

US EPA ARCHIVE DOCUMENT

Human Health and Environmental Damages from Mining and Mineral Processing Wastes

I. EXECUTIVE SUMMARY

The U.S. EPA Environmental Protection Agency (EPA) developed this background document to illustrate the human health and environmental damages caused by management of wastes from mining (i.e., extraction and beneficiation) and mineral processing, particularly damages caused by placement of mining and mineral processing wastes in land-based units. These damage case illustrations will provide technical support for various provisions of the supplemental proposed rule to apply Phase IV land disposal restrictions to newly identified mineral processing wastes and make other regulatory changes.

Although the damage cases in this report do not represent a statistically representative sample of all mining and mineral processing sites or the damages they have caused, the cases do provide convincing evidence that wastes from mining and mineral processing have caused significant human health and environmental damages. Both wastes that are subject to and, under the Bevill Amendment (RCRA §3001(b)(3)(A)(i-iii)), exempt from regulation as hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA) are responsible for these damages. These damages occur across a broad range of mineral commodity sectors--from alumina to zirconium--and throughout all regions of the United States, in a wide variety of climatic and geological zones and in both rural and urban areas.

Process for Developing the Background Document

In preparing this background document, EPA sought to support selected aspects of the supplemental proposed rule by providing readily available examples of human health and environmental damage caused by wastes from mining and mineral processing. EPA relied primarily on the extensive data on damages from the management of mining and mineral processing wastes that EPA had previously collected and analyzed. To identify a few additional cases, EPA conducted limited new data gathering that was feasible within project constraints. In identifying existing and new damage cases to compile, EPA selected cases that demonstrate that human health and environmental damages occur across a wide range of mineral commodity sectors and throughout the United States.

EPA performed three steps to assemble this document:

- (1) Compiling existing damage case summaries;
- (2) Reviewing relevant inspection, enforcement, permitting, and other relevant files for mining and mineral processing facilities in selected states; and
- (3) Soliciting the help of EPA Region 10 in drafting new damage cases.

The 66 damage cases presented in the following chapter of this background document illustrate the significant human health and environmental damages caused by the management of wastes from mining and mineral processing, particularly placement in land-based units. Both wastes that are subject to and, under the Bevill Amendment (RCRA §3001(b)(3)(A)(i-iii)), exempt from regulation as hazardous wastes under RCRA Subtitle C have caused these damages. The damages have occurred across the broad range of mineral sectors, including virtually all the sectors affected by the proposed supplemental rule to apply Phase IV land disposal restrictions to newly identified mineral processing wastes and make other regulatory changes. In addition, the damages have occurred throughout all regions of the United States, in a wide variety of climatic and geological zones and in both rural and urban areas.