

9441.1987(52)

TREATMENT AND DISPOSAL METHODS FOR LOW-LEVEL WASTES THAT
CONTAIN UNCONTAMINATED LEAD USED AS SHIELDING, SURFACE
CONTAMINATED LEAD, AND ACTIVATED LEAD

June 26, 1987

Mr. Terry Husseman
Chair, Northwest Interstate
Compact Committee
Washington Department of Ecology
PV-11
Olympia, Washington 98504

Dear Mr. Husseman:

Thank you for your letter of May 28 in which you requested guidance on treatment and disposal methods for low-level waste that contains uncontaminated lead used as shielding, surface contaminated lead and activated lead.

First, I would like to address activated or radioactive lead. As you know, lead is not a naturally occurring radionuclide. Lead may become radioactive or activated as a result of neutron bombardment while being used as shielding in nuclear power plants, for example. Such activated lead, if short-lived, may be stored to allow radioactive decay prior to disposal. The resultant non-activated or elemental lead may be disposed of as hazardous waste in a hazardous waste disposal facility. If storage for decay is impractical, the activated lead must be managed as mixed waste. You should note, however, that in States authorized to administer the Federal mixed waste program or in States with Federally administered hazardous waste programs, any storage of mixed waste in excess of ninety days for generators and ten days for transfer facilities would require a Resource Conservation and Recovery Act (RCRA) permit. Similarly, designated storage facilities must obtain a RCRA permit.

Lead which is contaminated on the surface may be decontaminated by a number of commercially available processes. However, because lead is malleable and easily gouged or pitted, radioactive contamination is often not limited to the surface and may be imbedded in the lead itself. Where decontamination is incomplete or contraindicated because of occupational health

considerations, the lead must be managed as a mixed waste. Also, EPA's Office of Radiation Programs is developing a standard which will delineate levels of radiation which are below regulatory concern (BRC). Once BRC levels have been established, it may be possible to dispose of lead which exhibits BRC levels of radioactive contamination as a hazardous waste.

Lead containers or container liners which are used as shielding in low-level waste disposal operations post a unique problem. Containers or container liners are not regulated by the Agency (See 40 CFR 261.7) nor would they be a waste because they are fulfilling intended uses. ((CFR 40 261.2(c)(1)(ii)). In this instance, containers or liners may be analogous to commercial chemical products (e.g., pesticides) where as a

product, their normal use is placement on the land. Therefore, lead whose primary use is shielding in low-level waste disposal operations is not subject to Federal hazardous waste regulations when placed on the land as part of its normal commercial use.

Encapsulation represents a viable mechanism for mitigating the hazardous waste characteristic lead may exhibit upon EP toxicity testing only in specific circumstances. The EP toxicity test procedure requires grinding the waste into pieces not greater than one square centimeter in size prior to extraction. Therefore, encapsulation would result in a non-hazardous waste only in those instances where it could be demonstrated that the encapsulation process results in a product that would not degrade after disposal, (i.e., is resistant to degradation or fracturing when placed in the land disposal environment). In such instances, you could petition the Agency to waive the EP toxicity test requirement. Additionally, the Agency is revising existing EP toxicity test procedures. Work is underway to develop procedures for evaluating a waste's long term physical stability. These procedures may then be used to demonstrate that the encapsulated material will not degrade and allow testing of an intact lead brick or the like, for example.

The agency has not evaluated specific technologies for encapsulation of lead or other wastes, nor has the Agency performed specific laboratory analyses of materials to determine their resistance to EP toxicity test. However, a polymer or some other material which maintains its integrity under environmental stress would seem to be suitable.

-3-

In view of the urgency of the lead issue, it may be prudent to explore the feasibility of obtaining both a Nuclear Regulatory Commission license and an EPA permit to provide for the disposal of mixed waste.

If I can be of further assistance, do not hesitate to contact me.

Sincerely yours,

Marcia E. Williams, Director
Office of Solid Waste

cc: Alan Corson
Floyd Galpin
Ken Shuster
bcc: Jim Michael
Betty Shackelford

RO 12956