

## § 6924. Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities

### (a) In general

Not later than eighteen months after October 21, 1976, and after opportunity for public hearings and after consultation with appropriate Federal and State agencies, the Administrator shall promulgate regulations establishing such performance standards, applicable to owners and operators of facilities for the treatment, storage, or disposal of hazardous waste identified or listed under this subchapter, as may be necessary to protect human health and the environment. In establishing such standards the Administrator shall, where appropriate, distinguish in such standards between requirements appropriate for new facilities and for facilities in existence on the date of promulgation of such regulations. Such standards shall include, but need not be limited to, requirements respecting—

- (1) maintaining records of all hazardous wastes identified or listed under this chapter which is treated, stored, or disposed of, as the case may be, and the manner in which such wastes were treated, stored, or disposed of;
- (2) satisfactory reporting, monitoring, and inspection and compliance with the manifest system referred to in section 6922 (5) <sup>[1]</sup> of this title;
- (3) treatment, storage, or disposal of all such waste received by the facility pursuant to such operating methods, techniques, and practices as may be satisfactory to the Administrator;
- (4) the location, design, and construction of such hazardous waste treatment, disposal, or storage facilities;
- (5) contingency plans for effective action to minimize unanticipated damage from any treatment, storage, or disposal of any such hazardous waste;
- (6) the maintenance of operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, training for personnel, and financial responsibility (including financial responsibility for corrective action) as may be necessary or desirable; and
- (7) compliance with the requirements of section 6925 of this title respecting permits for treatment, storage, or disposal.

No private entity shall be precluded by reason of criteria established under paragraph (6) from the ownership or operation of facilities providing hazardous waste treatment, storage, or disposal services where such entity can provide assurances of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste.

### (b) Salt dome formations, salt bed formations, underground mines and caves

- (1) Effective on November 8, 1984, the placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as—
  - (A) the Administrator has determined, after notice and opportunity for hearings on the record in the affected areas, that such placement is protective of human health and the environment;
  - (B) the Administrator has promulgated performance and permitting standards for such facilities under this subchapter, and;
  - (C) a permit has been issued under section 6925 (c) of this title for the facility concerned.
- (2) Effective on November 8, 1984, the placement of any hazardous waste other than a hazardous waste referred to in paragraph (1) in a salt dome formation, salt bed formation, underground mine, or cave is prohibited until such time as a permit has been issued under section 6925 (c) of this title for the facility concerned.
- (3) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) of this section applies shall affect the prohibition contained in paragraph (1) or (2) of this subsection.
- (4) Nothing in this subsection shall apply to the Department of Energy Waste Isolation Pilot Project in New Mexico.

### (c) Liquids in landfills

- (1) Effective 6 months after November 8, 1984, the placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not absorbents have been added) in any landfill is prohibited. Prior to such date the requirements (as in effect on April 30, 1983) promulgated under this section by the Administrator regarding liquid hazardous waste shall remain in force and effect to the extent such requirements are applicable to the placement of bulk or noncontainerized liquid hazardous waste, or free liquids contained in hazardous waste, in landfills.
- (2) Not later than fifteen months after November 8, 1984, the Administrator shall promulgate final regulations which—
  - (A) minimize the disposal of containerized liquid hazardous waste in landfills, and
  - (B) minimize the presence of free liquids in containerized hazardous waste to be disposed of in landfills.

Such regulations shall also prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations. Prior to the date on which such final regulations take effect, the requirements (as in effect on April 30, 1983) promulgated under this section by the Administrator shall remain in force and effect to the extent such requirements are applicable to the disposal of containerized liquid hazardous waste, or free liquids contained in hazardous waste, in landfills.

(3) Effective twelve months after November 8, 1984, the placement of any liquid which is not a hazardous waste in a landfill for which a permit is required under section 6925 (c) of this title or which is operating pursuant to interim status granted under section 6925 (e) of this title is prohibited unless the owner or operator of such landfill demonstrates to the Administrator, or the Administrator determines, that—

- (A) the only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted under section 6925 (c) of this title or operating pursuant to interim status under section 6925 (e) of this title, which contains, or may reasonably be anticipated to contain, hazardous waste; and
- (B) placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water.

As used in subparagraph (B), the term "underground source of drinking water" has the same meaning as provided in regulations under the Safe Drinking Water Act (title XIV of the Public Health Service Act) [42 U.S.C. 300f et seq.].

(4) No determination made by the Administrator under subsection (d), (e), or (g) of this section regarding any hazardous waste to which such subsection (d), (e), or (g) of this section applies shall affect the prohibition contained in paragraph (1) of this subsection.

**(d) Prohibitions on land disposal of specified wastes**

(1) Effective 32 months after November 8, 1984 (except as provided in subsection (f) of this section with respect to underground injection into deep injection wells), the land disposal of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition on one or more methods of land disposal of such waste is not required in order to protect human health and the environment for as long as the waste remains hazardous, taking into account—

- (A) the long-term uncertainties associated with land disposal,
- (B) the goal of managing hazardous waste in an appropriate manner in the first instance, and
- (C) the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous wastes and their hazardous constituents.

For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other than a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m) of this section), unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

(2) Paragraph (1) applies to the following hazardous wastes listed or identified under section 6921 of this title:

- (A) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/l.
- (B) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:
  - (i) arsenic and/or compounds (as As) 500 mg/l;
  - (ii) cadmium and/or compounds (as Cd) 100 mg/l;
  - (iii) chromium (VI and/or compounds (as Cr VI)) 500 mg/l;
  - (iv) lead and/or compounds (as Pb) 500 mg/l;
  - (v) mercury and/or compounds (as Hg) 20 mg/l;
  - (vi) nickel and/or compounds (as Ni) 134 mg/l;
  - (vii) selenium and/or compounds (as Se) 100 mg/l; and
  - (viii) thallium and/or compounds (as Th) 130 mg/l.
- (C) Liquid hazardous waste having a pH less than or equal to two (2.0).
- (D) Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 50 ppm.
- (E) Hazardous wastes containing halogenated organic compounds in total concentration greater than or equal to 1,000 mg/kg.

When necessary to protect human health and the environment, the Administrator shall substitute more stringent concentration levels than the levels specified in subparagraphs (A) through (E).

(3) During the period ending forty-eight months after November 8, 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 9604 or 9606 of this title or a corrective action required under this subchapter.

**(e) Solvents and dioxins**

(1) Effective twenty-four months after November 8, 1984 (except as provided in subsection (f) of this section with respect to underground injection into deep injection wells), the land disposal of the hazardous wastes referred to in paragraph (2) is prohibited unless the Administrator determines the prohibition of one or more methods of land disposal of such waste is not required in order to protect human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraph (A) through (C) of subsection (d)(1) of this section. For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment for a hazardous waste referred to in paragraph (2) (other

than a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m) of this section), unless upon application by an interested person it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.

(2) The hazardous wastes to which the prohibition under paragraph (1) applies are as follows—

(A) dioxin-containing hazardous wastes numbered F020, F021, F022, and F023 (as referred to in the proposed rule published by the Administrator in the Federal Register for April 4, 1983), and

(B) those hazardous wastes numbered F001, F002, F003, F004, and F005 in regulations promulgated by the Administrator under section 6921 of this title (40 C.F.R. 261.31 (July 1, 1983)), as those regulations are in effect on July 1, 1983.

(3) During the period ending forty-eight months after November 8, 1984, this subsection shall not apply to any disposal of contaminated soil or debris resulting from a response action taken under section 9604 or 9606 of this title or a corrective action required under this subchapter.

**(f) Disposal into deep injection wells; specified subsection (d) wastes; solvents and dioxins**

(1) Not later than forty-five months after November 8, 1984, the Administrator shall complete a review of the disposal of all hazardous wastes referred to in paragraph (2) of subsection (d) of this section and in paragraph (2) of subsection (e) of this section by underground injection into deep injection wells.

(2) Within forty-five months after November 8, 1984, the Administrator shall make a determination regarding the disposal by underground injection into deep injection wells of the hazardous wastes referred to in paragraph (2) of subsection (d) of this section and the hazardous wastes referred to in paragraph (2) of subsection (e) of this section. The Administrator shall promulgate final regulations prohibiting the disposal of such wastes into such wells if it may reasonably be determined that such disposal may not be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraphs (A) through (C) of subsection (d)(1) of this section. In promulgating such regulations, the Administrator shall consider each hazardous waste referred to in paragraph (2) of subsection (d) of this section or in paragraph (2) of subsection (e) of this section which is prohibited from disposal into such wells by any State.

(3) If the Administrator fails to make a determination under paragraph (2) for any hazardous waste referred to in paragraph (2) of subsection (d) of this section or in paragraph (2) of subsection (e) of this section within forty-five months after November 8, 1984, such hazardous waste shall be prohibited from disposal into any deep injection well.

(4) As used in this subsection, the term "deep injection well" means a well used for the underground injection of hazardous waste other than a well to which section 6979a (a) <sup>[2]</sup> of this title applies.

**(g) Additional land disposal prohibition determinations**

(1) Not later than twenty-four months after November 8, 1984, the Administrator shall submit a schedule to Congress for—

(A) reviewing all hazardous wastes listed (as of November 8, 1984) under section 6921 of this title other than those wastes which are referred to in subsection (d) or (e) of this section; and

(B) taking action under paragraph (5) of this subsection with respect to each such hazardous waste.

(2) The Administrator shall base the schedule on a ranking of such listed wastes considering their intrinsic hazard and their volume such that decisions regarding the land disposal of high volume hazardous wastes with high intrinsic hazard shall, to the maximum extent possible, be made by the date forty-five months after November 8, 1984. Decisions regarding low volume hazardous wastes with lower intrinsic hazard shall be made by the date sixty-six months after November 8, 1984.

(3) The preparation and submission of the schedule under this subsection shall not be subject to the Paperwork Reduction Act of 1980. <sup>[2]</sup> No hearing on the record shall be required for purposes of preparation or submission of the schedule. The schedule shall not be subject to judicial review.

(4) The schedule under this subsection shall require that the Administrator shall promulgate regulations in accordance with paragraph (5) or make a determination under paragraph (5)—

(A) for at least one-third of all hazardous wastes referred to in paragraph (1) by the date forty-five months after November 8, 1984;

(B) for at least two-thirds of all such listed wastes by the date fifty-five months after November 8, 1984; and

(C) for all such listed wastes and for all hazardous wastes identified under section 6921 of this title by the date sixty-six months after November 8, 1984.

In the case of any hazardous waste identified or listed under section 6921 of this title after November 8, 1984, the Administrator shall determine whether such waste shall be prohibited from one or more methods of land disposal in accordance with paragraph (5) within six months after the date of such identification or listing.

(5) Not later than the date specified in the schedule published under this subsection, the Administrator shall promulgate final regulations prohibiting one or more methods of land disposal of the hazardous wastes listed on such schedule except for methods of land disposal which the Administrator determines will be protective of human health and the environment for as long as the waste remains hazardous, taking into account the factors referred to in subparagraphs (A) through (C) of subsection (d)(1) of this section. For the purposes of this paragraph, a method of land disposal may not be determined to be protective of human health and the environment (except with respect to a hazardous waste which has complied with the pretreatment regulations promulgated under subsection (m) of this section) unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as

long as the wastes remain hazardous.

**(6)**

**(A)** If the Administrator fails (by the date forty-five months after November 8, 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first one-third of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

**(i)** such facility is in compliance with the requirements of subsection (o) of this section which are applicable to new facilities (relating to minimum technological requirements); and

**(ii)** prior to such disposal, the generator has certified to the Administrator that such generator has investigated the availability of treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

**(B)** If the Administrator fails (by the date 55 months after November 8, 1984) to promulgate regulations or make a determination under paragraph (5) for any hazardous waste which is included in the first two-thirds of the schedule published under this subsection, such hazardous waste may be disposed of in a landfill or surface impoundment only if—

**(i)** such facility is in compliance with the requirements of subsection (o) of this section which are applicable to new facilities (relating to minimum technological requirements); and

**(ii)** prior to such disposal, the generator has certified to the Administrator that such generator has investigated the availability of treatment capacity and has determined that the use of such landfill or surface impoundment is the only practical alternative to treatment currently available to the generator.

The prohibition contained in this subparagraph shall continue to apply until the Administrator promulgates regulations or makes a determination under paragraph (5) for the waste concerned.

**(C)** If the Administrator fails to promulgate regulations, or make a determination under paragraph (5) for any hazardous waste referred to in paragraph (1) within 66 months after November 8, 1984, such hazardous waste shall be prohibited from land disposal.

**(7)** Solid waste identified as hazardous based solely on one or more characteristics shall not be subject to this subsection, any prohibitions under subsection (d), (e), or (f) of this section, or any requirement promulgated under subsection (m) of this section (other than any applicable specific methods of treatment, as provided in paragraph (8)) if the waste—

**(A)** is treated in a treatment system that subsequently discharges to waters of the United States pursuant to a permit issued under section 1342 of title 33, treated for the purposes of the pretreatment requirements of section 1317 of title 33, or treated in a zero discharge system that, prior to any permanent land disposal, engages in treatment that is equivalent to treatment required under section 1342 of title 33 for discharges to waters of the United States, as determined by the Administrator; and

**(B)** no longer exhibits a hazardous characteristic prior to management in any land-based solid waste management unit.

**(8)** Solid waste that otherwise qualifies under paragraph (7) shall nevertheless be required to meet any applicable specific methods of treatment specified for such waste by the Administrator under subsection (m) of this section, including those specified in the rule promulgated by the Administrator June 1, 1990, prior to management in a land-based unit as part of a treatment system specified in paragraph (7)(A). No solid waste may qualify under paragraph (7) that would generate toxic gases, vapors, or fumes due to the presence of cyanide when exposed to pH conditions between 2.0 and 12.5.

**(9)** Solid waste identified as hazardous based on one or more characteristics alone shall not be subject to this subsection, any prohibitions under subsection (d), (e), or (f) of this section, or any requirement promulgated under subsection (m) of this section if the waste no longer exhibits a hazardous characteristic at the point of injection in any Class I injection well permitted under section 300h-1 of this title.

**(10)** Not later than five years after March 26, 1996, the Administrator shall complete a study of hazardous waste managed pursuant to paragraph (7) or (9) to characterize the risks to human health or the environment associated with such management. In conducting this study, the Administrator shall evaluate the extent to which risks are adequately addressed under existing State or Federal programs and whether unaddressed risks could be better addressed under such laws or programs. Upon receipt of additional information or upon completion of such study and as necessary to protect human health and the environment, the Administrator may impose additional requirements under existing Federal laws, including subsection (m)(1) of this section, or rely on other State or Federal programs or authorities to address such risks. In promulgating any treatment standards pursuant to subsection (m)(1) of this section under the previous sentence, the Administrator shall take into account the extent to which treatment is occurring in land-based units as part of a treatment system specified in paragraph (7)(A).

**(11)** Nothing in paragraph (7) or (9) shall be interpreted or applied to restrict any inspection or enforcement authority under the provisions of this chapter.

**(h) Variance from land disposal prohibitions**

**(1)** A prohibition in regulations under subsection (d), (e), (f), or (g) of this section shall be effective immediately upon promulgation.

**(2)** The Administrator may establish an effective date different from the effective date which would otherwise apply under subsection (d), (e), (f), or (g) of this section with respect to a specific hazardous waste which is subject to a prohibition under subsection (d), (e), (f), or (g) of this section or under regulations under subsection (d), (e), (f), or (g) of this section. Any such other effective date shall be established on the basis of the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. Any such other effective date shall in no event be later than 2 years after the

effective date of the prohibition which would otherwise apply under subsection (d), (e), (f), or (g) of this section.

(3) The Administrator, after notice and opportunity for comment and after consultation with appropriate State agencies in all affected States, may on a case-by-case basis grant an extension of the effective date which would otherwise apply under subsection (d), (e), (f), or (g) of this section or under paragraph (2) for up to one year, where the applicant demonstrates that there is a binding contractual commitment to construct or otherwise provide such alternative capacity but due to circumstances beyond the control of such applicant such alternative capacity cannot reasonably be made available by such effective date. Such extension shall be renewable once for no more than one additional year.

(4) Whenever another effective date (hereinafter referred to as a "variance") is established under paragraph (2), or an extension is granted under paragraph (3), with respect to any hazardous waste, during the period for which such variance or extension is in effect, such hazardous waste may be disposed of in a landfill or surface impoundment only if such facility is in compliance with the requirements of subsection (o) of this section.

**(i) Publication of determination**

If the Administrator determines that a method of land disposal will be protective of human health and the environment, he shall promptly publish in the Federal Register notice of such determination, together with an explanation of the basis for such determination.

**(j) Storage of hazardous waste prohibited from land disposal**

In the case of any hazardous waste which is prohibited from one or more methods of land disposal under this section (or under regulations promulgated by the Administrator under any provision of this section) the storage of such hazardous waste is prohibited unless such storage is solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal.

**(k) "Land disposal" defined**

For the purposes of this section, the term "land disposal", when used with respect to a specified hazardous waste, shall be deemed to include, but not be limited to, any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

**(l) Ban on dust suppression**

The use of waste or used oil or other material, which is contaminated or mixed with dioxin or any other hazardous waste identified or listed under section 6921 of this title (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment is prohibited.

**(m) Treatment standards for wastes subject to land disposal prohibition**

(1) Simultaneously with the promulgation of regulations under subsection (d), (e), (f), or (g) of this section prohibiting one or more methods of land disposal of a particular hazardous waste, and as appropriate thereafter, the Administrator shall, after notice and an opportunity for hearings and after consultation with appropriate Federal and State agencies, promulgate regulations specifying those levels or methods of treatment, if any, 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.

(2) If such hazardous waste has been treated to the level or by a method specified in regulations promulgated under this subsection, such waste or residue thereof shall not be subject to any prohibition promulgated under subsection (d), (e), (f), or (g) of this section and may be disposed of in a land disposal facility which meets the requirements of this subchapter. Any regulation promulgated under this subsection for a particular hazardous waste shall become effective on the same date as any applicable prohibition promulgated under subsection (d), (e), (f), or (g) of this section.

**(n) Air emissions**

Not later than thirty months after November 8, 1984, the Administrator shall promulgate such regulations for the monitoring and control of air emissions at hazardous waste treatment, storage, and disposal facilities, including but not limited to open tanks, surface impoundments, and landfills, as may be necessary to protect human health and the environment.

**(o) Minimum technological requirements**

(1) The regulations under subsection (a) of this section shall be revised from time to time to take into account improvements in the technology of control and measurement. At a minimum, such regulations shall require, and a permit issued pursuant to section 6925 (c) of this title after November 8, 1984, by the Administrator or a State shall require—

(A) for each new landfill or surface impoundment, each new landfill or surface impoundment unit at an existing facility, each replacement of an existing landfill or surface impoundment unit, and each lateral expansion of an existing landfill or surface impoundment unit, for which an application for a final determination regarding issuance of a permit under section 6925 (c) of this title is received after November 8, 1984—

(i) the installation of two or more liners and a leachate collection system above (in the case of a landfill) and between such liners; and

(ii) ground water monitoring; and

(B) for each incinerator which receives a permit under section 6925 (c) of this title after November 8, 1984, the attainment of the minimum destruction and removal efficiency required by regulations in effect on June 24, 1982.

The requirements of this paragraph shall apply with respect to all waste received after the issuance of the permit.

(2) Paragraph (1)(A)(i) shall not apply if the owner or operator demonstrates to the Administrator, and the Administrator finds for such landfill or surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(3) The double-liner requirement set forth in paragraph (1)(A)(i) may be waived by the Administrator for any monofill, if—

(A) such monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand,

(B) such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Extraction Procedure ("EP") toxicity characteristics set forth in regulations under this subchapter, and

(C) such monofill meets the same requirements as are applicable in the case of a waiver under section 6925 (j)(2) or (4) of this title.

(4)

(A) Not later than thirty months after November 8, 1984, the Administrator shall promulgate standards requiring that new landfill units, surface impoundment units, waste piles, underground tanks and land treatment units for the storage, treatment, or disposal of hazardous waste identified or listed under section 6921 of this title shall be required to utilize approved leak detection systems.

(B) For the purposes of subparagraph (A)—

(i) the term "approved leak detection system" means a system or technology which the Administrator determines to be capable of detecting leaks of hazardous constituents at the earliest practicable time; and

(ii) the term "new units" means units on which construction commences after the date of promulgation of regulations under this paragraph.

(5)

(A) The Administrator shall promulgate regulations or issue guidance documents implementing the requirements of paragraph (1)(A) within two years after November 8, 1984.

(B) Until the effective date of such regulations or guidance documents, the requirement for the installation of two or more liners may be satisfied by the installation of a top liner designed, operated, and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated <sup>[3]</sup> and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of no more than 1107 centimeter per second.

(6) Any permit under section 6925 of this title which is issued for a landfill located within the State of Alabama shall require the installation of two or more liners and a leachate collection system above and between such liners, notwithstanding any other provision of this chapter.

(7) In addition to the requirements set forth in this subsection, the regulations referred to in paragraph (1) shall specify criteria for the acceptable location of new and existing treatment, storage, or disposal facilities as necessary to protect human health and the environment. Within 18 months after November 8, 1984, the Administrator shall publish guidance criteria identifying areas of vulnerable hydrogeology.

**(p) Ground water monitoring**

The standards under this section concerning ground water monitoring which are applicable to surface impoundments, waste piles, land treatment units, and landfills shall apply to such a facility whether or not—

(1) the facility is located above the seasonal high water table;

(2) two liners and a leachate collection system have been installed at the facility; or

(3) the owner or operator inspects the liner (or liners) which has been installed at the facility.

This subsection shall not be construed to affect other exemptions or waivers from such standards provided in regulations in effect on November 8, 1984, or as may be provided in revisions to those regulations, to the extent consistent with this subsection. The Administrator is authorized on a case-by-case basis to exempt from ground water monitoring requirements under this section (including subsection (o) of this section) any engineered structure which the Administrator finds does not receive or contain liquid waste (nor waste containing free liquids), is designed and operated to exclude liquid from precipitation or other runoff, utilizes multiple leak detection systems within the outer layer of containment, and provides for continuing operation and maintenance of these leak detection systems during the operating period, closure, and the period required for post-closure monitoring and for which the Administrator concludes on the basis of such findings that there is a reasonable certainty hazardous constituents will not migrate beyond the outer layer of containment prior to the end of the period required for post-closure monitoring.

**(q) Hazardous waste used as fuel**

(1) Not later than two years after November 8, 1984, and after notice and opportunity for public hearing, the Administrator shall promulgate regulations establishing such—

(A) standards applicable to the owners and operators of facilities which produce a fuel—

(i) from any hazardous waste identified or listed under section 6921 of this title, or

(ii) from any hazardous waste identified or listed under section 6921 of this title and any other material;

**(B)** standards applicable to the owners and operators of facilities which burn, for purposes of energy recovery, any fuel produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 6921 of this title; and

**(C)** standards applicable to any person who distributes or markets any fuel which is produced as provided in subparagraph (A) or any fuel which otherwise contains any hazardous waste identified or listed under section 6921 of this title;

as may be necessary to protect human health and the environment. Such standards may include any of the requirements set forth in paragraphs (1) through (7) of subsection (a) of this section as may be appropriate. Nothing in this subsection shall be construed to affect or impair the provisions of section 6921 (b)(3) of this title. For purposes of this subsection, the term "hazardous waste listed under section 6921 of this title" includes any commercial chemical product which is listed under section 6921 of this title and which, in lieu of its original intended use, is

**(i)** produced for use as (or as a component of) a fuel,

**(ii)** distributed for use as a fuel, or

**(iii)** burned as a fuel.

**(2)**

**(A)** This subsection, subsection (r) of this section, and subsection (s) of this section shall not apply to petroleum refinery wastes containing oil which are converted into petroleum coke at the same facility at which such wastes were generated, unless the resulting coke product would exceed one or more characteristics by which a substance would be identified as a hazardous waste under section 6921 of this title.

**(B)** The Administrator may exempt from the requirements of this subsection, subsection (r) of this section, or subsection (s) of this section facilities which burn de minimis quantities of hazardous waste as fuel, as defined by the Administrator, if the wastes are burned at the same facility at which such wastes are generated; the waste is burned to recover useful energy, as determined by the Administrator on the basis of the design and operating characteristics of the facility and the heating value and other characteristics of the waste; and the waste is burned in a type of device determined by the Administrator to be designed and operated at a destruction and removal efficiency sufficient such that protection of human health and environment is assured.

**(C)**

**(i)** After November 8, 1984, and until standards are promulgated and in effect under paragraph (2) of this subsection, no fuel which contains any hazardous waste may be burned in any cement kiln which is located within the boundaries of any incorporated municipality with a population greater than five hundred thousand (based on the most recent census statistics) unless such kiln fully complies with regulations (as in effect on November 8, 1984) under this subchapter which are applicable to incinerators.

**(ii)** Any person who knowingly violates the prohibition contained in clause (i) shall be deemed to have violated section 6928 (d)(2) of this title.

**(r) Labeling**

**(1)** Notwithstanding any other provision of law, until such time as the Administrator promulgates standards under subsection (q) of this section specifically superceding this requirement, it shall be unlawful for any person who is required to file a notification in accordance with paragraph (1) or (3) of section 6930 of this title to distribute or market any fuel which is produced from any hazardous waste identified or listed under section 6921 of this title, or any fuel which otherwise contains any hazardous waste identified or listed under section 6921 of this title if the invoice or the bill of sale fails—

**(A)** to bear the following statement: "WARNING: THIS FUEL CONTAINS HAZARDOUS WASTES", and

**(B)** to list the hazardous wastes contained therein.

Beginning ninety days after November 8, 1984, such statement shall be located in a conspicuous place on every such invoice or bill of sale and shall appear in conspicuous and legible type in contrast by typography, layouts, or color with other printed matter on the invoice or bill of sale.

**(2)** Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from petroleum refining waste containing oil if—

**(A)** such materials are generated and reinserted onsite into the refining process;

**(B)** contaminants are removed; and

**(C)** such refining waste containing oil is converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of Management and Budget Standard Industrial Classification Manual.

**(3)** Unless the Administrator determines otherwise as may be necessary to protect human health and the environment, this subsection shall not apply to fuels produced from oily materials, resulting from normal petroleum refining, production and transportation practices, if

**(A)** contaminants are removed; and

**(B)** such oily materials are converted along with normal process streams into petroleum-derived fuel products at a facility at which crude oil is refined into petroleum products and which is classified as a number SIC 2911 facility under the Office of

**(s) Recordkeeping**

Not later than fifteen months after November 8, 1984, the Administrator shall promulgate regulations requiring that any person who is required to file a notification in accordance with subparagraph (1), (2), or (3), of section 6930 (a) of this title shall maintain such records regarding fuel blending, distribution, or use as may be necessary to protect human health and the environment.

**(t) Financial responsibility provisions**

(1) Financial responsibility required by subsection (a) of this section may be established in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this section, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this chapter.

(2) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where (with reasonable diligence) jurisdiction in any State court or any Federal Court cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claim arising from conduct for which evidence of financial responsibility must be provided under this section may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this subsection, such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

(3) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this chapter. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 9607 or 9611 of this title or other applicable law.

(4) For the purpose of this subsection, the term "guarantor" means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this section.

**(u) Continuing releases at permitted facilities**

Standards promulgated under this section shall require, and a permit issued after November 8, 1984, by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit under this subchapter, regardless of the time at which waste was placed in such unit. Permits issued under section 6925 of this title shall contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

**(v) Corrective action beyond facility boundary**

As promptly as practicable after November 8, 1984, the Administrator shall amend the standards under this section regarding corrective action required at facilities for the treatment, storage, or disposal, of hazardous waste listed or identified under section 6921 of this title to require that corrective action be taken beyond the facility boundary where necessary to protect human health and the environment unless the owner or operator of the facility concerned demonstrates to the satisfaction of the Administrator that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Such regulations shall take effect immediately upon promulgation, notwithstanding section 6930 (b) of this title, and shall apply to—

(1) all facilities operating under permits issued under subsection (c) of this section, and

(2) all landfills, surface impoundments, and waste pile units (including any new units, replacements of existing units, or lateral expansions of existing units) which receive hazardous waste after July 26, 1982.

Pending promulgation of such regulations, the Administrator shall issue corrective action orders for facilities referred to in paragraphs (1) and (2), on a case-by-case basis, consistent with the purposes of this subsection.

**(w) Underground tanks**

Not later than March 1, 1985, the Administrator shall promulgate final permitting standards under this section for underground tanks that cannot be entered for inspection. Within forty-eight months after November 8, 1984, such standards shall be modified, if necessary, to cover at a minimum all requirements and standards described in section 6991b of this title.

**(x) Mining and other special wastes**

If

(1) solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium,

(2) fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels, or

(3) cement kiln dust waste, is subject to regulation under this subchapter, the Administrator is authorized to modify the requirements of subsections (c), (d), (e), (f), (g), (o), and (u) of this section and section 6925 (j) of this title, in the case of landfills or surface impoundments receiving such solid waste, to take into account the special characteristics of such wastes, the practical difficulties associated with implementation of such requirements, and site-specific characteristics, including but not limited to the climate, geology, hydrology and soil chemistry at the site, so long as such modified requirements assure protection of human health

and the environment.

**(y) Munitions**

(1) Not later than 6 months after October 6, 1992, the Administrator shall propose, after consulting with the Secretary of Defense and appropriate State officials, regulations identifying when military munitions become hazardous waste for purposes of this subchapter and providing for the safe transportation and storage of such waste. Not later than 24 months after October 6, 1992, and after notice and opportunity for comment, the Administrator shall promulgate such regulations. Any such regulations shall assure protection of human health and the environment.

(2) For purposes of this subsection, the term "military munitions" includes chemical and conventional munitions.

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[1] See References in Text note below.

[2] See References in Text note below.

[3] So in original. Probably should be followed by a comma.