



# **IDEM Office of Land Quality Lead and PFAS Update**

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*IDEM Office of Land Quality*

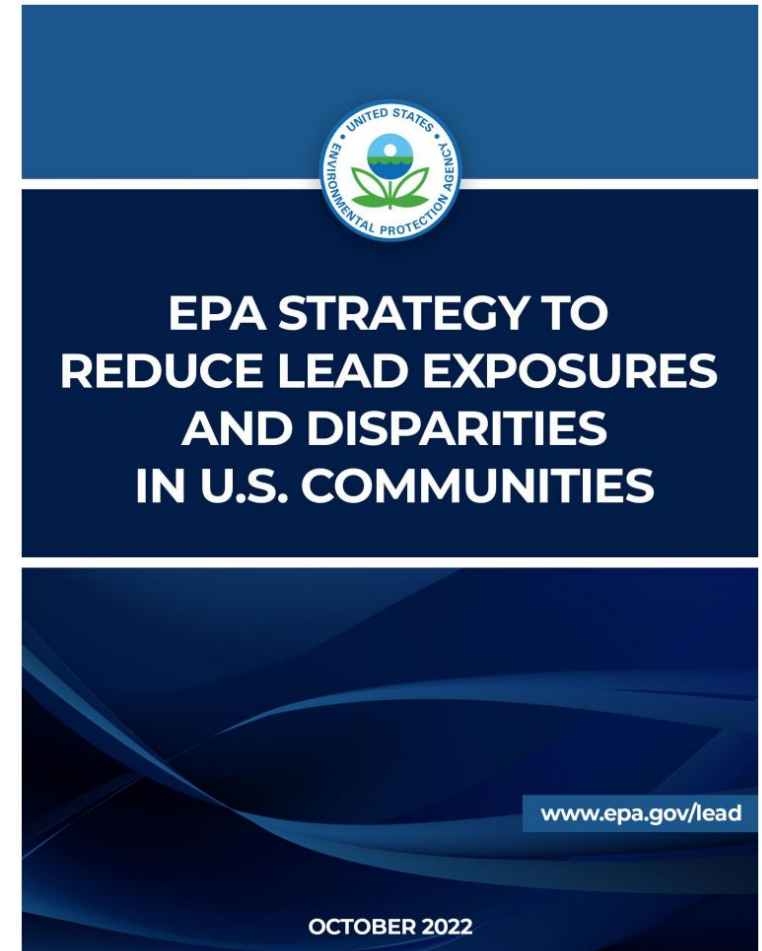
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IDEM Consultant's Day, April 16, 2024

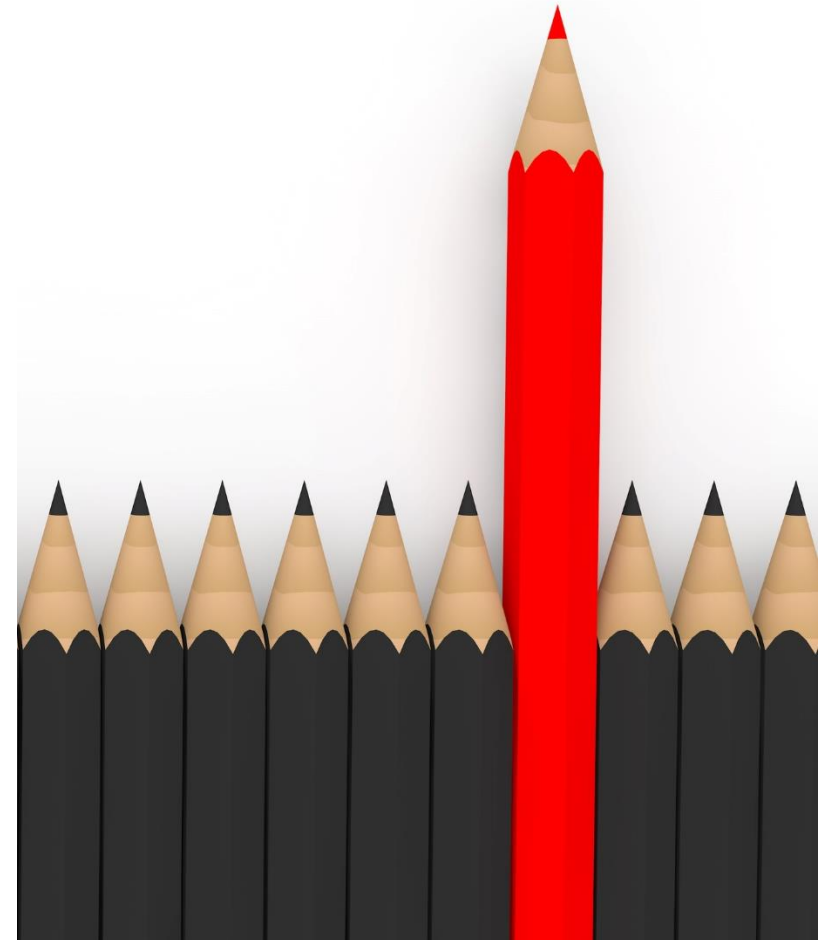
# EPA Lead Strategy

- October 2022 [EPA Strategy to Reduce Lead Exposures and Disparities in U.S. Communities](#).
  - Objective C– reduce lead in soils.
- Jan 2024 US EPA [Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities](#).
- Previous residential lead screening level 400mg/kg
- EPA indicates regions should use a residential soil lead screening level of 200mg/kg with 100 mg/kg to be used if additional sources of lead are identified.
- EPA has updated/ released multiple new guidance-  
Lead at Superfund Sites Guidance Page.
- [Lead at Superfund Sites: Guidance | US EPA](#)



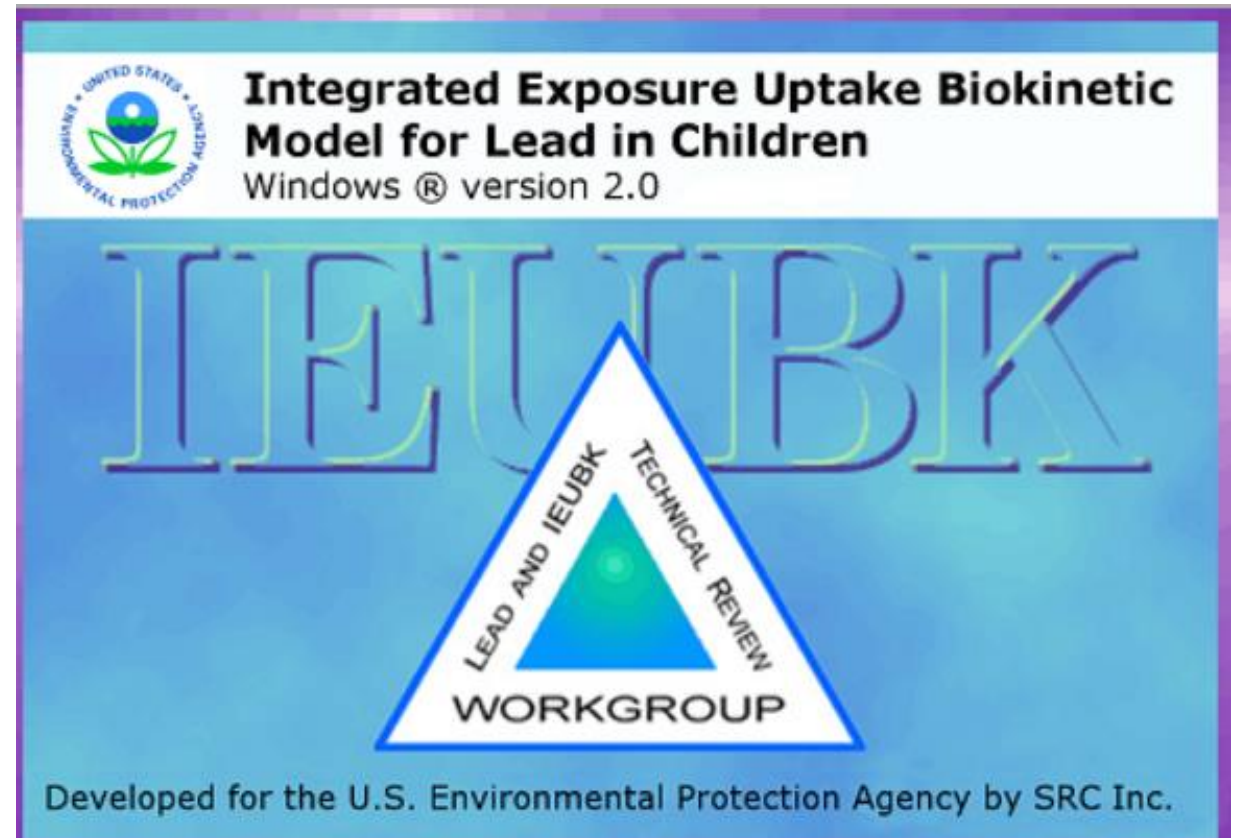
## Lead is different

- No toxicity factor unlike other 800 published levels
- Lead is modeled to a chosen blood level
- Center for Disease Control (CDC) [National Health And Nutrition Examination Survey](#) (NHANES)
  - Includes blood lead levels
- CDC defines a 'Level of Concern' based on the 95 percentile of the average Pb blood level
  - Prior to 2012, CDC indicated 10ug/dl was a level of concern
  - 2012 CDC determined 5ug/dl
  - Since moved to 3.5 ug/dl



# Lead Models

- EPA uses two models to determine blood lead levels resulting from site concentrations.
  - IEUBK – (Integrated Exposure Uptake Biokinetic Model) for 0-84 months
    - Residential soil lead scenarios are based on children
    - [2020 update](#)
  - ALM- Adult Lead Model; commercial screening level
  - [2017 Update](#)
- Both models assess total exposure



## EPA Lead Screening Levels

- With [January 2024 announcement](#), EPA moved from 10ug/dl to 5 ug/dl as protective blood lead level in the models
  - IEUBK outputs 200 mg/kg residential screening level
- EPA recommends using 3.5 ug/dl if additional lead sources are present
  - IEUBK outputs 100 mg/kg residential screening level
- EPA provided nice justification in their announcement for moving to the lower blood levels based on human health risks.



# IDEM Lead Screening Levels Residential

- IDEM calculates our published levels using EPA's National Regional Screening Level Table (RSL)
  - Specifics are in R2 – Appendix A
  - EPA lead number becomes our number
- EPA updates the RSLs in May and November; the January Pb announcement did not coincide with an update.
- IDEM's updates our table in March so it does not contain the updated residential level.
- In a perfect world- EPA will update RSL in May; we'll issue an announcement.
- Please follow the [IDEM Screening and Closure Level](#) page for updates
  - Current lead announcement
  - Switching from gov.delivery – may have to sign up again



# 100 mg/kg

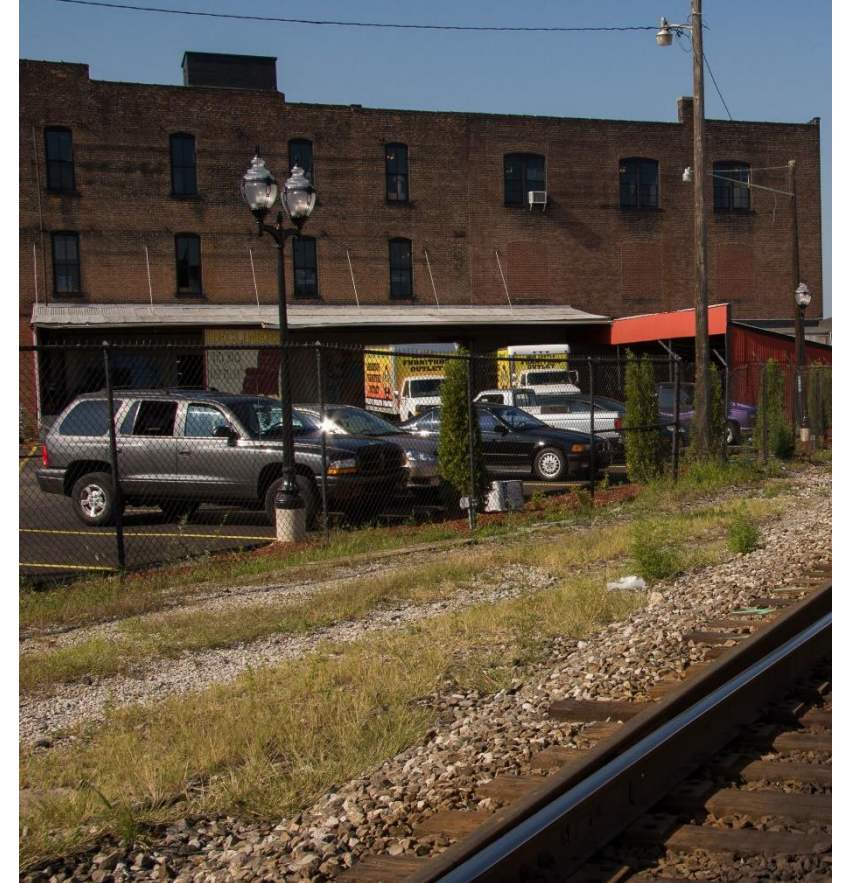
- Awaiting decision criteria for the appropriateness of 100mg/kg from EPA.
  - GIS tool is linked from [EPA lead at Superfund sites web](#) page.
  - A documentation checklist is linked from the same page.
    - Non Attainment areas for lead (area near Muncie)
    - Lead Service lines
    - Presence of Lead paint (tool is based on age of houses).
- If you have Lead between 100 and 200 mg/kg please work with your PM for risk recommendations

**Table 1: Evaluate Primary Data Sources in “Residential Lead GIS Screening Tool”** [**\*\*Ctrl+Click here to access GIS tool\*\***]

Yes	No	?	Question	Data Evaluation Notes	References
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the study area in a NAAQS nonattainment zone for lead?		<a href="#">EPA Green Book provides detailed information about NAAQS designations</a>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the EJScreen Lead Paint Index data demonstrate that a majority of the homes in the study area are at or above the 80 <sup>th</sup> percentile?		<a href="#">EJ Screen Environmental Indicators</a> <a href="#">Census Bureau housing data tools</a> <a href="#">American Community Survey data</a>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are you able to you select a screening level based on these primary data sources?	<input type="checkbox"/> Yes: 200 ppm <input type="checkbox"/> Yes: 100 ppm <input type="checkbox"/> No: continue with checklist <i>If yes, skip to the last page to summarize the weight of evidence and to document approval.</i>	

## Commercial Lead Published Level

- EPA uses Adult Lead Model to calculate (ALM)
  - ALM calculates expected increase in blood level from your site and adds it to a baseline based on the NHANES data.
    - Receptor is fetus of a pregnant female worker.
  - 2017 EPA updated the ALM baseline and standard deviation criteria
- Commercial screening level is not expected to change even with 5ug/dl blood level endpoint
  - Adults are different than kids
  - Generally requires use restrictions
  - Make sure baseline and assumptions are appropriate for your site





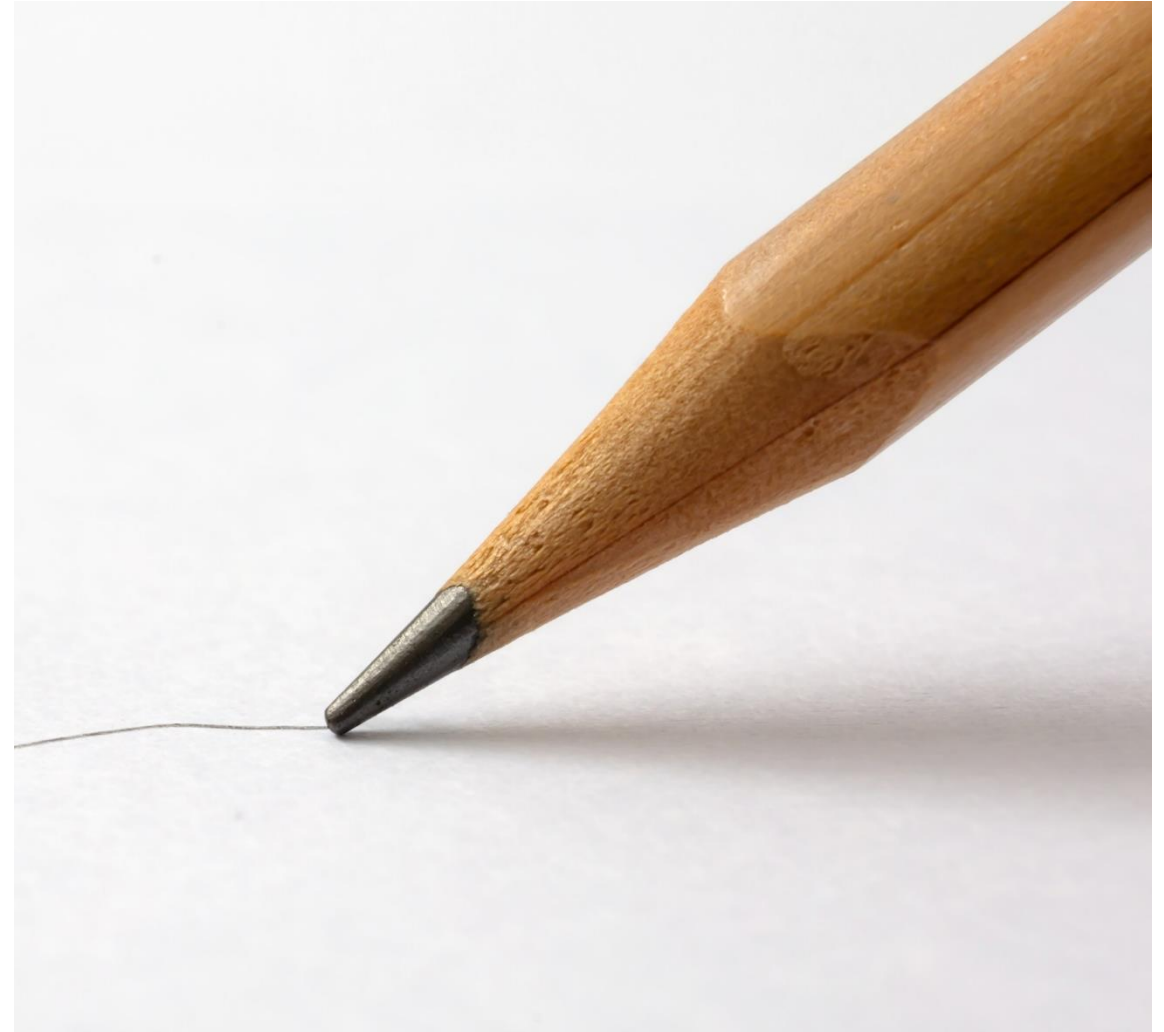
## IDEM Recreational Lead Screening Levels



- Models are for children or adults.
  - Recreational screening levels are aimed at in betweeners-
    - not adults ;not children
  - Current IDEM Pb screening level for community parks, trails and sports fields is 800mg/kg
- Make sure assumptions are appropriate for your site
  - Trails- paved
  - Community Park
  - Playing field – 30 days a year

## Pb Summary

- Specific Lead recommendations are evolving
- Subscribe to [IDEM Screening and Closure Level](#) page updates for more info because that's where we will post updates.
- As always, work with your project manager.



## PFAS- Overview

- Three EPA legislative proposals affecting IDEM 'cleanup' programs
  - Hazardous Substance (CERCLA)
  - Hazardous Constituent/ Waste (RCRA)
  - MCL (Safe Drinking Water Act (SDA))
- IDEM initiatives



## PFAS- Legislation

- Hazardous Waste/ Constituent
  - IDEM RCRA including RCRA Corrective Action
  - Hazardous Waste list is at [40 CFR part 261 Subpart D](#)— Lists of Hazardous Wastes;
  - Hazardous constituent 40 CFR Appendix VIII to Part 261
- [Feb 2024, US EPA](#) proposed listing 9 PFAS as hazardous constituents along with a clarification of hazardous waste definition and applicability to emerging contaminants
  - Work with your RCRA corrective action PM as this legislation progresses
- Updates to IDEM understanding will be posted on IDEM PFAS or program webpages.
- EPA announcement indicated a year to enact

## PFAS- Legislation

- CERCLA regulates releases of Hazardous Substances
  - EPA hazardous substance list is at [40CFR302.4 Appendix A](#) and includes:
    - Clean Water Act (CWA) Hazardous Substance
    - CWA Toxic Pollutant
    - Clean Air Act HAP
    - RCRA Hazardous Waste
- [2022-US EPA proposed PFOA/ PFOS as CERCLA Hazardous Substance](#)
  - Adding directly to the list- first time
  - Legislation is in 'inter-agency review'
- CERCLA authorized programs following this legislation
  - Includes Federal Programs, State Cleanup



## PFAS- MCL

- MCLs calculated per Safe Drinking Water Act (SDWA) for public water suppliers
  - U.S. EPA Science Advisory Board Publishes Health Advisories (HA)
  - U.S. EPA sets Maximum Contaminant Level Goals (MCLGs):
  - Sec 1412 (i) MCLG -> MCL, U.S. EPA must consider (partial list):
    - Costs and benefits associated with the proposed and alternative MCL values
    - The contaminant's adverse health effects on the general population and sensitive subpopulations
- MCL set as close to the MCLG as is feasible

More Info: [How EPA Regulates Drinking Water Contaminants | US EPA : Link to SDWA](#)

# PFAS- MCL Proposal

- Rule final April 10, 2024
  - PFOA/PFOS- 4 ppt
  - GenX, PFNA, PFHxS -10ppt
  - GenX, PFBS, PFNA, PFHxS combined hazard index (HI) <1.
    - Fact sheet on how to apply here: [FACT SHEET \(epa.gov\)](#)
- MCLs affect IDEM risk-based closure because MCL becomes groundwater published level
- IDEM current published level table contains several PFAS because RSL table contains them
  - RSL inclusion depends on toxicity information not legislation
- Look for IDEM updates on [IDEM Screening and Closure Level](#) page

## IDEM PFAS- Other

- Other Science Services Branch work
  - R2 Table 2-A may be updated to include PFAS
    - Not expecting this list to be narrow- initially at least
  - Staying up to date on EPA methods development
- [IDEM PFAS Web Page](#)
  - AFFF collection
  - OWQ PFAS Community Water Supply initiative



## PFAS- Conclusion

- IDEM Risk Based Closure Programs following EPA regulations
- Work with your site's project manager as things progress
- Updates on [IDEM Screening and Closure Level Tables](#) page
- Other progress on our [IDEM PFAS Web Page](#)

**“If you think you are too small to make a difference, try sleeping with a mosquito”**

**Dalai Lama**



*Thank You*  
*Susan McKinley*  
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Visit **on.in.gov/survey** or  
scan the QR code to provide feedback.

*We appreciate your input!*

