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TESTING REQUIREMENTS AND SOLIDIFICATION ISSUES UNDER LAND
DISPOSAL REQUIREMENTS

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

APR -5 1988

MEMORANDUM

SUBJECT: Facility Testing Requirements and Solidification
Issues Under the Land Disposal Restrictions Rules

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste

TO: Robert L. Duprey, Director
Hazardous Waste Management Division, 8 HWM
Region VIII

This memo is in response to your memorandum of February 4, 1988 to Marcia Williams requesting clarification of two key provisions of the Land Disposal Restrictions Rules. The issues are related to the testing requirements under 40 CFR 268.7 and the use of solidification/stabilization prior to landfilling.

Issue 1 What are the exact testing requirements (appropriate sampling conditions, analytical methods, frequency and data comparisons) under 40 CFR 268.7(c) for off-site commercial disposal facilities receiving land disposal restricted wastes.

As you note, section 268.7 itself does not specify the frequency of testing required for disposal facilities receiving wastes from off-site (nor does it specify the frequency of testing required for treatment facilities or on-site disposal facilities). In particular, the requirements in section 268.7 only specify the frequency of testing required by generators, treatment facilities or land disposal facilities by reference to the facility waste analysis plan. Specifically, section 268.7(c) requires that the owner or operator of the treatment or land disposal facility must test the waste according to the frequency specified in their waste analysis plan. Those plans may allow

the data to be supplied by the generator or treatment facility, such determinations being the subject of negotiations between the permit writer and the owner/operator during the development of the permit.

I would note that the December 1, 1987 Codification rule (52 FR 45788) does allow the permits to be reopened to incorporate HSWA provisions, and this could be used to reopen and modify the Waste Analysis Plans to require testing at a specified frequency.

We are aware of the potential cost of testing for not only the disposal facility, but also for the treatment facility and the generator. We are also aware of the need for adequate data for compliance monitoring and enforcement purposes. Unfortunately, these factors work in opposite directions, one indicating the need for more testing and the other the need to minimize the testing burden. At the time the rules were written, we felt that the individual permit writer would be in the best situation to determine on a case by case basis the appropriate frequency of testing that would best balance those opposing factors while remaining in compliance with the general parameters outlined under section 264.13 and section 265.13. This point is also addressed at 52 FR 21012, Col 2 (June 4, 1987).

Issue 2 Which wastes restricted under 40 CFR Part 268 Subpart C may be treated at an off-site commercial facility utilizing stabilization/solidification prior to landfilling.

The Agency has not specified methods of treatment for restricted wastes with the exception of PCB and most HOC wastes under the California List (which must be incinerated). For spent solvent and dioxin containing wastes covered by the November 7, 1986 rule (51 FR 40572), the Agency has specified performance standards based on a concentration of a hazardous constituent in an extract generated using the Toxicity Characteristic Leaching Procedure (Appendix I to 40 CFR Part 268). While the treatment standards were based on incineration of the wastes, the rules do not prohibit stabilization/solidification in order to meet the treatment standard. On the other hand, we do not encourage the solidification of wastes containing high levels of organic constituents.

California List wastes may not be placed in land disposal facilities as liquids with concentrations exceeding the statutory levels. With the exception of PCBs and HOCs, stabilization/solidification may be used to treat the wastes, converting them to a non-liquid form, after which they may be placed in land disposal units. However, I would call your attention to the preamble language in the final California List rule (July 8, 1987, 51 FR 25760) on page 25778 dealing with dilution, where we note that:

"Where such physical or chemical changes do not occur, or where hazardous constituents (e.g., metals) are not otherwise immobilized, "solidification" techniques may possibly be considered dilution as a substitute for adequate treatment within the meaning of the section 268.3 prohibition."

While this language is not definitive, it does indicate that solidification by simple absorption is not what was intended.

Further, the preamble goes on to note that even where solidification techniques are not considered dilution, the liquids in landfills prohibits remain applicable, and that these provisions prohibit certain types of absorbency. The specific document referred to is the "Statutory Interpretative Guidance on the Placement of Bulk Liquid Hazardous Wastes in Landfills," OSWER Policy Directive #9487.00-2A, June 11, 1986.

Your memorandum raises several other issues with respect to the use of solidification that we have tried to address below.

On page 9 of the attachment to your letter, you state "Apparently, solidification may be an appropriate treatment methodology for F001-F005 solvent/solid/sludge mixtures and dilute wastewater HOCs (and F020-F028 dioxin wastes?)." We do not specify the methods that are used to meet the treatment standards. The Part 268 regulations do not prohibit solidification for either solvents or dioxins. As noted above, we are not advocating the solidification of wastes containing high concentrations of organic constituents. With respect to the dioxin containing wastes, sections 264.317, 264.343 and 265.352 all deal with special requirements for handling the F020-F023 and F026-F028 dioxin containing wastes, and to our knowledge,

there are no commercial facilities treating or disposing of these wastes in the United States.

Dilute HOC wastewaters, on the other hand, may not be solidified to take advantage of the two year extension of the effective date. If at the point of initial generation (i.e. when the waste first meets the Part 261 listing description or first exhibits a Part 261 characteristic of a hazardous waste), the wastewaters are greater than 1,000 mg/kg HOCs, solidification cannot be used to make the waste a non-liquid subject to the two year extension of the effective date. In such a case, the July 8, 1987 effective date attaches at the point of initial generation, and solidification can only be used if it is "treatment" and such treatment succeeds in lowering the concentration below the 1,000 mg/kg statutory prohibition level (which is applicable in the case of HOCs to both liquid and non-liquid hazardous wastes).

Section 268.41 does not require the use of the TCLP and GC/MS. In some cases, a total waste analysis could be used for the F001-F005 solvent to show compliance with the requirements of section 268.41. If the results of the total waste analysis are less than 20 times the applicable Table CCWE concentration, then the concentration in the waste extract cannot be greater than the Table CCWE concentration. We agree that the requirement in the TCLP that the waste be ground or crushed does limit the usefulness of stabilization for organics since no physical or chemical reaction is likely to be occurring. This is not, in our view, an unfortunate result.

If the treatment standards or statutory levels are set as total waste concentrations, then the total waste must be analyzed, and not just an extract developed using the TCLP.

Finally, we are not aware of any easy surrogate tests that provide any realistic information about Table CCWE or California List HOC constituents. TOC and TOX tests do provide an upper limit in that if the TOC or TOX concentrations are below the relevant standard, then the waste must pass that standard, since the standards are based on a subset of the constituents measured by the TOC or TOX test. However, we realize that if the results of the tests are greater than the regulatory levels (e.g. 1,000 mg/kg HOCs), we still know nothing about the actual levels of the constituents of concern, which may in fact be below the

concentrations of concern.

If you have further questions, please contact Stephen Weil,
Chief of the Land Disposal Restrictions Branch, on FTS 382-4770.

cc: Regional Waste Management Division Directors
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