

OVERVIEW OF U.S. ENVIRONMENTAL PROTECTION AGENCY COAL COMBUSTION WASTE (CCW) MINE FILL ISSUES

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Abstract

The U.S. Environmental Protection Agency is developing national regulations under the RCRA statute for the management of coal combustion by-products (CCB). The regulations will address the management of CCBs in surface impoundments, landfills, and by mine placement. The regulations are a consequence of EPA's regulatory determination for fossil fuel combustion wastes, which was issued on May 22, 2000. The presentation will describe the history and basis of the determination decision, and then focus on activities concerning development of the mine placement regulations.

Introduction

We've heard much of SMCRA (Surface Mining Control and Reclamation Act), the Federal legislation providing for regulation of coal mines. Now, I briefly want to consider RCRA, the Resource Conservation and Recovery Act.

The Resource Conservation and Recovery Act

Congress enacted RCRA in 1976, just months prior to enacting SMCRA.

- C RCRA amended the Solid Waste Disposal Act of 1965, which is the fundamental Federal legislation on solid waste issues.
- C RCRA addresses a broad spectrum of materials as solid wastes, some of which aren't even solid.
- C As its name indicates, RCRA deals with conservation and recovery of our resources.
- C Importantly, RCRA also establishes a Federal system to oversee how the nation deals with some of the most noxious materials. The two key RCRA subtitles are C (hazardous waste) and D (solid waste).

RCRA Subtitle C

- C Provides for identification of "hazardous wastes," designates which materials will be regulated as "hazardous."
- C Provides for cradle-to-grave regulation of hazardous waste practices; comprehensive regulations spanning generation, storage, transport, processing, treatment, and disposal.
- C Establishes Federal regulatory program, including Federal permits, inspections, and enforcement with option for States to implement.
- C States have opportunity to demonstrate regulatory program equivalence to the Federal program and receive EPA authorization to implement in lieu of a Federal program. Most States have received authorization.

RCRA Subtitle D

- C Provides for more limited regulation of solid wastes not identified as hazardous.
- C Regulatory focus is disposal, including Federal prohibition on "open dumping." Defined as disposal in a fashion not complying with Federal disposal standards.
- C Because there are not Federal permits, Federal disposal standards under Subtitle D are self-implementing or are implemented through State permits. This means facility owners/operators either comply with the Federal standards with little flexibility or comply with State permits that can provide site-specific flexibility.

- C RCRA provides for citizen suits to help enforce standards.

For a few specific wastes, including coal combustion wastes (CCW), RCRA includes special provisions:

- C Statute exempts CCW from regulation as hazardous wastes under Subtitle C pending specific EPA actions.
- C EPA was required to conduct a special study of CCW and issue a Report to Congress. EPA was then required to issue a Regulatory Determination stating how CCW is to be regulated.
- C The Report to Congress was issued in March, 1999, and the Regulatory Determination was published following an opportunity for public comment in May, 2000.

For the 130 million tons/year of CCW, EPA's decision in Regulatory Determination said:

- C Continue exemption from Subtitle C;
- C Develop Subtitle D regulations for disposal (landfill, impoundment) (80million tons/year); and regulate mine fill (10 million tons/year) under RCRA Subtitle D and/or SMCRA.
- C Remaining 40 million tons/year (beneficial uses such as soil amendment, road, road/base, waste stabilization, cement and concrete, wallboard) continue unregulated.

Regulation developments for disposal (landfill and surface impoundments) and mine fill currently are on separate tracks.

- C For disposal, much of the data collection and analysis efforts have been completed.
- C For mine fill, EPA is still in the information-gathering and assessment mode.

Mine Fill

- C This is placement of CCW in or on land from which minerals have been or are being extracted.
- C Coal or non-coal mines.
- C This is a relatively new, but increasing practice. It is now estimated at 10 million tons per year with some 250 mines involved.
- C The practice disposes of the CCW but also puts the CCW to beneficial use.

Mine Fill Benefits

- C Improve disturbed mine lands
- C Abate acid mine drainage
- C Avoid development of greenfield CCW facilities

According to its Regulatory Determination, EPA's primary concern is for potential adverse impacts on groundwater

- C Possible placement into useable groundwater
- C Subsequent inflow/outflow of groundwater, with possible adverse impacts on users and uses.

The Regulatory Determination acknowledged EPA's lack of information on PRACTICES and CONTROLS for mine fill.

Complexities of Practices

- C Mine Fill is a relatively new practice that lacks long-term monitoring data.
- C Mine sites often contain otherwise non-potable groundwater.
- C Mine sites not amenable to groundwater flow due to tight fireclay and cementitious nature of CCW.
- C Large expanses of disturbed land with variable, site-specific hydrogeology and CCW characteristics; also
- C Variety of placement practices (e.g., intermix with spoil, spread/compact as liner to isolate spoil, place in bulk).

Complexities of Controls

- C Both Federal and State controls may apply.
- C For permitted coal mines only: Surface Mining Control and Reclamation Act (SMCRA) controls apply through Federal Office of Surface Mining or approved State permit programs.
- C For abandoned coal and non-coal mines: other State controls apply, such as solid waste permit programs.

EPA is engaged in information collection to fill information needs on practices and controls.

- C Learning about practices conducted at mine sites and how State agencies ensure compliance with regulatory controls.
- C Working with Office of Surface Mining and “SMCRA” State agencies through Interstate Mining Compact Commission (IMCC) and with “RCRA” State agencies through Association of State and Territorial Solid Waste Management Officials (ASTSWMO).

Information gathering should provide foundation for RCRA Subtitle D and/or SMCRA controls that will:

- C Allow for beneficial placement of CCW at mines.
- C Protect against adverse impacts on groundwater, both near- and long-term (i.e., post-closure).
- C Provide flexibility for site-specific determinations.
- C Avoid undesirable disruptions to existing, protective regulatory programs.

Form more information on EPA investigation concerning Coal Combustion Wastes, see the following EPA Internet web site: www.epa.gov/epaoswer/other/fossil/

Truett V. Degeare (P.E) has been with the Federal solid waste program since 1968 and with the U.S. Environmental Protection Agency since its formation in 1970, serving in various staff and management positions. Principal areas of contribution: development of Federal regulations on incineration and land disposal of solid waste; technical assistance to State, local and Federal agencies and other countries; development and implementation of program to authorize State hazardous waste regulatory agencies; and development of regulatory approaches for wastes from mining and minerals processing, from production of crude oil and gas, and from production of energy from fossil fuel combustion. He holds a B.S. in Civil Engineering from Missouri School of Mines and Metallurgy and an M.S. in Sanitary and Public Health Engineering from Oklahoma State University.