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constituents that could reasonably be expected to be present in the wastes. EPA also promulgated alternative treatment standards of incineration, fuel substitution, and recovery of organics for ignitable wastes. In addition, EPA established new precautionary measures to prevent emissions of volatile organic constituents or violent reactions during the process of diluting ignitable and reactive wastes.

5. Regulation of Toxicity Characteristic (TC) Wastes in the LDR Phase II Rule

On March 29, 1990, EPA promulgated a rule that identified organic constituents (in addition to existing EP metals and pesticide constituents) and levels at which a waste is considered hazardous based on the characteristic of toxicity (55 FR 11798). Because these wastes were identified as hazardous after the enactment date of HSWA in 1984, they were "newly identified wastes" for purposes of the LDR program. Included are wastes identified with the codes D012 through D043 based on the Toxicity Characteristic Leaching Procedure (TCLP), i.e., TC wastes. In the LDR Phase II final rule (59 FR 47982, September 19, 1994), EPA established treatment standards for each of these constituents if they are managed in systems other than those regulated under the CWA, those engaging in CWA-equivalent treatment prior to land disposal, and those injected into Class I deep injection wells regulated under the SDWA. In addition, because wastes exhibiting the TC can contain treatable levels of other hazardous constituents, EPA established treatment standards for the underlying hazardous constituents reasonably expected to be present in the waste. These rules are consistent with the Third Third opinion and adopt the same approach as the May 24, 1993 interim final rule.

Furthermore, as part of a regulatory response to implement the court's ruling, EPA required in the LDR Phase II final rule that hazardous constituents in two types of characteristic wasteshigh total organic carbon (TOC) ignitable liquids (D001) and halogenated pesticide wastes that exhibit the toxicity characteristic (D012-D017)-be fully treated before those wastes are disposed into any Class I nonhazardous injection well that does not have a no-migration variance. See 59 FR at 48013. Therefore, these wastes can no longer be legally diluted to remove the characteristic and then be injected into Class I nonhazardous injection wells.

6. Requirements of 1993 Settlement Agreement With CWM, et al.

This proposed rule continues to fulfill the requirements of the settlement agreement with the petitioners in CWM v. EPA. Today's rule proposes concentration-based treatment standards for the underlying hazardous constituents reasonably expected to be present in ignitable, corrosive, reactive and TC wastes managed in CWA and CWA-equivalent treatment systems, and injected into UIC Class I nonhazardous injection wells regulated under the SDWA. The settlement agreement calls for developing standards for ignitable and corrosive wastes only; however, the Agency believes that underlying hazardous constituents may also be present in reactive and toxic wastes, and is therefore proposing regulations for these wastestreams as well.

Today's rule also complies with the settlement agreement by describing and discussing the following option for implementing the opinion: the identification of underlying hazardous constituents that are not amenable to treatment in certain CWA centralized treatment systems, and the subsequent prohibition on the introduction of such nonamenable wastes into such systems.

II. EPA's Interpretation of the Third Third Opinion

EPA's action in this rulemaking is taken to implement key portions of the court's mandate in CWM v. EPA, the opinion vacating and remanding (among other things) EPA's rules allowing treatment standards for hazardous constituents in characteristic hazardous wastes to be achieved solely by diluting these constituents. EPA's initial view of the opinion is that it interprets the statute to require that hazardous constituents present in hazardous wastes at concentrations exceeding a minimize threat level to be treated so that they are destroyed, removed, or immobilized before the waste is land disposed. Some commenters to the May 24, 1993 interim final rule and the LDR Phase II proposed rule, however, have argued that dilution nevertheless can be utilized as the sole means of treating characteristic hazardous wastes, if dilution reduces hazardous constituent concentration levels to levels reflecting either performance of Best Demonstrated Available Technology (BDAT) or minimize threat levels. This argument is based largely on language in the court's opinion that treatment of hazardous constituents is required if, after dilution, hazardous constituents are present in concentrations sufficient to pose a threat to human health and the

environment. See, e.g., 976 F. 2d at 7, 17, 18, 19-20, 23. Some commenters have added the further argument that section 3004(m) requires that treatment "substantially reduce the toxicity of the waste", which is accomplished when dilution lowers hazardous constituents to BDAT levels.

If these arguments were accepted, it would mean that characteristic wastes could be disposed after dilution, without further treatment of hazardous constituents, provided sufficient dilution had occurred. Although this argument has been made chiefly by representatives of facilities engaged in underground injection, the argument is not limited to the injection context, or even to the context of characteristic wastes. Thus, if EPA accepted this argument, it would mean that any hazardous waste could be land disposed into any type of land disposal unit provided the waste was sufficiently diluted before land disposal, notwithstanding that the same volume of hazardous constituents as in the initial waste would be land disposed.

EPA does not accept this interpretation of the court's opinion or of the statute. In the Agency's view, the statute and opinion are best interpreted by requiring hazardous constituents in hazardous wastes to be treated so that hazardous constituents are destroyed, removed, or immobilized before land disposal. The Agency's basis for this conclusion is set out below.

A. Statutory Language

Section 3004(m)(1) requires EPA to establish, as a precondition to land disposal of hazardous waste, treatment standards "which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." Although the first prong of the test-"substantially diminish the toxicity of the waste"-conceivably is satisfied by dilution,¹ the treatment must not only diminish the waste's toxicity but also do so in a manner that minimizes shortterm and long-term harms to human health and the environment.²

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¹ If, for example, a wastewater starts out with cadmium concentrations exceeding 100 mg/l and is diluted so that cadmium is present at concentrations below the MCL of 0.1 mg/l, the toxicity of the waste has been diminished.

² "Treatment is required not only for purposes of protecting against the short-term or acute risks associated with the land disposal of hazardous wastes, but more importantly focuses on the longterm hazards associated with migration of the wastes and subsequent contamination of ground or surface water." 130 Cong. Rec. S9178 (July 25,