

**Technical Review Workgroup for Metals and Asbestos  
Lead Committee Annual Report:  
Accomplishments and Activities for Calendar Year 2017**

**Members**

**Region 1**

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**Office of Research and Development**

Kirk Scheckel  
Jim Brown

**Region 2**

Mark Maddaloni  
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**Region 4**

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**Region 5**

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**Agency for Toxic Substances and Disease Registry  
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**Region 6**

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**Region 7**

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**Region 8**

Charles Partridge

**Region 9**

Sophia Serda

**Region 10**

Marc Stifelman (co-chair)

## Technical Review Workgroup: Lead Committee Accomplishments of Calendar Year 2017

### Reports and Guidance Development on Lead Risk Assessment (completed and active projects)

1. ***Mass of Soil in House Dust ( $M_{SD}$ ) Proposal:*** The TRW Lead Committee continues to evaluate the mass transfer of soil to dust ( $M_{SD}$ ) variable in the Integrated Exposure Uptake Biokinetic (IEUBK) Model to assess dust lead exposure in the absence of site-specific data.
2. ***OLEM Interim Human Health Risk Assessment Strategy for Lead:*** the TRW Lead Committee supported OLEM in implementing the OLEM Directive 9200.2-167, December 22, 2016, *Updated Scientific Considerations for Lead in Soil Cleanups*. This work included several site consultations with Regions to provide technical support for remedial and removal actions.
3. ***Estimation of Soil and Dust Ingestion Rates for U.S. Children:*** the TRW Lead Committee reviewed the currently available literature and data on soil and dust ingestion by children and developed a recommendation memo for an update to the IEUBK model. The recommendation was letter peer reviewed and will be included in the update of the IEUBK model. The TRW Lead Committee has shared information with other Agency programs and members are working with U.S. EPA Office of Research and Development, Sustainable and Healthy Communities Research Plan, Office of Land and Emergency Response and Office of Water to support revisions to soil ingestion rates.
4. ***Short Term Exposure Recommendations for Lead Sites:*** the TRW Lead Committee provided recommendations for assessing short-term exposures that do not meet the minimum exposure frequency and duration for the IEUBK model or the Adult Lead Methodology (ALM). The TRW Lead Committee is working with OSRTI's Environmental Response Team to develop an IEUBK training module to address this recommendation.
5. ***Update to the Adult Lead Methodology (ALM) and IEUBK Maternal Blood Lead Variable:*** the TRW Lead Committee completed its analysis of the most recent Centers for Disease Control and Prevention (CDC) National Health and Nutrition Examination Survey (NHANES) data and has updated the baseline maternal blood lead and GSD variables in the ALM and IEUBK models. The OLEM Directive 9285.6-56, "Update to the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters" was issued on May 2017.
6. ***Recommendations for Using Blood Lead Data at Superfund Sites and RCRA Corrective Action Facilities:*** the TRW Lead Committee developed recommendations to clarify the role of blood lead (PbB) data in Superfund lead risk assessments. This document provides the technical basis for appropriate uses of PbB data from various opportunistic monitoring programs and from specifically designed surveys at Superfund sites or Resource Conservation and Recovery Act (RCRA) corrective action facilities.
7. ***Recommendations for Default Age Range in the Integrated Exposure Uptake Biokinetic (IEUBK) Model:*** the TRW Lead Committee developed a recommendation to modify the age range in the IEUBK model from 0 – 84 months to 12 – 72 months based

on the current science and U.S. Centers for Disease Control and Prevention's (CDC's) recommendation. The OLEM Directive 9200.2-1, "Recommendations for Default Age Range in the IEUBK Model Transmittal Memorandum and Document" was release on November 2017.

## Communication, Training, and Outreach

1. **Hotline:** Responded to 52 requests for assistance in 2017. Of these, 39 requests were from state and federal agencies, 0 came from outside the US, and the remaining 13 requests were from other sources (public, non-governmental organizations, and engineering and consulting firms). The majority of the requests pertained to the IEUBK model, exposure, screening levels/policy, or guidance-related questions.
2. **Presentations/Training:** TRW Lead Committee members published and presented at several conferences and training meetings in 2017. These are listed in the table below:

Meeting/Presentation/ Training	Location	Dates	TRW Member(s)	Title of Presentation
IEUBK Model Training	Region 1	September	Ballew	Introduction to the IEUBK
OHHRRAF Meeting	Region 3	August	Burgess Phillips Stifelman	TRW- Lead Update and Regional Implementation of the Lead Policy – Round Robin
OHHRRAF Meeting	Region 3	August	Burgess Phillips Stifelman	Updates and Revisions to Soil Ingestion Rates
Region 7 Annual OSC Training	Region 7	January	Phillips	Lead Update
Region 7 Remedial Project Managers Training	Region 7	March	Phillips	Lead Update
Publication	J. Environ. Quality	January	Scheckel	Lead and Arsenic Bioaccessibility and Speciation as a Function of Soil Particle Size.
Publication	Crit. Revs. Environ. Sci. Technol.	Vol 47	Scheckel	State of the Science Review - Potential for Beneficial Use of Waste By-Products for In-situ Remediation of Metal- Contaminated Soil and Sediment
Publication	Environ. Pollut.	Vol 220	Scheckel	Soil Solution Interactions May Limit Pb Remediation Using P Amendments in an Urban Soil.
Publication	Sci. Total Environ	Vol 575	Scheckel	Alterations of Lead Speciation by Sulfate from Addition of Flue Gas Desulfurization Gypsum (FGDG) in Two Contaminated Soils.
Publication	Environ. Sci. Technol.	Vol 50	Scheckel	Predictive Capabilities of in vitro Assays for Estimating Pb Relative Bioavailability in Phosphate Amended Soils.
Presentation	Region 7 Annual On-Scene Coordinator Workshop. Kansas City, MO.	January	Scheckel	Utilizing Pb Isotopes for Source Attribution at Impacted Sites.
Presentation	14th International Conference on the Biogeochemistry of Trace	July	Scheckel	Application of high-energy resolution X-ray fluorescence detection spectroscopy on environmental samples

	Elements, Zurich, Switzerland			
Presentation	14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland	July	Scheckel	Source attribution of lead using geospatial and stable isotope analysis.
Presentation	14th International Conference on the Biogeochemistry of Trace Elements, Zurich, Switzerland	July	Scheckel	Dynamics of Pb absorption following deposition of Pb-containing particles in the lungs.
Presentation	254th American Chemical Society National Meeting Washington, DC	August	Scheckel	Application of high energy resolution X-ray fluorescence detection spectroscopy on environmental samples
Presentation	Society for Risk Analysis, Washington, DC	December	Stifelman (SRC presented on behalf of the TRW)	Recommendations for Sieving Soil and Dust Samples at Superfund Sites for Assessment of Incidental Ingestion via Dermal Adherence

3. **Website:** This website has been migrated to one-EPA format. The TRW continues to support the incorporation of materials as appropriate.
4. **Charter:** Revised the TRW Charter to better develop, maintain, and promote consistent application of the best available science in the field of human health risk assessments and methods for assessing human health risk posed by lead at contaminated sites.
5. **Lead Committee Annual Meeting:** Planned for FY19.

### Coordination with Regions, EPA Program Offices, and Other Federal Agencies

**Region 2:** Discussed the Diamond Head Oil and Matteo sites.

**Region 5:** Discussed the water program for the Flint water assessment, the East Chicago Indiana public housing site, and the M&H Zinc site.

**Region 7:** Discussed the Southwest Jefferson County Superfund Site in Jefferson County, Missouri.

**Region 8:** Discussed mine waste (overburden) at the California Gulch Superfund Site, the Colorado Smelter Site, and the Eagle Mine Site.

**Office of Research and Development (ORD):** The TRW Lead Committee is engaged in several efforts that are coordinated with ORD. These efforts are described below:

- The TRW Lead Committee commented on an ORD and Region 7 research proposal evaluating IEUBK model performance at low soil lead concentrations.
- TRW Lead Committee is coordinating with SHC, ORD on a soil-dust ingestion research proposal. Furthermore, as the TRW Lead Committee provided comments and literature search for EPA’s NCEA efforts to update the recommended soil-dust ingestion rate in the Exposure Factors Handbook (EFH). The EFH Chapter 5 *Soil and Dust Ingestion Rate* was published in October 2017.
- The TRW Lead Committee is also coordinating with ORD to evaluate the performance of the All Ages Lead Model (AALM). This includes development of a beta test version and data sharing as part of that beta test.

***Office of Pollution Prevention and Toxics (OPPT):*** The TRW Lead Committee is also coordinating with OPPT to evaluate the performance of the AALM. This effort includes harmonizing the Advanced Continuous Simulation Language (ACSL) version of the AALM with the FORTRAN version of the AALM.

***Initial Data for National Academy of Science (NAS) Study:*** The TRW Lead Committee supported data collection for the National Academy of Science (NAS) study, identified and submitted nominations for committee members, and TRW Lead Committee members, participated in public committee meetings, and responded to inquiries from NAS staff. The National Academy of Sciences Report on “Investigative Strategies for Lead-Source Attribution at Superfund Sites Associated with Mining Activities” was published on October 2017.

***Office of Water:*** Members of the TRW Lead Committee attended the June public meeting concerning the single source notification level.

### **Coordination with Other Nongovernment Groups**

- None