

collected in the 1988–1989 National Sewage Sludge Survey (NSSS). See 64 FR 72045, 72048–72051 (December 23, 1999) and the National Sewage Sludge Survey (USEPA, 1990) for a full discussion of the proposed rule and supporting documentation.

In addition, unrelated to dioxins in sewage sludge, EPA proposed technical amendments to the frequency of monitoring requirements for pollutants other than dioxins. These amendments were intended to clarify but, with one exception, not alter the monitoring schedule in the existing sewage sludge rule. The one exception would require preparers of material derived from sewage sludge to determine the appropriate monitoring schedule based on quantity of material derived rather than quantity of sewage sludge received for processing.

B. Notice of Data Availability (NODA)

Based on comments critical of both the proposal's use of a deterministic risk assessment and its use of more than decade-old data on dioxins concentrations in sewage sludge, in 2001 EPA collected and analyzed samples of sewage sludge nationwide in order to obtain new information on the levels of dioxins in sewage sludge. EPA also substantially revised the cancer risk assessment for dioxins associated with land application of sewage sludge. EPA used new dioxins concentration data in the revised risk assessment and conducted statistical analyses to better understand the fluctuation of dioxins concentrations in sewage sludge samples over time. In the NODA, EPA summarized the new sewage sludge data, the revised risk assessment, and presented an approach to assess potential non-cancer health effects of exposure to dioxins associated with land application of sewage sludge. EPA also presented a screening ecological risk analysis (SERA) of the effects of dioxins in land-applied sewage sludge on ecological species. EPA requested comments on the new data and risk analyses, additional dioxins exposure information, and comments on any impact the data and information might have on the 1999 proposed rule with respect to land application of sewage sludge. EPA also requested comment on whether monitoring requirements to measure dioxins in land-applied sewage sludge should be promulgated in lieu of a numerical limitation.

In the NODA, EPA also presented information from EPA's draft dioxin reassessment document, Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds. EPA described

implications of the draft dioxin reassessment for the final determination regarding regulation of dioxins in land-applied sewage sludge and requested public comment. EPA included this information in the NODA in order to be in a position to fulfill its obligations under the *Gearhart v. Whitman* consent decree. The consent decree requires EPA to take final action on or before October 17, 2003, regardless of whether EPA issues a final dioxin reassessment document, with some schedule adjustment allowed depending on the timing of EPA's issuance of a final dioxin reassessment document prior to October 17, 2003. EPA has not issued a final dioxin reassessment document; thus, the October 17, 2003 deadline applies. Regarding the draft dioxin reassessment documents discussed in the NODA, EPA has continued to revise these documents, and the science continues to be under review. Review by the National Academy of Sciences is the next review to be undertaken, as specified by Congress in the Conference Report accompanying EPA's fiscal year 2003 appropriation. H.R. Conf. Rep. No. 108–10, at 1445–46 (2003).

IV. What Final Action Is EPA Taking Today?

EPA has determined that no further regulation of land-applied sewage sludge is needed to protect public health and the environment from reasonably anticipated adverse effects from exposure to dioxins in land-applied sewage sludge. Therefore, no numeric limitations, monitoring, operational standards, or management practices are being established in 40 CFR part 503 for dioxins in land-applied sewage sludge.

While monitoring data could be useful to a local community to discover whether a significant increase is occurring in the dioxin concentration and assist in identifying the source of any such significant increase (see later discussion), the data indicate that such increases are short-term in nature, and the risk assessment showing low risk to the HEI takes these spikes into account. Therefore, EPA has determined that monitoring in lieu of a numerical limit is not warranted.

With respect to revisions to the existing requirements pertaining to frequency of monitoring of pollutants other than dioxins in land-applied sewage sludge, EPA is not taking final action at this time. Therefore, any comments on the proposed amendment to the footnote to Table 1 in 40 CFR 503.16 are not being addressed today. EPA may take final action on this

proposed amendment in a subsequent rulemaking.

V. What Is the Basis for This Final Action for Dioxins in Land-Applied Sewage Sludge?

A. Overview

Sewage sludge is a residual mixture of solids and water as a result of wastewater treatment. Generally, sewage sludge consists of 2 to 28 percent solids in a water matrix. The solids component of sewage sludge typically contains microbial residue, microbes and trace quantities of chemicals such as metals and organic compounds, including dioxin and dioxin-like compounds. In the United States, approximately 8 million dry metric tons (DMT) of sewage sludge are produced annually by 16,000 wastewater treatment plants. Approximately 54 percent (4.32 million DMT) are applied to land to fertilize and condition soils; 28 percent (2.24 million DMT) are disposed of at municipal solid waste landfills; 17 percent (1.36 million DMT) are incinerated; and 1 percent (0.08 million DMT) is disposed of in lagoons or sewage sludge-only landfills. Of the total amount land-applied, an estimated 85 percent (3.7 million DMT) are applied to agricultural lands used to raise crops for human or animal consumption. Sewage sludge is applied to some 0.1 percent of available agricultural land in the United States. Other land application sites include forests, reclamation sites such as strip mines, and public-contact sites, such as parks, golf courses, highway median strips, and lawns.

EPA has decided not to regulate dioxins in land-applied sewage sludge because EPA considers the predicted risks to human health and the environment from dioxin and dioxin-like compounds in land-applied sewage sludge to be low. Based on recently collected data and assessment of risk, EPA has concluded that the existing regulation of sewage sludge in 40 CFR part 503 is adequate to protect human health and the environment from the reasonably anticipated adverse effects of dioxins in land-applied sewage sludge.

Risk is determined based on both toxicity and exposure. Regarding toxicity, dioxins have been shown to elicit both cancer and a variety of non-cancer effects in animals, and there is strong evidence to indicate that humans are susceptible to the same toxic effects. Although dioxins are found in extremely small quantities in water and soil, they persist in the environment and accumulate in the food chain. However, regarding exposure, EPA's evaluation of the effects on human health due to