



Complying with Land Disposal Restrictions (LDR) for CERCLA Remedial Actions Involving Contaminated Soil and Debris

BACKGROUND:	CERCLA Sect. 121(e) requires that remedial actions must comply with at least the minimum standards of all "applicable or relevant and appropriate requirements" (ARARs) of Federal and State laws. EPA has determined that RCRA land disposal restrictions may be ARAR for certain CERCLA remedial actions involving soil and debris. This means that soil and debris contaminated with restricted wastes cannot be land disposed if these wastes have not attained the treatment standards set by EPA for a specified waste. However, restricted wastes may be land disposed if they are the subject of a case-by-case extension, national capacity variance, or successful "no migration" petition. RCRA LDR treatment standards are based on "Best Demonstrated Available Technology" (BDAT), not on health-based concentrations. Because the treatment of the soil and debris matrix presents technological difficulties not yet addressed by EPA (BDAT standards are generally set for industrial process wastes), compliance options such as obtaining a Treatability Variance, are available and will generally be necessary for soil and debris wastes. In the March 8, 1990, revisions to the National Contingency Plan (NCP) for CERCLA implementation, EPA provides important information for CERCLA project managers regarding LDR compliance, particularly for obtaining a treatability variance for land disposal of contaminated soil and debris.
STATUTES:	Comprehensive Environmental Response Compensation and Liability Act (CERCLA), Section 121; Resource Conservation and Recovery Act (RCRA), Section 3004.
REGULATIONS:	40 CFR 268.44(h), 53 FR 31199-31200, August 17, 1988.
REFERENCE:	EH-231 Memorandum, September 25, 1989; Subject: RCRA Land Disposal Restriction Guides for CERCLA Cleanup Actions; Preamble to National Oil and Hazardous Substances Pollution Contingency Plan, 55 FR 8760-8762, March 8, 1990; EH-231 Memorandum, August 21, 1990; Subject: Summary of Final National Contingency Plan and discussion of issues of concern to DOE; EH-231 Catalog of CERCLA ARARs Fact Sheets, July 1990.

Why must RCRA Land Disposal Restrictions be considered early in environmental restoration project planning?

It is extremely important to determine whether a CERCLA remedial action is subject to LDR as early as possible in the Remedial Investigation/Feasibility Study (RI/FS) process (e.g., during the project scoping or site characterization stage). Compliance with LDR may affect DOE's ability to land dispose restricted wastes, and could end up "driving" an entire project if not planned sufficiently in advance. This is especially true at sites involving large volumes of waste, such as sites with contaminated soils and debris, which have relatively low levels of contamination and may not be amenable to LDR treatment technologies and requirements.

If the need for LDR compliance arises much later than the initial screening of the alternatives (which can occur concurrently with site characterization), or after treatability studies are initiated, there could be significant impacts on schedules and budgets if the remedial project needs to be redesigned or if additional alternatives to land disposal need to be evaluated later in the process in order to comply with LDR.

When are CERCLA actions subject to LDR?

Generally, *any* CERCLA response actions involving land disposal of known or suspected hazardous wastes, including mixed waste, are subject (after the appropriate effective date) to LDR when a requirement is determined to be "applicable or relevant and appropriate" to the action.

When CERCLA actions involve restricted RCRA listed or characteristic wastes, LDR may be "applicable" (*see below*). When the origin of the hazardous constituents in a waste is unknown and the waste is sufficiently similar to listed or characteristic wastes such that the requirement is well suited to the action, LDR are potentially "relevant and appropriate."

What about CERCLA actions involving soil and debris?

The prerequisites for LDR "applicability" to CERCLA actions involving land disposal of contaminated soil and debris are: (1) the action involves land disposal which constitutes "placement;" (2) the substance being placed is a RCRA listed or characteristic waste; and (3) the action occurs after the applicable LDR effective date.

What do the prerequisite terms mean?

"*Land disposal*" includes, but is not limited to any "placement" of waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, and concrete bunker or vault [RCRA Section 3004(k)].

"*Placement*" (synonymous with "land disposal") includes consolidation of RCRA wastes outside of an area of contamination (AOC) and treatment in a separate unit (e.g., incinerator or tank) with replacement to the AOC. Both of these actions meet the statutory definitions of "placement" or "disposal." However, wastes that are consolidated within the AOC, *in-situ* treatment, or capping of wastes do not constitute placement or disposal.

Listed or characteristic waste: In most cases, it is necessary to know the origin of the waste to determine whether it is a listed waste. EPA advises that if such documentation is lacking, the lead agency may assume for CERCLA response actions that it is not a listed waste. EPA also advises that project managers may use appropriate tests to determine whether a waste exhibits a characteristic, or may use best professional judgement to determine whether testing is necessary by “applying knowledge of the hazard characteristic in light of the materials or processes used.”

What are the effective dates?

The LDR effective dates have been phased in over a period of several years. The effective dates are the dates after which persons who treat, store or dispose of wastes must comply with restrictions or prohibitions on the land disposal (or storage) of specific waste types. **For planning purposes**, it is important to note that LDR effective dates (for contaminated soil and debris at CERCLA remedial action sites) refer to the date of “placement,” not the date of signature on a decision document, such as a Record of Decision (ROD), which incorporates land disposal as an element of the action. Therefore, land disposal restrictions could affect the implementation of a remedy involving “placement” even though the ROD implementing such a remedy is issued prior to the date of “placement.”

Almost all listed or characteristic wastes are now subject to LDR. However, there are some important exceptions for certain wastes, specifically Radioactive Mixed Waste (RMW) containing Thirds waste, including soil and debris wastes from CERCLA response or RCRA corrective actions.

What are the effective dates for soil and debris wastes?

The effective date for soil and debris containing spent solvents, dioxins, and California list wastes from CERCLA response and RCRA cleanup actions has been extended until November 8, 1990, due to a shortfall in national capacity for treating such waste. (*NOTE:* soil and debris wastes contaminated with certain First Third wastes have an effective date of August 8, 1990; soil and debris contaminated with certain Second Third wastes have an effective date of June 8, 1991; soil and debris contaminated with certain Third Third wastes have an effective date of May 8, 1992 — these are generally the Third wastes whose associated treatment standard is based on incineration.)

After November 8, 1990, soil and debris from CERCLA response or RCRA cleanup actions contaminated with RMW may continue to be land disposed until May 8, 1992 under a national capacity variance provided that any spent solvents, dioxins, and California list wastes, which may be contained in the RMW, meet the BDAT standard established for the spent solvent, dioxin, or California List waste (the presence of these special waste categories at levels that do not meet established BDAT standards or exceed the statutory prohibition levels renders the soil and debris subject to LDR, regardless of RMW content).

When such wastes are to be land disposed in surface impoundments or landfills under a “soils and debris-RMW” national capacity variance, the units must comply with RCRA Subtitle C minimum technology requirements (i.e., double

liner, leachate collection system, and groundwater monitoring) under RCRA 3005(j)(2) or (j)(4), or the receiving units must have a retrofitting waiver under RCRA 3004(o)(2) or 3005(j) to be considered equivalent to the minimum technology requirements.

Are the LDR BDAT standards “appropriate” for CERCLA actions involving soil and debris?

The revised NCP indicates that EPA has had substantial problems in achieving the LDR noncombustion BDAT standards for contaminated soil and debris, which at CERCLA sites is usually found in large volumes containing relatively low levels of contamination. Additionally, EPA considers incineration of contaminated soil and debris to be inappropriate or infeasible under circumstances associated with many Superfund sites. EPA has determined that until specific standards for soils and debris are developed, current BDAT standards are generally *inappropriate* or unachievable for soil and debris from CERCLA response actions and RCRA corrective actions and closures.

Instead, EPA presumes that, because contaminated soil and debris is significantly different from the wastes evaluated by EPA in establishing the BDAT standards, it generally cannot be treated in accordance with those standards and, thus, qualifies for a treatability variance from those standards under 40 CFR 268.44.

How should DOE comply with LDR for CERCLA soil and debris in light of EPA’s findings on BDAT standards for this medium?

When remedial actions involving soils and debris must comply with LDR, DOE Environmental Restoration Program Managers (ERPMS) should assume that a treatability variance from BDAT treatment standards is required to comply with LDR for contaminated soil and debris. When doing so for a CERCLA action, they need *not* demonstrate on a case-by-case basis that BDAT standards for the prohibited or restricted soil and debris wastes are inappropriate or not achievable. Instead, ERPMS may meet the appropriate levels or percentage reductions in the currently available guidance, Superfund LDR Guide #6A (2nd edition), “Obtaining a Soil and Debris Treatability Variance for Remedial Actions,” EPA OSWER Directive 9347.3-06FS, September, 1990.

While a separate petition process is not needed, the justification for such a variance should be included in the Proposed Plan and Record of Decision when treatment of soil and debris is an element of a CERCLA remedial action.

Questions of policy or questions requiring policy decisions will not be dealt with in EH-231 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to John Bascietto, RCRA/CERCLA Division, EH-231, (202) 586-7917.