

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Toxic Substances and Disease Registry

[ATSDR-XXX]

Update to ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil

AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services (HHS).

ACTION: Request for public comments on the revised Policy Guideline document that is used by health assessors in the evaluation of health hazards associated with exposure to dioxins and dioxin-like compounds in residential soil.

SUMMARY:

In 1998, the Agency for Toxic Substances and Disease Registry (ATSDR) issued the *Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil*. This document was intended to provide guidance to health assessors in evaluating the public health implications of dioxin and dioxin-like compounds (e.g., 2,3,7,8-tetrachlorodibenzo-*p*-dioxin [TCDD], chlorinated dibenzodioxins [CDDs], chlorinated dibenzofurans [CDFs], and other structurally related groups of chemicals from the family of halogenated aromatic hydrocarbons) in residential soils near or on hazardous waste

sites. The 1998 Policy Guideline established a screening level of 0.05 ppb TEQ (50 ppt), an evaluation level (>0.05 ppb TEQ, <1 ppb), and an action level of 1 ppb TEQ (1,000 ppt) for dioxins in residential soil and made recommendations for specific considerations or public health actions.

In reviewing ATSDR health assessments over the past 8 years, the agency has become concerned that this guidance has not been consistently applied. The primary concern has been that the concept of an *Action Level* had been misinterpreted. In some situations the action level has been interpreted to be 1) a soil concentration that defines a public health hazard, 2) an ATSDR clean-up level which implies the need for site remediation, or 3) an initial screening level that defines a safe level of exposure, below which there is no public health concern. None of these interpretations were either intended or appropriate.

In response to these concerns ATSDR has updated its *Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil*. The most significant change is the deletion of the 1-part per billion (ppb) action level criteria. It should be noted that this update does *not* reflect a change in the hazard assessment that established ATSDR's 1998 Toxicological Profile and Minimum Risk Level (MRL) determination of the health concerns associated with dioxin exposure. Details about the health concerns for dioxins have not been revised as summarized in the Technical Support Document for ATSDR Final Policy Guideline: Dioxin and Dioxin-Like Compounds in Soil (De Rosa et al. 1999b) and in the ATSDR Toxicological Profile for Chlorinated Dibenzo-*p*-Dioxins (ATSDR 1998).

The key elements in the updated ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil are as follows:

- **Deletion of the 1 ppb action level as the criteria for taking specific public health actions.**

The 1-ppb dioxin soil concentration should not be used as a comparison value for defining public health hazards in public health assessments and consultations.

The 1-ppb action level can be cited by health assessors as the Superfund Dioxin Cleanup policy criteria (EPA 1989, 1998).

- **Retention of the 0.05 ppb screening level.**

The minimal risk level (MRL)-based environmental media evaluation guide (EMEG) of 0.05 ppb for dioxin TEQ in soil is retained as the basis for screening soil concentrations. Levels exceeding this screening level should be evaluated as described in the *ATSDR Public Health Assessment Guidance Manual (PHAGM)* (ATSDR 2005). This clarification will ensure that evaluation of dioxins and dioxin-like compounds in soil will be done in the same manner as all other soil contaminants.

- **Recommendation to conduct exposure pathways analyses for dioxins and dioxin-like compounds.**

The focus of the guideline is the assessment of direct exposure to soil contamination, **particularly** soil ingestion. However, health assessors should be aware of the potential impact of indirect exposure pathways on exposed

populations in site-specific health assessments. This document does not provide specific guidance on how these indirect pathways should be assessed. However, the PHAGM document does provide assistance in evaluating indirect exposure pathways such as food chain contamination (ATSDR 2005).

- **Updated TEFs**

The 2006 World Health Organization Toxicity Equivalency Factors (TEFs) for dioxins and dioxin-like compounds have been included in the updated document.

BACKGROUND INFORMATION

In 1998, the Agency for Toxic Substances and Disease Registry (ATSDR) adopted a Final Policy Guideline for Dioxin and Dioxin-Like Compounds (De Rosa et al. 1999a). The 1998 policy guideline was accompanied by a Technical Support Document for ATSDR Policy Guideline (De Rosa et al. 1999b). The initiative to develop this policy guideline was based on a request from the U.S. Environmental Protection Agency (EPA) to evaluate the protectiveness of the EPA Superfund Policy for Dioxins in Residential Soils, which established 1 part per billion (ppb) (1,000 parts per trillion [ppt]) total dioxin toxicity equivalents (TEQ) as the starting point for making clean-up decisions. In addition, the 1998 policy guideline was to provide guidance to health assessors in evaluating the public health implications of dioxin and dioxin-like compounds (e.g., 2,3,7,8-tetrachlorodibenzo-*p*-dioxin [TCDD], chlorinated dibenzodioxins [CDDs], chlorinated dibenzofurans [CDFs], and other structurally related groups of chemicals from the family of halogenated aromatic hydrocarbons) in residential soils near or on

hazardous waste sites. As stated in the 1998 document, “these guidelines and procedures apply to human exposure for **direct** ingestion of soils contaminated with dioxin and dioxin-like compounds in residential areas and may not be appropriate for other exposure scenarios.” The 1998 Policy Guideline established a screening level of 0.05 ppb TEQ (50 ppt), an evaluation level (>0.05 ppb TEQ, <1 ppb), and an action level of 1 ppb TEQ (1,000 ppt) for dioxins in residential soil and made recommendations for specific considerations or public health actions.

The 1998 ATSDR action level triggered a set of recommendations for “potential public health actions”, including surveillance, research, health studies, community education, and exposure investigations. However, these actions should be activities to be considered by health assessors regardless of exceeding a 1 ppb level in soil. The 1998 ATSDR policy guideline established an *action level*, yet did not require that specific actions be conducted.

ATSDR has established environmental screening values for chemicals to be used by health assessors to assess exposures. No other chemical has an action level as was established for dioxins in soil in the 1998 policy guideline. This inconsistency alone has led to confusion regarding the appropriate screening value for soil dioxin levels.

The primary objectives of the updated Policy Guidelines are to provide greater consistency in ATSDR Health Assessments and to bring dioxin assessments in line with how all other chemicals are evaluated by the agency.

SUMMARY OF PEER REVIEW FOR DOCUMENT:

Internal Review by ATSDR Divisions

ATSDR Board of Scientific Counselor Review

External ATSDR Partners Peer Review

AVAILABILITY OF DOCUMENT AND PEER REVIEW COMMENTS

The Update to ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil document, accompanying Summary Fact Sheet, and comments from External Peer Reviewers are available on the ATSDR website at _____.

DATES: Comments concerning this document must be received by [Please insert a date that is 90 days after date of publication of this Federal Register notice].

ADDRESSES: FOR FURTHER INFORMATION CONTACT:

Dated:

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