EPA's Guide for Industrial Waste Management Introduction

Welcome to EPA's Guide for Industrial Waste Management. The purpose of the Guide is to provide facility managers, state and tribal regulators, and the interested public with recommendations and tools to better address the management of land-disposed, non-hazardous industrial wastes. The Guide can help facility managers make environmentally responsible decisions while working in partnership with state and tribal regulators and the public. It can serve as a handy implementation reference tool for regulators to complement existing programs and help address any gaps. The Guide can also help the public become more informed and more knowledgeable in addressing waste management issues in the community.

In the Guide, you will find:

- Considerations for siting industrial waste management units
- Methods for characterizing waste constituents
- Fact sheets and Web sites with information about individual waste constituents
- Tools to assess risks that might be posed by the wastes
- Principles for building stakeholder partnerships
- Opportunities for waste minimization
- Guidelines for safe unit design
- Procedures for monitoring surface water, air, and ground water
- Recommendations for closure and post-closure care

Each year, approximately 7.6 billion tons of industrial solid waste are generated and disposed of at a broad spectrum of American industrial facilities. State, tribal, and some local governments have regulatory responsibility for ensuring proper management of these wastes, and their programs vary considerably. In an effort to establish a common set of industrial waste management guidelines, EPA and state and tribal representatives came together in a partnership and developed the framework for this voluntary Guide. EPA also convened a focus group of industry and public interest stakeholders chartered under the Federal Advisory Committee Act to provide advice throughout the process. Now complete, we hope the Guide will complement existing regulatory programs and provide valuable assistance to anyone interested in industrial waste management.

What Are the Underlying Principles of the Guide?

When using the *Guide for Industrial Waste Management*, please keep in mind that it reflects four underlying principles:

- **Protecting human health and the environment.** The purpose of the Guide is to promote sound waste management that protects human health and the environment. It takes a multi-media approach that emphasizes surface-water, ground-water, and air protection, and presents a comprehensive framework of technologies and practices that make up an effective waste management system.
- **Tailoring management practices to risks.** There is enormous diversity in the type and nature of industrial waste and the environmental settings in which it is managed. The Guide provides conservative management recommendations and simple-to-use modeling tools to tailor management practices to waste- and location-specific risks. It also identifies in-depth analytic tools to conduct more comprehensive site-specific analyses.
- **Affirming state and tribal leadership.** States, tribes, and some local governments have primary responsibility for adopting and implementing programs to ensure proper management of industrial waste. This Guide can help states, tribes, and local governments in carrying out those programs. Individual states or tribes might have more stringent or extensive regulatory requirements based on local or regional conditions or policy considerations. The Guide complements, but does not supersede, those regulatory programs; it can help you make decisions on meeting applicable regulatory requirements and filling potential gaps. Facility managers and the public should consult with the appropriate regulatory agency throughout the process to understand regulatory requirements and how to use this Guide.
- **Fostering partnerships.** The public, facility managers, state and local governments, and tribes share a common interest in preserving quality neighborhoods, protecting the environment and public health, and enhancing the economic well-being of the community. The Guide can provide a common technical framework to facilitate discussion and help stakeholders work together to achieve meaningful environmental results.

What Can I Expect to Find in the Guide?

The *Guide for Industrial Waste Management* is available in both hard-copy and electronic versions. The hard-copy version consists of five volumes. These include the main volume and four supporting documents for the ground-water and air fate-and-transport models that were developed by EPA specifically for this Guide. The main volume presents comprehensive information and recommendations for use in the management of land-disposed, non-hazardous industrial waste that includes siting the waste management unit, characterizing the wastes that will be disposed in it, designing and constructing the unit, and safely closing it. The other four volumes are the user's manuals and background documents for the ground-water fate-and-transport model—the Industrial Waste Evaluation Model (IWEM)—and the air fate-and-transport model—the Industrial Waste Air Model (IWAIR).

The electronic version of the Guide, which can be obtained either on CD-ROM or from EPA's Web site **<www.epa.gov/epaoswer/non-hw/industd/index.htm>**, contains a large collection of additional resources. These include an audio-visual tutorial for each main topic of the Guide; the IWEM and IWAIR models developed by EPA for the Guide; other models, including the HELP (Hydrologic Evaluation of Landfill Performance) Model for calculating infiltration rates; and a large collection of reference materials to complement the information provided in each of the main chapters, including chemical fact sheets from the Agency for Toxic Substances and Disease Registry, links to Web sites, books on pertinent topics, copies of applicable rules and regulations, and lists of contacts and resources for additional information. The purpose of the audio-visual tutorials is to familiarize users with the fundamentals of industrial waste management and potentially expand the audience to include students and international users.

The IWEM and IWAIR models that come with the electronic version of the Guide are critical to its purpose. These models assess potential risks associated with constituents in wastes and make recommendations regarding unit design and control of volatile organic compounds to help mitigate those risks. To operate, the models must first be downloaded from the Web site or the CD-ROM to the user's personal computer.

What Wastes Does the Guide Address?

The *Guide for Industrial Waste Management* addresses non-hazardous industrial waste subject to Subtitle D of the Resource Conservation and Recovery Act (RCRA). The reader is referred to the existence of 40 CFR Part 257, Subparts A and B, which provide federal requirements for non-hazardous industrial waste facilities or practices. Under RCRA, a waste is defined as non-hazardous if it does not meet the definition of hazardous waste and is not subject to RCRA Subtitle C regulations. Defining a waste as non-hazardous under RCRA does not mean that the management of this waste is without risk.

This Guide is primarily intended for new industrial waste management facilities and units, such as new landfills, new waste piles, new surface impoundments, and new land application units. Chapter 7B–Designing and Installing Liners, and Chapter 4–Considering the Site, are clearly directed toward new units. Other chapters, such as Chapter 8–Operating the Waste Management System, Chapter 9–Monitoring Performance, Chapter 10–Taking Corrective Action, Chapter 11–Performing Closure and Post-Closure Care, while primarily intended for new units, can provide helpful information for existing units as well.

What Wastes Does the Guide Not Address?

The *Guide for Industrial Waste Management* is not intended to address facilities that primarily handle the following types of waste: household or municipal solid wastes, which are managed in facilities regulated by 40 CFR Part 258; hazardous wastes, which are regulated by Subtitle C of RCRA; mining and some mineral processing wastes; and oil and gas production wastes; mixed wastes, which are solid wastes mixed with radioactive wastes; construction and demolition debris; and non-hazardous wastes that are injected into the ground by the use of shallow underground injection wells (these injection wells fall under the Underground Injection Control (UIC) Program).

Furthermore, while the Guide provides many tools for assessing appropriate industrial waste management, the information provided is not intended for use as a replacement for other existing EPA programs. For example, Tier 1 ground-water risk criteria can be a useful conservative screening tool for certain industrial wastes that are to be disposed in new landfills, surface impoundments, waste piles, or land application units, as intended by the Guide. These ground-water risk criteria, however, cannot be used as a replacement for sewage sludge standards, hazardous waste identification exit criteria, hazardous waste treatment standards, MCL drinking water standards, or toxicity characteristics to identify when a waste is hazardous—all of which are legally binding and enforceable. In a similar manner, the air quality tool in this Guide does not and cannot replace Clean Air Act Title V permit conditions that may apply to industrial waste disposal units. The purpose of this Guide is to help industry, state, tribal, and environmental representatives by providing a wealth of information that relays and defers to existing legal requirements.

What is the Relationship Between This Guide and Statutory or Regulatory Provisions?

Please recognize that this is a voluntary guidance document, not a regulation, nor does it change or substitute for any statutory or regulatory provisions. This document presents technical information and recommendations based on EPA's current understanding of a range of issues and circumstances involved in waste management The statutory provisions and EPA regulations contain legally binding requirements, and to the extent any statute or regulatory provision is cited in the Guide, it is that provision, not the Guide, which is legally binding and enforceable. Thus, this Guide does not impose legally binding requirements, nor does it confer legal rights or impose legal obligations on anyone or implement any statutory or regulatory provisions. When a reference is made to a RCRA criteria, for example, EPA does not intend to convey that any recommended actions, procedures, or steps discussed in connection with the reference are required to be taken. Those using this Guide are free to use and accept other technically sound approaches. The Guide contains information and recommendations designed to be useful and helpful to the public, the regulated community, states, tribes, and local governments. The word "should" as used in the Guide is intended solely to recommend particular action and does not connote a requirements. Similarly, examples are presented as recommendations or demonstrations, not as requirements. To the extent any products, trade name, or company appears in the Guide, their mention does not constitute or imply endorsement or recommendation for use by either the U.S. Government or EPA. Interested parties are free to raise questions and objections about the appropriateness of the application of the examples presented in the Guide to a particular situation.