadsites>), which updates the

current technical guidance regarding the evaluation of non-continuous exposure to communities. The document, which is accompanied by a Time-Weighted Average Risk Calculation Tool, expanded on the following:

- Track-in of soil to residences from other locations;
- Exposures at more than one location such as daycare outside primary residence, recreation areas, etc.; and
- Non-continuous air exposure.

The TRW – Pb Committee drafted *Area-Wide Average Approach to Implementing Cleanup Goals at Lead Sites FAQ*. The document describes sampling and remediation strategies in support of risk assessment and risk management when applying the risk-based cleanup goal for an exposure area. The area-wide averaging (AWA) approach to remediation provides the option to risk managers to address lead contamination such that the average (for lead; an upper confidence limit on the average is typically used for other contaminants) concentration of contaminants in an exposure unit remaining after remediation is at or below the cleanup goal, whereas a not-to-exceed (NTE) approach typically remediates all decision units within an exposure unit with soil concentrations exceeding the cleanup goal. The document describes the data needs and pros and cons of several alternative approaches that risk managers may consider in addition to NTE cleanup. The final document is slated for release in 2025.

In response to questions from ATSDR staff, the TRW – Pb Committee drafted revisions to *TRW Recommendations Regarding Gardening and Reducing Exposure to Lead-Contaminated Soils* to be consistent with the *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* and to update the literature cited in the document. The final updated document is slated to be released in 2025.

The TRW – Pb Committee developed a standard operating procedure for updating the maternal blood lead at birth variable for the IEUBK and the maternal baseline blood lead concentration and geometric standard deviation variables of the ALM. These variables are based on the most recent two-year cycles of the National Health and Nutrition Examination Survey (NHANES). The updates account for the changes in baseline blood lead concentrations in women 17 – 45 years of age.

The TRW – Pb Committee is working on a series of FAQs for regional risk assessors, including:

- “Relative Contribution of Various Media to Lead Uptake,”
- “What is the GSDi used in the Lead Risk Assessment Models,”
- “Central Tendency Exposure (CTE) use in the IEUBK Model,”
- “Site-Specific Bioavailability Information Applies to Soil and Dust,”
- “Alternate Diet Intake or Alternate Source for Gardening Exposure Scenario,”
- “Update to the soil – to – dust mass transfer (MSD) in the IEUBK,”
- “Dust Wipe Loading to Concentration Calculator.”

The TRW – Pb Committee also developed a table for internal use by regional risk assessors summarizing the IEUBK input parameters, analysis and the source references.

Technical Review Workgroup Lead Committee Members:

Region 1

Mary Ballew
Courtney Carroll (co-chair)

Office of Research and Development (ORD)

James Brown
Kirk Scheckel

Region 2

Julie McPherson
Abbey States

Office of Superfund Remediation and Technology Innovation (OSRTI)

Michele Burgess (co-chair)
Matt Lambert

Region 3

Linda Watson

Environmental Response Team

Kelly O'Neal

Region 4

Ayana Cunningham
Kevin Koporec

Region 5

Keith Fusinski

Region 6

Ghassan Khoury

Region 7

Ann Jacobs

Region 8

Charles Partridge (co-chair)

Region 9

Harry Beller
Jocelyn Pierro

Region 10

Marc Stifelman