

Reclamation Advisory Memorandum RAM # 111

Kentucky Natural Resources and Environmental Protection Cabinet Department for Surface Mining Reclamation and Enforcement

From: Dave Rosenbaum, Commissioner

Date: May 4, 1993

Subject: Noncoal Mine Waste and Hazardous Waste

Introduction

Waste disposal at coal mines is subject to Kentucky laws and administrative regulations adopted primarily in response to the federal Resource Conservation and Recovery Act of 1976 (RCRA) and the federal Surface Mining Control and Reclamation Act of 1977 (SMCRA). These laws and regulations are administered by agencies within the Natural Resources and Environmental Protection Cabinet. Additionally, certain substances such as polychlorinated biphenyls (PCB) are regulated by the U.S. Environmental Protection Agency under federal regulations pursuant to the Toxic Substances Control Act of 1976.

In response to federal RCRA, the Division of Waste Management (DWM) in the cabinet's Department for Environmental Protection regulates waste disposal, including waste at coal mines, under a comprehensive program set forth in statutes KRS 224.40-100 to 224.60-160 and administrative regulations 401 KAR Chapters 30-49. In response to federal SMCRA, the Department for Surface Mining Reclamation and Enforcement (OSMRE) regulates surface coal mining and reclamation operations, including waste disposal associated with such operations, under KRS Chapter 350 and 405 KAR Chapters 7-24. Coal mining permittees and operators are subject to waste disposal requirements under these two separate lines of Kentucky authority.

Several different types of wastes are of concern at minesites. The regulatory names of these wastes, which come from two separate regulatory programs, can be confusing. The following informal breakdown of these wastes may help clarify the terminology. Please note that "special wastes" (item C below) are listed only for clarification - these wastes are not the subject of this RAM and are not discussed further.

- A. **"Noncoal mine waste"** (DSMRE) and **"coal mining solid waste"** (DWM) have almost the same meaning. They include garbage, mine timbers, abandoned mining machinery, lumber, etc. generated on the minesite.
- B. **"Hazardous waste"** (DWM) poses a substantial threat to human health or the environment if improperly managed. Some wastes are specifically listed by law or regulation as hazardous. Other wastes must be tested to determine if they are hazardous.

C. **"Special waste"** (DWM) is waste of high volume and low hazard, including:

1. **"Coal mine waste"** (DSMRE) and **"coal mining waste"** (DWM) have almost the same meaning. They include spoil, coal processing waste, etc. (Note that this is a completely different waste from "coal mining **solid** waste" in item A above.)
2. **"Utility waste"** (DWM) includes coal combustion fly ash, bottom ash, and scrubber sludge.

The purpose of this RAM is to clarify the requirements applicable to wastes generated by coal mines, particularly "noncoal mine waste" under 405 KAR 16:150 and 18:150 (and the closely related "coal mining solid waste" under 401 KAR 30:040; and "hazardous waste" under 401 KAR Chapters 30-40.

No garbage or other waste may be brought from offsite to the permit area for disposal unless the DWM has issued a permit for the disposal and the DSMRE permit specifically authorizes the disposal. Unauthorized dumping at minesites will subject the permittee and operator to enforcement actions by the cabinet, and pollution resulting from such dumping could result in major, long term liability. The permittee and operator should secure the minesite against unauthorized entry and dumping by the public and should instruct mine employees not to bring their household waste to the minesite. Minesites will not be allowed to become illegal open dumps.

Noncoal Mine Waste (Coal Mining Solid Waste)

"Noncoal mine waste" is the name DSMRE regulations (405 KAR 16:150 and 18:150) give to certain waste materials generated during surface and underground coal mining activities, such as grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustibles. In DWM regulations (401 KAR 30:010), this kind of waste is called **"coal mining solid waste."** 401 KAR 30:040 transfers regulatory responsibility for coal mining solid waste from DWM to DSMRE, except for any of the waste that is hazardous.

Noncoal mine waste (coal mining solid waste) consists primarily of manufactured materials and, despite the similarity in names, is fundamentally different from the earth materials that make up "coal mine waste" as defined in DSMRE regulations (405 KAR 16:001), which consists of coal processing waste and underground development waste, and "coal mining waste" as defined in DWM regulations (401 KAR 30:010), which consists of overburden, spoil, coal processing waste and some coal mining by-products.

Noncoal mine waste materials may be temporarily stored within the permit area until they can be disposed of properly. They must be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage must ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

Except for hazardous waste and some materials discussed below, noncoal mine waste materials may be disposed of in an approved designated site in the permit area or may be taken away from the permit area and permanently disposed of in a facility approved by DWM such as a municipal solid waste disposal facility. 405 KAR 8:030/8:040 Section 24(2)(b)4 and 24(3)(b)5 require the application for a DSMRE permit to detail any plans for removal, handling, transportation, storage, and disposal of noncoal mine waste on the permit area.

A disposal site in the permit area must be designed and constructed to ensure that leachate and drainage do not degrade surface or ground water, which may require use of clay liners and/or synthetic liners. The waste must be routinely compacted and covered to prevent combustion and to prevent the waste from being windblown. At least two feet of soil cover must be placed on the completed disposal site, slopes must be stabilized, and the site must be revegetated in accordance with 405 KAR 16:200 and 18:200. The disposal site must be operated in accordance with all applicable federal, state and local requirements. The waste must not be placed in refuse piles or impounding structures. Excavations for waste disposal must not be located within eight feet of any coal outcrop or coal storage area.

Burning. Except for land-clearing debris, wastes must not be disposed of by open burning.

Free liquids. 405 KAR 16:150 and 18:150 require that disposal sites be designed and constructed to ensure that leachate and surface drainage do not degrade surface water or ground water. Free liquids are liquids that readily separate from the solid portion of a waste under ambient temperature and pressure, including liquids in containers. Permittees and operators must not dump free liquids into backfills or place containers with free liquids in the disposal area unless such disposal is specifically approved in the permit. Because free liquids have the potential to readily enter and degrade ground water and surface water, permit applicants proposing to dispose of free liquids on the permit area should be prepared to design the disposal area to include impermeable barriers such as clay liners and/or synthetic liners. Whatever design the applicant proposes for disposal areas that will receive free liquids, the design must be fully set forth in the permit application and must demonstrate to the satisfaction of DSMRE that leachate and surface drainage will not degrade surface water and ground water. Additional monitoring of surface water and ground water may be required for disposal areas that will receive free liquids. DSMRE expects to consult with DWM for technical assistance on these applications.

Lead acid batteries. KRS 224.50 410, 413. Lead acid batteries must not be disposed of on the permit area or be incinerated. They must be disposed of through designated entities including wholesale or retail sellers of new batteries, battery recycling facilities, secondary lead smelters, and collection centers that deliver to recycling facilities or smelters. Also see the section below on hazardous waste.

Used oil. KRS 224.50-545. Used oils must not be disposed of in any way that might permit them to enter surface or ground water and must not be incinerated except for energy generating purposes. A simple and effective means of handling used oil is through collectors of such oil for recycling.

The term "used oil" includes any oil that has become unsuitable for its original purpose due to the presence of impurities or loss of original properties. The term includes not only oil that has been drained from machinery, but also oil that has not been placed in a machine but has been contaminated or has lost its original properties. Further, both used oil and unused oil generally test hazardous.

Used oil is exempt from the hazardous waste regulations only if it is collected for recycling or burned for energy recovery. It cannot be used for road oiling unless it has been analyzed for hazardous waste characteristics and the analyses show the oil is not a hazardous waste. If used for road oiling, a copy of the laboratory results must be carried in the truck, and the oil must not migrate to surface water or ground water, either immediately or over time. The requirements of the hazardous waste program and the used oil provisions of KRS 224.50-545 effectively preclude the disposal of any oil at the mine site. Also see the section below on hazardous waste.

Oil filters must be recycled, handled as hazardous waste, or crushed and drained and taken to an appropriately permitted landfill. They may be disposed of onsite only if they are crushed and drained, analyzed for hazardous waste characteristics (e.g., using TCLP), determined not to be a hazardous waste, and placed in the backfill using a methodology that precludes the generation of leachate. Note that oil filters that areterne coated are considered to be hazardous and cannot be disposed of onsite, regardless of the processing or disposal practices.

Waste tires. KRS 224.50-820 to 224.50-846. Not more than 100 used tires may be accumulated without registering with DWM and certifying compliance with the waste tire control program requirements. If stored, the tires must be covered with a tarp or otherwise managed to prevent the entrapment of water. Tires must not be disposed of in the permit area unless they are shredded or otherwise processed (at least quartering is recommended) so they will not hold air and water. Off-road tires in the 1200 series (approximately 200 pounds) or larger, which are too large for most cutting and shredding equipment, may be processed by placing them whole on the pit floor and filling them with clay, sand, or other fine grained material, which must then be compacted. Spoil must then be placed on top of the tire (at least 40 feet is recommended). Solid tires, such as those from forklifts, also may be buried whole. Regardless of type, tires must not be burned except at an incinerator licensed to do so.

Transformers and other oil filled electrical equipment. 40 CFR Part 761 (federal regulations). Storage and disposal of these wastes are regulated under stringent standards. In most instances, disposal of such wastes cannot occur on the minesite. Please refer to 40 CFR Part 761 or contact DWM for additional information.

Hazardous Waste

Hazardous waste is regulated under KRS 224.43-610, -614, 224.46, and 401 KAR Chapters 30-40. ***No hazardous waste may be burned or disposed of on the permit area unless a permit has been obtained from DWM and DSMRE specifically for disposal of hazardous waste on the minesite.*** Hazardous waste generated at a coal mine should be sent to an existing facility

authorized to handle that waste. Even if hazardous waste is taken away from the minesite, a generator of hazardous waste must comply with certain registration, storage, and reporting requirements. The specific requirements depend on the type of hazardous waste and the amount generated each month.

Hazardous waste generated onsite can be stored onsite in containers or tanks that meet the standards of 401 KAR Chapter 35. These wastes may be stored up to 90-210 days, depending on the type and amount of waste generated. Hazardous waste generators are also required to have training plans and contingency plans.

The coal mine permittee and operator have the burden of determining whether any of the waste generated at the mine is hazardous. 401 KAR Chapter 31 sets forth criteria for identifying hazardous waste. Some wastes must be tested to determine if they are hazardous, but other wastes are specifically listed as hazardous and need not be tested. Certain specific hazardous wastes are listed in 401 KAR 31:040. The list includes certain spent solvents and possibly other materials that can be generated in mining.

Further, wastes can be hazardous because they are ignitable, corrosive, reactive, or toxic. 401 KAR 31:030 Sections 2-5 list the properties that determine the characteristics of ignitability, corrosivity, reactivity and toxicity, respectively, and provide test methods to determine if a waste has any of these properties. Used solvents, such as those associated with parts washers, are usually ignitable and toxic. Lead acid batteries are generally hazardous because of corrosive acids, and flashlight batteries are generally hazardous due to the presence of cadmium and mercury. Unused explosives may be hazardous because of their reactive properties. Paints, oils and pesticides are often hazardous because of their toxicity.

Wastes that exhibit toxicity are important concerns for mining operations because of their potential threat to ground water and surface water. The standard method to determine if a waste may leach toxic concentrations of various constituents is a laboratory testing procedure called the "Toxicity Characteristic Leaching Procedure" (TCLP). Please contact the DWM or your consulting firm if you need additional information on TCLP or other test procedures.

Conclusion

As you can see from the foregoing discussion, sorting out your responsibilities for proper handling of wastes can get complicated. This RAM can provide only limited information on this extremely important subject. Please read and understand the applicable laws and regulations thoroughly, and do not hesitate to contact DSMRE or DWM as appropriate.

The Division of Waste Management can provide further information about how to determine if any of your waste materials are hazardous, about locations of authorized sites for disposal of hazardous waste, about registered haulers of hazardous waste, and about registered collectors of recyclable materials such as batteries, tires and oils. If you have questions about these or any other aspect of waste disposal that involves DWM, please do not hesitate to contact DWM at (502) 564-6716.

Requests to purchase informational copies of DWM regulations should be sent to: REGREQ, Division of Waste Management, 14 Reilly Road, Frankfort, KY 40601. Telephone (502) 564-6716. Before ordering regulations, please contact DWM to determine the cost of the regulations.