ADOPTIONS SECTION

ENVIRONMENTAL PROTECTION

CONTAMINATED SITE REMEDIATION AND REDEVELOPMENT

Notice of Administrative Change

Residential Soil Remediation Standard for Lead

Remediation Standards

N.J.A.C. 7:26D Appendix 1

Effective Date: March 26, 2024.

Take notice that the New Jersey Department of Environmental Protection (Department) is changing Appendix 1, Table 1, of the Remediation Standards, N.J.A.C. 7:26D, to update the residential soil remediation standard for the ingestion-dermal exposure pathway for lead, based on revisions the United States Environmental Protection Agency (USEPA) has made to its Integrated Environmental Uptake Biokinetic Model for Lead in Children (IEUBK) input parameters. N.J.A.C. 7:26D-7.2(a)4 provides that the Department shall update a remediation standard for soil or indoor air at N.J.A.C. 7:26D Appendix 1 when the USEPA revises or replaces its IEUBK Model and Adult Lead Model and input parameters for lead. The updated soil remediation standard is operative as of March 26, 2024. See N.J.A.C. 7:26D-7.2(d). A copy of this notice is also available on the Department's website at https://www.nj.gov/dep/rules/adminchg.html.

Since 1994, the USEPA Office of Land and Emergency Management (OLEM) has recommended the use of the IEUBK model to support clean up decisions at current and future anticipated residential sites. The IEUBK model is used to predict a geometric mean blood lead

level in young children (birth to seven years) that are exposed to lead from several sources of exposure (air, water, soil, dust, and diet) and routes, and to limit the probability to less than a five percent chance of exceeding a target blood lead level. The provision at N.J.A.C. 7:26D-7.2 enables the Department to respond to environmental threats on a timely basis by adopting a remediation standard based on updated information, while at the same time notifying the regulated community of the applicable standards through a notice of administrative change.

The USEPA released its IEUBK Version 2 in May 2021, which included revisions to several model input parameters. In addition, OLEM issued its national updated residential soil lead guidance incorporating the use of IEUBK Version 2 and revised target blood lead levels on January 17, 2024. OLEM updated the residential soil lead regional screening level (RSL) and removal management level (RML) for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) Corrective Action Program. When evaluating residential sites with soil lead contamination, OLEM recommends USEPA regions use a residential soil lead RSL and RML of 200 parts per million (milligrams per kilogram (mg/kg)). However, if an additional source of lead is identified (for example, lead water service lines, lead-based paint, nonattainment areas of the lead National Ambient Air Quality Standard), then USEPA regions should use a RSL of 100 mg/kg. The USEPA uses RSLs as screening tools to help identify and define areas that need further evaluation in the risk assessment process. RMLs are screening tools used to help prioritize and define areas that may pose the greatest threat to human health.

Prior to the release of OLEM's updated residential soil lead guidance, USEPA's residential soil lead RSL and RML were both 400 mg/kg, which is equivalent to the Department's residential soil remediation standard for the ingestion-dermal exposure pathway

for lead. This value was derived using USEPA's IEUBK Version 1 Model for lead in children. In USEPA's 1994 *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, USEPA adopted 10 micrograms of lead per deciliter of blood (µg/dL) as the 95th percentile target blood lead level of concern to derive a residential lead soil screening level. Using the 1994 guidance and the IEUBK model, the USEPA established the 400 mg/kg residential soil lead RSL and RML.

The science on lead has evolved and demonstrates that a target blood lead level of 10 µg/dL is not protective of childhood exposures to lead. USEPA's 2013 Integrated Science Assessment for Lead found "clear evidence of cognitive function decrements in young children (4 to 11 years old) with mean or group blood lead levels measured at various life stages and time periods between 2 and 8 µg/dL." The 2020 Agency for Toxic Substances and Disease Registry's Toxicological Profile for Lead found "supporting evidence that exposures to lead may produce effects on cognitive function in populations whose blood lead levels are well below 5 µg/dL and may extend to levels below 1 µg/dL." The OLEM recommended RSLs of 200 mg/kg and 100 mg/kg based on predicted values using IEUBK Version 2, with 95th percentile target blood lead levels of five µg/dL and 3.5 µg/dL, respectively, to result in geometric mean blood lead levels (2.3 µg/dL and 1.7 µg/dL, respectively). Based on the revisions to the IEUBK Version 1 input parameters and the OLEM updated residential soil lead guidance, the Department is using IEUBK Version 2 with the five µg/dL 95th percentile target blood level to update the residential soil remediation standard for the ingestion-dermal exposure pathway from 400 mg/kg to 200 mg/kg, consistent with current USEPA guidance.

The Department anticipates that the updated residential soil remediation standard for lead will not have a notable economic impact on site remediations throughout the State. The

Department has a record of 118,738 remediation sites, approximately nine percent (10,731) of which have data for lead contamination. Of that nine percent of cases with lead data, 4,388 (about four percent of total remediation sites) are active sites and 6,343 (about five percent of total remediation sites) are closed sites. Focusing on the active sites with lead data, 1,459 sites reported lead below 200 mg/kg, 255 sites reported lead between 200 mg/kg and 400 mg/kg, and 2,674 sites reported lead above 400 mg/kg. Of the 6,343 closed sites with lead data, 2,450 sites reported lead below 200 mg/kg, 260 sites reported lead between 200 mg/kg and 400 mg/kg, and 3,633 sites reported lead above 400 mg/kg.

The Department expects that this updated residential remediation standard for lead will affect those 255 active sites that reported lead between 200 mg/kg and 400 mg/kg because such sites will now have exceedances of lead over 200 mg/kg. The 260 closed sites would not be affected, as the updated remediation standard of 200 mg/kg is not lower by an order of magnitude than the previous remediation standard of 400 mg/kg. See N.J.A.C. 7:26D-1.4(b)1i. Consequently, the Department anticipates that there will be an economic impact on about 0.2 percent of the total remediation sites (255 active sites reporting lead, of the 118,738 remediation sites), due to the additional remediation necessary to meet this updated residential remediation standard for lead.

This updated residential soil remediation standard for lead applies to all residential sites as defined in the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. However, the person responsible for conducting the remediation may continue to use the remediation standard for lead that was in effect prior to March 26, 2024, provided the conditions at N.J.A.C. 7:26D-7.2(e) are met. The person responsible for conducting the remediation may continue to use a remediation standard, which is specified in a remedial action workplan or remedial action report

for a site, provided that: (1) the remedial action workplan or remedial action report is submitted no later than six months after the effective date of the updated standard; (2) the remedial action workplan or remedial action report is approved by the Department or is certified by a licensed site remediation professional; (3) the remediation standard specified in the remedial action workplan or remedial action report for a given contaminant is not greater by an order of magnitude than the updated remediation standard; and (4) the remedial action shall comply with the applicable regulatory timeframes pursuant to the Technical Requirements for Site Remediation at N.J.A.C. 7:26E-5.

Full text of the changed rule follows (addition indicated in boldface **thus**; deletion indicated in brackets [thus]):

APPENDIX 1

REMEDIATION STANDARDS TABLES

Table 1 – Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway - Residential (mg/kg)

(All numeric values are rounded to two significant figures)

Contaminant	CAS No.	Residential Carcinogenic Ingestion-Dermal Human Health-based Criterion	Residential Noncarcinogenic Ingestion-Dermal Human Health-based Criterion	Reporting Limit	Soil Remediation Standard Ingestion-Dermal – Residential
...					
Lead (total)	7439-92-1	NA	NA	0.50	[400[5]] **200[5]**
...					

NA – Not applicable because appropriate toxicological information is not available

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Table 2-Soil Remediation Standards for the Ingestion—Dermal Exposure Pathway — Nonresidential (mg/kg)

(No change.)