

Title 26
DEPARTMENT OF THE ENVIRONMENT
Subtitle 13 DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES
**Chapter 05 Standards for Owners and Operators of Hazardous Waste Treatment, Storage,
and Disposal Facilities**

Authority: Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland

.01 General.

A. Purpose, Scope, and Applicability.

(1) The purpose of this regulation is to establish minimum State standards which define the acceptable management of hazardous waste.

(2) The standards in this chapter apply to:

(a) Owners and operators of facilities which treat, store, or dispose of hazardous waste;

(b) All treatment, storage, or disposal of hazardous waste at active facilities or at inactive facilities, except as specifically provided otherwise in this chapter, COMAR 26.13.02, 26.13.06, or 26.13.10;

(c) Inactive disposal facilities when the Department determines that a substantial present or potential hazard to human health or the environment exists;

(d) As specified in COMAR 26.13.10.30, the storage of military munitions classified as a solid waste under COMAR 26.13.10.27B; and

(e) The treatment and disposal of hazardous waste military munitions.

(3) The requirements of this chapter do not apply to:

(a) A person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sanctuaries Act and complying with the following regulations:

(i) Regulation .02B of this chapter, and

(ii) Regulation .05B, C, D(1) and (2)(a), and F and G of this chapter;

(b) The owner or operator of a facility permitted, licensed, or registered by the State to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this chapter by COMAR 26.13.02.05;

(c) The owner or operator of a facility managing recyclable materials described in COMAR 26.13.02.06A(2) and (3), except to the extent required in this chapter or by COMAR 26.13.10;

(d) A generator accumulating waste on-site in compliance with COMAR 26.13.03.05E, except to the extent that COMAR 26.13.03.05E requires the generator to comply with the requirements in this chapter;

(e) A farmer disposing of waste pesticides from his own use in compliance with COMAR 26.13.03.07-4;

(f) The owner or operator of a totally enclosed treatment facility as defined in COMAR 26.13.01.03B(81);

(g) The owner or operator of an elementary neutralization unit or a wastewater treatment unit, unless the unit is used to treat waste from off-site;

(h) A person engaged in treatment or containment activities during immediate response to any of the following situations, except as provided in §D of this regulation:

(i) A discharge of a hazardous waste,

(ii) An imminent and substantial threat of a discharge of a hazardous waste,

(iii) A discharge of a material which, if discharged, becomes a hazardous waste, or

(iv) An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of conventional military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in COMAR 26.13.01.03B.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.01

- (i) The owner or operator of a publicly owned treatment works (POTW) if the owner or operator:
 - (i) Has an NPDES permit,
 - (ii) Complies with the conditions of the facility's NPDES permit, and
 - (iii) Complies with Regulations .02B, .05B, C, D(1) and (2)(a), F, and G of this chapter;
- (j) The addition of absorbent material to a waste container or the addition of waste to absorbent in a container, if:
 - (i) The combining of waste and absorbent occurs when waste is first placed in the container;
 - (ii) Regulation .02H(2) of this chapter, which concerns requirements for ignitable, reactive, or incompatible waste, is complied with;
 - (iii) Regulation .09B of this chapter, which concerns condition of containers, is complied with; and
 - (iv) Regulation .09C of this chapter, which concerns compatibility of waste with containers, is complied with;
- (k) Universal waste handlers and universal waste transporters handling the following wastes:
 - (i) Batteries, as described in COMAR 26.13.10.07;
 - (ii) Pesticides, as described in COMAR 26.13.10.08; and
 - (iii) Lamps, mercury-containing equipment, or PCB-containing lamp ballasts, each as described in COMAR 26.13.10.09; or

(l) A person who operates a device to crush mercury-containing lamps if the person who operates the device is in compliance with the requirements of COMAR 26.13.10.15B(3).

B. Relationship to Interim Status Standards. A facility owner or operator who has fully complied with the requirements for interim status, as defined in §3005(c) of RCRA and COMAR 26.13.07.23A, shall comply with the regulations specified in COMAR 26.13.06 in place of the regulations in this chapter, until final administrative disposition of the owner or operator's permit application is made.

C. Imminent Hazard Action. Notwithstanding any other provisions of these regulations, enforcement actions may be brought under Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland.

D. Clarifications Concerning Responses to Emergencies.

(1) The owner or operator of a facility exempted under §A(3)(h) of this regulation but otherwise subject to the requirements of this chapter shall comply with all applicable requirements of Regulations .03 and .04 of this chapter.

(2) A person exempted from the requirements of this chapter under §A(3)(h) of this regulation who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this chapter and COMAR 26.13.07 with respect to those activities.

(3) The exemptions of §A(3)(h)(i)–(iv) of this regulation only apply to activities taken in response to a discharge, an imminent and substantial threat of a discharge, or an explosives or munitions emergency. After the immediate response activities are completed, the applicable regulations of this chapter apply fully to the management of any spill residue or debris that is a hazardous waste under COMAR 26.13.02.

(4) The Secretary may:

(a) Require a person to comply with the requirements of this chapter even though the person is otherwise exempted from complying with these requirements under §A(3)(h) of this regulation if the Secretary determines that requiring compliance is necessary for the protection of human health or the environment; and

(b) Consider the following in making the determination under §D(4)(a) of this regulation that a treatment or containment activity shall be subject to the requirements of this chapter:

- (i) The volume of the waste or material that is the subject of the treatment or containment activity;
- (ii) The toxicity of the waste or material that is the subject of the treatment or containment activity; or
- (iii) The risks associated with the treatment or containment activity.

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.02

(5) In the case of an explosives or munitions emergency response, if a federal, State, tribal, or local official acting within the scope of that individual's official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste:

- (a) By transporters who do not have EPA identification numbers;
- (b) By transporters who have not been issued a certificate under COMAR 26.13.04.01C and F; and
- (c) Without the preparation of a manifest.

(6) In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit shall retain records for 3 years identifying:

- (a) The dates of the response;
- (b) The responsible persons responding;
- (c) The type and description of material addressed; and
- (d) The final disposition of the material addressed in the emergency.

.02 General Facility Standards.

A. Applicability. This regulation applies to owners and operators of all hazardous waste facilities, except as Regulation .01A provides otherwise.

B. Identification Number. Every facility owner or operator shall apply to the State for an EPA identification number.

C. Required Notices.

(1) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the Secretary in writing at least 4 weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(2) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure period, the owner or operator shall notify the new owner or operator in writing of the requirements of this chapter and COMAR 26.13.07.

(3) The owner or operator of a facility that receives hazardous waste from an off-site source, unless the owner or operator is also the generator, shall inform the generator in writing that the appropriate permit or permits for the facility have been obtained, or that the facility has qualified for interim status, and that the waste the generator is shipping will be accepted. The owner or operator shall keep a copy of this written notice as part of the operating record.

(4) Hazardous Waste Received at a Recovery Facility from a Foreign Source.

(a) For the purposes of this subsection:

- (i) "Competent authorities" has the meaning stated in 40 CFR §262.81(a);
- (ii) "Concerned countries" has the meaning stated in 40 CFR §262.81(b);
- (iii) "Notifier" has the meaning stated in 40 CFR §262.81(g);
- (iv) "Recovery facility" has the meaning stated in 40 CFR §262.81(j); and

(v) "Tracking document" means a document that meets the requirements of 40 CFR §262.84, which is incorporated by reference in COMAR 26.13.01.05B(1)(d).

(b) The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to COMAR 26.13.03.07-5, which deals with international agreements concerning shipments of hazardous waste, shall provide a copy of the tracking document bearing all required signatures, within 3 working days of receipt of the shipment to:

- (i) The notifier;
- (ii) The U.S. EPA at the address given in 40 CFR §264.12(a)(2); and
- (iii) The competent authorities of all other concerned countries.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.02

(c) A person required to distribute copies of a tracking document under §C(4)(b) of this regulation shall maintain the original of the signed tracking document at the facility for at least 3 years.

D. General Waste Analysis.

(1) Chemical and Physical Analysis.

(a) Before an owner or operator treats, stores, or disposes of any hazardous waste, or non-hazardous waste if applicable under Regulation .07D(6) of this chapter, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis shall contain all the information which is needed to treat, store, or dispose of the waste in accordance with the requirements of this chapter or with the conditions of a permit issued pursuant to COMAR 26.13.07.

(b) The analysis may include data developed under COMAR 26.13.02, existing published or documented data on the hazardous waste or on waste generated from similar processes.

(c) The owner or operator shall repeat the analysis required by §D(1)(a) of this regulation to ensure that it is accurate and up to date, and, in doing so, repeat the analysis at a minimum:

(i) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste, or non-hazardous waste if applicable under Regulation .07D(6) of this chapter, has changed; and

(ii) For off-site facilities, when the results of the inspection required in §D(1)(d), below, indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(d) The owner or operator of an off-site facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(2) Written Analysis. The owner or operator shall:

(a) Develop and follow a written waste analysis plan which describes the procedures which the owner or operator will carry out to comply with §D(1) of this regulation.

(b) Keep the waste analysis plan required by §D(2)(a) of this regulation at the facility;

(c) Assure that the plan required by §D(2) of this regulation specifies, at a minimum:

(i) The parameters for which each hazardous waste, or non-hazardous waste if applicable under Regulation .07D(6) of this chapter, will be analyzed and the rationale for the selection of these parameters, explaining how analysis for these parameters will provide sufficient information on the waste's properties to comply with §D(1) of this regulation,

(ii) The test methods which will be used to test for these parameters,

(iii) The sampling method which will be used to obtain a representative sample of the waste to be analyzed, which may be either one of the sampling methods described in COMAR 26.13.02.20 or an equivalent sampling method,

(iv) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date,

(v) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply, and

(vi) When applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §H of this regulation and Regulations .14N and .16D of this chapter; and

(d) Assure that, for off-site facilities, the waste analysis plan required in §D(2)(a) of this regulation at a minimum:

(i) Specifies the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper,

(ii) Describes the procedures which will be used to determine the identity of each movement of waste managed at the facility, and

(iii) Describes the sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.02

E. Security.

(1) The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, unless it can be demonstrated to the Secretary that:

(a) Physical contact with the waste, structures, or equipment within the active portion of the facility does not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and

(b) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, does not cause a violation of the requirements of this chapter.

(2) Unless exempt under §E(1)(a) and (b), above, a facility shall have:

(a) A 24-hour surveillance system (for example, television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

(b) An artificial or natural barrier (for example, a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(c) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (for example, an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

(3) Unless exempt under §E(1)(a) and (b), above, a sign with the legend "Danger—Unauthorized Personnel Keep Out", shall be posted at every entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend shall be written in English and in any other language predominant in the area surrounding the facility and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger—Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

F. General Inspection Requirements.

(1) The owner or operator shall inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing, or may lead to, a release of hazardous waste constituents to the environment or may be causing, or may lead to, a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(2) Development of Written Schedule.

(a) The owner or operator shall develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(b) The owner shall keep this schedule at the facility.

(c) The schedule shall identify the types of problems (for example, malfunctions or deterioration) which are to be looked for during the inspection (for example, inoperative sump pump, leaking fitting, eroding dike, etc.).

(d) The owner or operator:

(i) May develop an inspection schedule on which the frequency of inspection for the items on the schedule varies;

(ii) Shall base the frequency of inspection on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction or any operator error goes undetected between inspections;

(iii) Shall inspect areas subject to spills, such as loading and unloading areas, daily when in use; and

(iv) Shall include in the inspection schedule, at a minimum, the items and frequencies called for in Regulations .09E, .10D, .10-4G, .11F, .12E, .13D, .14C, .16I, and .16-1C of this chapter.

(3) The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. When a hazard is imminent or has already occurred, remedial action shall be taken immediately.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.02

(4) The owner or operator shall record inspections in an inspection log or summary. He shall keep these records for at least 3 years from the date of inspection. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

G. Personnel Training.

(1) Program of Instruction or Training.

(a) Facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this chapter. The owner or operator shall ensure that this program includes all the elements described in the document required under §G(4)(c), of this regulation.

(b) This program shall be directed by a person trained in hazardous waste management procedures, and shall include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(c) At a minimum the training program shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, when applicable:

- (i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- (ii) Key parameters for automatic waste feed cutoff systems;
- (iii) Communications or alarm systems;
- (iv) Response to fires or explosions;
- (v) Response to ground water contamination incidents; and
- (vi) Shutdown of operations.

(2) Facility personnel shall successfully complete the program required in §G(1), of this regulation, within 6 months after the effective date of these regulations or 6 months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations may not work in unsupervised positions until they have completed the training requirements of §G(1), of this regulation.

(3) Facility personnel shall take part in an annual review of the initial training required in §G(1), of this regulation.

(4) The owner or operator shall maintain the following documents and records at the facility:

(a) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

(b) A written job description for each position listed under §G(4)(a), of this regulation. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but shall include the requisite skill, education, or other qualifications, and duties of employees assigned to each position.

(c) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under §G(4)(a), of this regulation.

(d) Records that document that the training or job experience required under §G(1), (2), and (3) of this regulation, has been given to, and completed by, facility personnel.

(5) Training records on current personnel shall be kept until closure of the facility. Training records on former employees shall be kept for at least 3 years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

H. General Requirements for Ignitable, Reactive, or Incompatible Wastes.

(1) The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall be separated and protected from the sources of ignition or reaction including, but not limited to open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electric, or mechanical), spontaneous ignition (for example, from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.02

or operator shall confine smoking and open flame to specially designated locations. "No smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(2) When specifically required by this subtitle, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, shall be conducted so that it does not:

- (a) Generate extreme heat or pressure, fire or explosion, or violent reaction;
- (b) Produce uncontrolled toxic mists, fumes, dusts, or gasses in sufficient quantities to threaten human health or the environment;
- (c) Produce uncontrolled flammable fumes or gasses in sufficient quantities to pose a risk of fire or explosions;
- (d) Damage the structural integrity of the device or facility containing the waste; or
- (e) Through other like means threaten human health or the environment.

(3) When required to comply with §H(1) or (2), of this regulation, the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (for example, bench scale or pilot scale tests), waste analysis according to §D of this regulation, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

I. Aisle Space.

(1) The facility owner or operator shall provide sufficient aisle space to allow for:

- (a) Inspections by the Department;
- (b) Inspections under §F of this regulation; and
- (c) Compliance with Regulation .03F of this chapter.

(2) At a minimum, the aisle space shall be no less than 2 feet in width.

J. Transportation Certification.

(1) Unless §J(2), of this regulation, applies, a facility shall only accept CHS from a certified hauler who has the following:

- (a) The CHS hauler certification;
- (b) His or her CHS driver certification; and
- (c) The vehicle certification.

(2) A facility shall only accept CHS from a hauler without a certification upon approval from the Department.

.02-1 Site Selection for CHS Facilities.

A. A facility may not be located in an active fault zone.

B. Flood Plains.

(1) Definitions. The following definitions are used in §B(2), of this regulation:

- (a) "100-year flood" means a flood that has a 1 percent chance of being equaled or exceeded in any given year.
- (b) "100-year flood plain" means any land area which is subject to a 1 percent or greater chance of a flooding in any given year from any source.

(c) "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

(2) A facility located in a 100-year flood plain shall be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood unless the owner or operator demonstrates to the Secretary that procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters.

C. A facility may not be located in a wetland, unless the operator obtains a discharge permit under COMAR 26.10.01 and a wetlands permit under COMAR 08.05.07.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.03

D. A facility may not be located so as to be likely to jeopardize the continued existence of endangered and threatened species, or result in the destruction or adverse modification of their critical habitat. (Reference: COMAR 08.03.08 and Natural Resources Article, §§10-2A-01—2A-09, Annotated Code of Maryland.)

E. A facility may not be located in the recharge zone of a sole source aquifer unless it can be demonstrated that the facility is designed, constructed, operated, and maintained to prevent any endangerment of the aquifer.

F. Salt Dome Formations, Salt Bed Formations, Underground Mines, and Caves. The placement of any noncontained or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave is prohibited.

.03 Preparedness and Prevention.

A. Applicability. This regulation applies to owners and operators of all hazardous waste facilities, except as Regulation .01A of this chapter otherwise provides.

B. Design and Operation of Facility. Facilities shall be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

C. Required Equipment. All facilities shall be equipped with the following, unless it can be demonstrated to the Secretary that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

(1) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(2) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

(3) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

(4) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

D. Testing and Maintenance of Equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.

E. Access to Communications or Alarm System.

(1) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communications device, either directly or through visual or voice contact with another employee, unless the Secretary has ruled that such a device is not required under §C of this regulation.

(2) If there is ever just one employee on the premises while the facility is operating, he shall have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless the Secretary has ruled that such a device is not required under §C of this regulation.

F. Required Aisle Space. The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Secretary that aisle space is not needed for any of these purposes.

G. Special Handling for Ignitable or Reactive Waste. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, friction heat, sparks (static, electrical, or mechanical), spontaneous ignition (for example, from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

H. Arrangements With Local Authorities.

(1) The owner or operator shall attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

(a) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility and possible evacuation routes;

(b) When more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority. Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(c) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(2) When State or local authorities decline to enter into these arrangements, the owner or operator shall document the refusal in the operating record.

.04 Contingency Plan and Emergency Procedures.

A. Applicability. This regulation applies to owners and operators of all hazardous waste facilities, except as Regulation .01 otherwise provides.

B. Purpose and Implementation of Contingency Plan.

(1) Every owner or operator shall have a contingency plan for his facility. The contingency plan shall be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(2) The provisions of the plan shall be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

C. Content of Contingency Plan.

(1) The contingency plan shall describe the actions facility personnel shall take to comply with §§B and G of this regulation, in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(2) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112 or 1510, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this chapter.

(3) The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to Regulation .03H of this chapter.

(4) The plan shall list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §F of this regulation), and this list shall be kept up to date. When more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates. For new facilities, this information shall be supplied to the Secretary at the time of certification, rather than at the time of permit application.

(5) The plan shall include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list shall be kept up to date. In addition, the plan shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(6) The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall describe signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes (when the primary routes could be blocked by releases of hazardous waste or fires).

DEPARTMENT OF THE ENVIRONMENT

26.13.05.04

D. Copies of Contingency Plan. A copy of the contingency plan and all revisions to the plan shall be:

- (1) Maintained at the facility; and
- (2) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

E. Amendments of Contingency Plan. The contingency plan shall be reviewed, and immediately amended, if necessary, whenever the:

- (1) Facility permit is revised;
- (2) Plan fails in an emergency;
- (3) Facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- (4) List of emergency coordinators changes; or
- (5) List of emergency equipment changes.

F. Emergency Coordinator. At all times, there shall be at least one employee either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

G. Emergency Procedures.

(1) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) shall immediately:

- (a) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
- (b) Notify appropriate State or local agencies with designated response roles if their help is needed.

(2) Whenever there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

(3) Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (for example, the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

(4) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, or if the release is of a quantity which would exceed the Reportable Quantities listed in 40 CFR Part 302, as promulgated effective July 1, 2007, the emergency coordinator shall report these findings as follows:

(a) If the assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities and be available to help appropriate officials decide whether local areas should be evacuated.

(b) The emergency coordinator shall immediately notify either the government official designated as the on-scene coordinator for that geographical area (in the applicable regional contingency plan under 40 CFR Part 1510) or the National Response Center using their 24-hour toll-free number (800) 424-8802, and the Maryland Department of the Environment, Emergency Response Program (866) 633-4686. The report shall include:

- (i) Name and telephone number of reporter;
- (ii) Name and address of facility;

- (iii) Time and type of incident (for example, release, fire);
- (iv) Name and quantity of materials involved, to the extent known;
- (v) The extent of injuries, if any; and
- (vi) The possible hazards to human health, or the environment, outside the facility.

(5) During an emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(6) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(7) Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(8) The emergency coordinator shall ensure that, in the affected areas of the facility:

(a) Waste that may be incompatible with the released material is not treated, stored, or disposed of until cleanup procedures are completed; and

(b) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(9) The owner or operator shall notify the Secretary, and appropriate other State and local authorities, that the facility is in compliance with §G(8) of this regulation before operations are resumed in the affected areas of the facility.

(10) The owner or operator shall note in the operating record the time, date, and details of any incident that required implementing the contingency plan. Within 15 days after the incident, he shall submit a written report on the incident to the Secretary. The report shall include:

- (a) Name, address, and telephone number of the owner or operator;
- (b) Name, address, and telephone number of the facility;
- (c) Date, time, and type of incident (for example, fire, explosion);
- (d) Name and quantity of materials involved;
- (e) The extent of injuries, if any;
- (f) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- (g) Estimated quantity and disposition of recovered material that resulted from the incident.

.05 Manifest System, Record Keeping, and Reporting.

A. Applicability.

(1) This regulation applies to owners and operators of both on-site and off-site facilities, except as Regulation .01 of this chapter otherwise provides.

(2) Sections B, C, and G of this regulation do not apply to owners and operators of:

(a) On-site facilities that do not receive hazardous waste from off-site sources; or

(b) Off-site facilities with respect to waste military munitions exempted from manifest requirements under COMAR 26.13.10.28B.

(3) Section D(2)(i) of this regulation only applies to owners or operators who treat, store, or dispose of hazardous wastes on-site where these wastes were generated.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.05

B. Use of Manifest System.

(1) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or the owner or operator's agent, shall:

(a) Sign and date, by hand, each copy of the manifest to certify that the hazardous waste covered by the manifest was:

(i) Received;

(ii) Received, except as noted in the manifest discrepancy space; or

(iii) Rejected, as noted in the manifest discrepancy space;

(b) Note any discrepancies in the manifest as defined in §C(1) of this regulation on each copy of the manifest;

(c) Immediately give the transporter at least one copy of the signed manifest;

(d) Within 30 days after the delivery, send a copy of the manifest to the generator;

(e) Send a completed copy of the manifest to:

(i) The Department within 10 days after receipt of the hazardous waste; and

(ii) The generator state if the generator state requires the destination facility to submit a copy of the manifest;

(f) Retain at the facility a copy of each manifest for at least 3 years from the date of delivery; and

(g) For hazardous waste imported from a foreign source, mail a copy of the manifest, within 30 days of delivery of the waste, to the address given in 40 CFR §264.71(a)(3).

(2) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or the owner or operator's agent, shall:

(a) Sign and date each copy of the shipping paper to certify that the hazardous waste covered by the shipping paper was received;

(b) Note any significant discrepancies in the shipping paper as defined in §C(1) of this regulation on each copy of the shipping paper;

(c) Immediately give the rail or water (bulk shipment) transporter at least one copy of the shipping paper;

(d) Within 30 days after the delivery, send to the generator a copy of the signed and dated:

(i) Manifest; or

(ii) Shipping paper if the manifest has not been received within 30 days after delivery; and

(e) Retain at the facility a copy of each shipping paper and manifest for at least 3 years from the date of delivery.

(3) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility shall comply with the requirements of COMAR 26.13.03.

(4) Hazardous Waste Received at a Recovery Facility from a Foreign Source.

(a) For the purposes of this subsection:

(i) "Competent authorities" has the meaning stated in 40 CFR §262.81(a);

(ii) "Concerned countries" has the meaning stated in 40 CFR §262.81(b);

(iii) "Notifier" has the meaning stated in 40 CFR §262.81(g);

(iv) "Recovery facility" has the meaning stated in 40 CFR §262.81(j); and

(v) "Tracking document" means a document that meets the requirements of 40 CFR §262.84, which is incorporated by reference in COMAR 26.13.01.05B(1)(d).

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.05

(b) The owner or operator of a facility that has received hazardous waste subject to COMAR 26.13.03.07-5, which deals with international agreements concerning shipments of hazardous waste, shall provide a copy of the tracking document bearing all required signatures, within 3 working days of receipt of the shipment to:

- (i) The notifier;
- (ii) The U.S. EPA at the address given in 40 CFR §264.71(d); and
- (iii) The competent authorities of all other concerned countries.

(c) A person required to distribute copies of a tracking document under §B(4)(b) of this regulation shall maintain the original of the signed tracking document at the facility for at least 3 years.

(5) A facility shall determine whether:

(a) Under the consignment state's hazardous waste program, the consignment state regulates as hazardous for a shipment any additional wastes beyond those regulated federally; and

(b) The generator state, consignment state, or both, require the facility to submit any copies of the manifest to these states.

C. Manifest Discrepancies.

(1) Manifest discrepancies are:

(a) Significant differences, as defined in §C(2) of this regulation, between the quantity or type of hazardous waste designated on the manifest or shipping paper and the quantity or type of hazardous waste a facility actually receives;

(b) Rejected wastes, which may be a full or a partial shipment of hazardous waste that the designated facility cannot accept; or

(c) Container residues, which are residues that exceed the quantity limits for a container to be defined as "empty" under COMAR 26.13.02.07B.

(2) In this section, the following terms have the meanings indicated:

(a) "Significant differences in quantity" means:

(i) For bulk waste, variations greater than 10 percent in weight; and

(ii) For batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload.

(b) "Significant differences in type" means obvious differences that can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid or toxic constituents not reported on the manifest or shipping paper.

(3) If the owner or operator discovers a significant difference in quantity or type for a shipment of waste, the owner or operator shall:

(a) Upon discovery of the significant difference, attempt to reconcile the discrepancy with the waste generator or transporter, by, for example, telephone conversations; and

(b) If the discrepancy is not resolved within 15 days after receiving the waste, immediately submit the following to the Secretary:

(i) A letter describing the discrepancy and the attempts to reconcile it; and

(ii) A copy of the manifest or shipping paper at issue.

(4) Management of Rejected Wastes and Container Residues.

(a) Upon rejecting waste or identifying a container residue that exceeds the quantity limits for "empty" under COMAR 26.13.02.07B, the facility:

(i) Shall consult with the generator before forwarding the waste to another facility that can manage the waste;

(ii) May return the rejected waste or residue to the generator if it is impossible to locate an alternative facility that can receive the waste; and

DEPARTMENT OF THE ENVIRONMENT

26.13.05.05

(iii) Shall send the waste to the alternative facility or to the generator within 60 days of the rejection of the waste or the identification of the excess container residue.

(b) While the facility is making arrangements for forwarding rejected wastes or residues to another facility in accordance with §C(4)(a) of this regulation, pending delivery of the waste to the first transporter designated on the manifest prepared under §C(5) or (6) of this regulation, the facility shall:

- (i) Ensure that the delivering transporter retains custody of the waste; or
- (ii) Provide for secure, temporary custody of the waste.

(5) Preparation of Manifests—Shipments of Rejected Loads and Residues to an Alternate Facility.

(a) Except as provided in §C(5)(c) of this regulation, for full or partial load rejections and residues that are to be sent offsite to an alternate facility, the rejecting facility shall prepare a new manifest in accordance with the requirements of COMAR 26.13.03.04A and the instructions in §C(5)(b) of this regulation.

(b) The facility shall do the following in preparing the manifest required by §C(5)(a) of this regulation:

- (i) Write the generator's U.S. EPA identification number in Item 1 of the new manifest;
- (ii) Write the generator's name and mailing address in Item 5 of the new manifest;
- (iii) If the generator's mailing address differs from the generator's site address, write the generator's site address in Item 5 of the new manifest;
- (iv) Write the name of the alternate designated facility and the alternate facility's U.S. EPA identification number in Item 8, the designated facility block, of the new manifest;
- (v) Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling Instructions and Additional Information Block of the new manifest, and indicate in this block that the shipment is a residue or rejected waste from the previous shipment;
- (vi) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in Item 18a, the Discrepancy Block, of the old manifest;
- (vii) Write the U.S. Department of Transportation description for the rejected load or the residue in Item 9, U.S. DOT Description, of the new manifest;
- (viii) Write the number and type of container, waste quantity, unit of weight or volume, and waste codes for each waste in the appropriate spaces of the new manifest; and
- (ix) Sign the Generator's/Offerrer's Certification on the new manifest to certify, as offeror of the shipment, that the waste has been properly packaged, marked, and labeled, and is in proper condition for transportation.

(c) For full load rejections that are made while the transporter remains at the facility, the facility:

- (i) May forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the Alternate Facility space;
- (ii) Shall retain for the facility's records a copy of the manifest amended as specified in §C(5)(c)(i) of this regulation, and shall give the remaining copies of the amended manifest to the transporter to accompany the shipment; and
- (iii) Shall, if the original manifest is not used in transporting the shipment to the alternate facility, use a new manifest completed in accordance with the requirements of COMAR 26.13.03.04A and the instructions in §C(5)(b) of this regulation.

(6) Preparation of Manifests—Shipments of Rejected Loads and Residues Returned to Generator.

(a) Except as provided in §C(6)(c) of this regulation, for rejected wastes and residues that are to be sent back to the generator, the rejecting facility shall prepare a new manifest in accordance with the requirements of COMAR 26.13.03.04A and the instructions in §C(6)(b) of this regulation.

(b) The facility shall do the following in preparing the manifest required by §C(6)(a) of this regulation:

- (i) Write the rejecting facility's U.S. EPA identification number in Item 1 of the new manifest;
- (ii) Write the rejecting facility's name and mailing address in Item 5 of the new manifest;

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.05

(iii) If the rejecting facility's mailing address differs from the facility's site address, write the facility's site address in Item 5 of the new manifest;

(iv) Write the name of the initial generator and the generator's U.S. EPA identification number in Item 8, the designated facility block, of the new manifest;

(v) Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling Instructions and Additional Information Block of the new manifest, and indicate in this block that the shipment is a residue or rejected waste from the previous shipment;

(vi) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in Item 18a, the Discrepancy Block, of the old manifest;

(vii) Write the U.S. DOT description for the rejected load or the residue in Item 9, U.S. DOT Description, of the new manifest;

(viii) Write the number and type of container, waste quantity, unit of weight or volume, and waste codes for each waste in the appropriate spaces of the new manifest; and

(ix) Sign the Generator's/Offeror's Certification on the new manifest to certify, as offeror of the shipment, that the waste has been properly packaged, marked, and labeled, and is in proper condition for transportation.

(c) For full load rejections that are made while the transporter remains at the facility, the facility:

(i) May return the shipment to the generator with the original manifest by completing Item 18b of the manifest and supplying the generator's information in the Alternate Facility space;

(ii) Shall retain for the facility's records a copy of the manifest amended as specified in §C(6)(c)(i) of this regulation, and shall give the remaining copies of the amended manifest to the transporter to accompany the shipment; and

(iii) Shall, if the original manifest is not used in returning the shipment to the generator, use a new manifest completed in accordance with the requirements of COMAR 26.13.03.04A and the instructions in §C(6)(b) of this regulation.

(7) Loads and Residues Rejected After Return of Original Manifest. If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for empty under COMAR 26.13.02.07B after the facility has signed, dated, and returned a copy of the manifest to the delivering transporter or to the generator, the facility shall:

(a) Amend the facility's copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest;

(b) Record the manifest tracking number from Item 4 of the new manifest that will accompany the shipment in the discrepancy space of the amended original manifest;

(c) Re-sign and date the amended original manifest to certify to the information as amended;

(d) Retain the amended original manifest for at least 3 years from the date the manifest was amended; and

(e) Send, within 30 days after the facility determines that the waste or residue must be rejected, a copy of the amended original manifest to the transporter and generator that received copies of the unamended, original manifest.

D. Operating Record.

(1) The owner or operator shall keep a written operating record at his facility.

(2) The owner or operator shall record following information as it becomes available, and maintain it in the operating record until closure of the facility:

(a) A description and the quantity of each hazardous waste received, and the methods and dates of its treatment, storage, or disposal at the facility as required by Regulation .20 of this chapter;

(b) Information on the inventory of hazardous waste at the facility, including:

(i) The location of each hazardous waste within the facility;

(ii) The quantity of hazardous waste at each location;

DEPARTMENT OF THE ENVIRONMENT

26.13.05.05

(iii) For the information required by §D(2)(b)(i) and (ii) of this regulation, cross-references to the specific manifest document numbers, if the waste was accompanied by a manifest; and

(iv) For disposal facilities, a map or diagram of each cell or disposal area on which has been recorded the location and quantity of each hazardous waste.

(c) Records and results of waste analysis performed as specified in Regulations .02D and H, .14N, and .16D of this chapter.

(d) Summary reports and details of all incidents that require implementing the contingency plan as specified in Regulation .04G(10) of this chapter.

(e) Records and results of inspections as required by Regulation .02F(4) of this chapter (except these data need be kept only 3 years).

(f) For off-site facilities, notices to generators as specified in Regulation .02C(3) of this chapter.

(g) All closure cost estimates under Regulation .08 of this chapter and for disposal facilities all post-closure cost estimates under Regulation .08 of this chapter.

(h) Monitoring, testing, or analytical data, and corrective action when required by Regulations .06— .06-7, .10D, .10-2, .10-4, .11F, .12E, .13G, I, K, .14C, I, .16I, and .16-1C of this chapter.

(i) A certification by the owner or operator at least annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

E. Availability, Retention, and Disposition of Records.

(1) All records, including plans, required under this chapter shall be furnished upon request, and made available at all reasonable times for inspection by any officer, employee, or representative of the Department who is duly designated by the Secretary.

(2) The retention period for all records required under this chapter is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Secretary.

(3) A copy of records of waste disposal locations and quantities under §D(2)(b) of this regulation shall be submitted to the Secretary and local land authority upon closure of the facility.

F. Annual or Biennial Reporting. An owner or operator shall:

(1) Periodically, submit reports to the Secretary concerning hazardous waste generated during the preceding calendar year on EPA or State Form 8700-13B, or on an alternate form provided by the Secretary;

(2) Submit the reports required by §F(1) of this regulation with the following frequency:

(a) Annually, for reporting periods through December 31, 1995; and

(b) Biennially, for reporting periods beginning January 1, 1997;

(3) Submit the reports required by §F(1) of this regulation not later than:

(a) March 1 of the following year for reporting periods through December 31, 1995; and

(b) March 1 of each even numbered year for the preceding calendar year for reporting periods beginning January 1, 1997;

and

(4) Assure that the reports required by §F(1) of this regulation contain, at a minimum, the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) For off-site facilities within the United States, the EPA identification number of each hazardous waste generator from whom the facility received a hazardous waste during the year;

(d) For imported shipments, the name and address of the foreign generator;

- (e) A description and the quantity of each hazardous waste the facility received during the year;
- (f) For off-site facilities within the United States, a listing of the information required by §F(4)(e) of this regulation under the EPA identification number of each generator from whom the facility received hazardous waste;
- (g) The method of treatment, storage, or disposal for each hazardous waste;
- (h) The certification signed by the owner or operator of the facility or the owner's or operator's authorized representative;
- (i) The most recent closure cost estimate under Regulation .08 of this chapter and, for disposal facilities, the most recent post-closure cost estimate under Regulation .08 of this chapter;
- (j) For generators who treat, store, or dispose of hazardous waste on site, a description of the efforts undertaken during the year to reduce the volume and toxicity of the waste generated; and
- (k) For generators who treat, store, or dispose of hazardous waste on site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years, except that comparison to years before 1984 is only required to the extent that this information is available.

G. Unmanifested Waste Report.

(1) If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in COMAR 26.13.04.02A(5)(b), and if the waste is not excluded from the manifest requirement by COMAR 26.13.02.05 or by this chapter, then the owner or operator shall prepare and submit a single copy of a report to the Secretary within 15 days after receiving the waste.

(2) The owner or operator shall ensure that the report required by §G(1) of this regulation is clearly marked with the words "unmanifested waste report", and includes the following information:

- (a) The EPA identification number, name, and address of the facility;
- (b) The date the facility received the waste;
- (c) The EPA identification number, name, and address of the generator and the transporter, if available;
- (d) A description and the quantity of each unmanifested hazardous waste the facility received;
- (e) The method of treatment, storage, or disposal for each hazardous waste;
- (f) The certification in COMAR 26.13.07.03D signed by the owner or operator of the facility or the owner or operator's authorized representative; and
- (g) A brief explanation of why the waste was unmanifested, if known.

H. Additional Reports. In addition to submitting the annual report or biennial report, and unmanifested waste reports described in §§F and G of this regulation, the owner or operator shall also report to the Secretary:

- (1) Releases, fires, and explosions as specified in Regulation .04G(10) of this chapter;
- (2) Ground water contamination and monitoring data as specified in Regulation .06-1B and C of this chapter;
- (3) Facility closure as specified in Regulation .07F of this chapter; and
- (4) As otherwise required by Regulations .06—.06-7 and .11—.14 of this chapter.

.06 Ground Water Protection — General.

A. Applicability.

(1) Except as provided in §A(3) of this regulation, Regulations .06—.06-7 of this chapter apply to owners or operators of facilities that treat, store, or dispose of hazardous waste. The owner or operator shall satisfy the requirements identified in §A(2) of this regulation for all wastes or their constituents, contained in solid waste management units at the facility, regardless of the time at which waste was placed in those units.

(2) Owners or operators shall ensure that:

- (a) Solid waste management units comply with the requirements of Regulation .06-7 of this chapter;

DEPARTMENT OF THE ENVIRONMENT

26.13.05.06

(b) A surface impoundment, waste pile, and land treatment unit or landfill that receives a hazardous waste after July 26, 1982, referred to after this as a "regulated unit", complies with the requirements of §B of this regulation and Regulations .06-1—.06-6 of this chapter instead of Regulation .06-7 of this chapter for purposes of detecting, characterizing, and responding to releases to the uppermost aquifer;

(c) Regulated units are operated in compliance with the financial responsibility requirements of Regulation .06-7 of this chapter.

(3) The owner or operator's regulated unit or units are not subject to regulation for releases into the uppermost aquifer under this regulation if one of the following apply:

(a) The owner or operator is exempted under Regulation .01 of this chapter.

(b) The owner or operator operates a unit which the Secretary finds:

(i) Is an engineered structure;

(ii) Does not receive or contain liquid waste or waste containing free liquids;

(iii) Is designed and operated to exclude liquid, precipitation, and other run-on and run-off;

(iv) Has both inner and outer layers of containment enclosing the waste;

(v) Has a leak detection system built into each containment layer;

(vi) Will have continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and post-closure care periods; and

(vii) To a reasonable degree of certainty, does not allow hazardous constituents to migrate beyond the outer containment layer before the end of the post-closure care period.

(c) The Secretary finds, under Regulation .13K of this chapter, that the treatment zone of a land treatment unit that qualifies as a regulated unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of Regulation .13I of this chapter has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this paragraph can only relieve an owner or operator of responsibility to meet the requirements of this regulation during the post-closure care period.

(d) The owner or operator demonstrates to the Secretary's satisfaction that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the regulated unit, including the closure period, and the post-closure care specified under Regulation .07G of this chapter. The owner or operator shall have this demonstration certified by a qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator shall base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

(e) The owner or operator designs and operates a waste pile in compliance with Regulation .12A of this chapter.

(4) Requirements for Disposal Units that Received Last Volume of Waste before July 26, 1982.

(a) An owner or operator of a hazardous waste landfill, land treatment facility, surface impoundment, or waste pile who received the last volume of hazardous waste before July 26, 1982, shall comply with all applicable requirements of COMAR 26.13.06.06—.15, and .19—.22.

(b) The Department may add additional requirements under this regulation if the Secretary determines that these requirements are necessary to protect public health and the environment.

(5) This regulation and Regulations .06-1—.06-7 of this chapter may apply to miscellaneous units when necessary to comply with Regulation .16-1B—D of this chapter.

(6) This regulation and Regulations .06-1—.06-7 of this chapter apply during the:

(a) Active life of the regulated unit, including the closure period;

(b) Post-closure care period under Regulation .07G of this chapter if the owner or operator is conducting a detection monitoring program under Regulation .06-4 of this chapter; and

(c) Compliance period under Regulation .06-1E of this chapter if the owner or operator is conducting a compliance monitoring program under Regulation .06-5 of this chapter or a corrective action program under Regulation .06-6 of this chapter.

(7) This regulation and Regulations .06-1 – .06-7 of this chapter do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure.

B. Required Program.

(1) Compliance Monitoring, Corrective Action, and Detection Monitoring.

(a) Compliance Monitoring.

(i) The owner or operator shall institute a compliance monitoring program approved by the Secretary under Regulation .06-5 of this chapter whenever hazardous constituents from a regulated unit are detected at the compliance point.

(ii) The hazardous constituents to which §B(1)(a)(i) of this regulation applies are determined under Regulation .06-1B of this chapter.

(iii) The compliance point is set under Regulation .06-1D of this chapter.

(iv) Hazardous constituents are considered to have been detected if there is statistically significant evidence of contamination as described in Regulation .06-4G of this chapter.

(b) Corrective Action.

(i) The owner or operator shall institute a corrective action program approved by the Secretary under Regulation .06-6 of this chapter whenever the ground water protection standard under Regulation .06-1A of this chapter is exceeded. The ground water protection standard is considered to have been exceeded if there is statistically significant evidence of contamination as described in Regulation .06-5A(5) of this chapter.

(ii) The owner or operator shall institute a corrective action program approved by the Secretary under Regulation .06-6 of this chapter whenever hazardous constituents from a regulated unit exceed concentration limits in ground water between the compliance point and the down gradient property boundary. The compliance point is set under Regulation .06-1D of this chapter. Concentration limits are established under Regulation .06-1C of this chapter. The hazardous constituents to which this requirement applies are established under Regulation .06-1B of this chapter.

(c) Detection Monitoring. In all cases other than those covered by §B(1)(a) or (b) of this regulation, the owner or operator shall institute a detection monitoring program approved by the Secretary under Regulation .06-4 of this chapter.

(2) Monitoring and Response Program.

(a) The owner or operator of a facility subject to this regulation shall comply with the specific elements of the monitoring and response program specified by the Secretary in the facility permit.

(b) The Secretary may include one or more of the programs identified in §B(1) of this regulation in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Secretary shall consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

.06-1 Ground Water Protection — Program Elements.

A. Ground Water Protection Standard.

(1) During the compliance period established under §E of this regulation, the owner or operator shall comply with conditions specified in the facility permit to ensure that, in the uppermost aquifer underlying the waste management area beyond the point of compliance, hazardous constituents detected in the ground water from a regulated unit do not exceed the concentration limits established under §C of this regulation. The hazardous constituents to which this applies are determined under §B of this regulation. The point of compliance is set under §D of this regulation.

(2) The Secretary shall establish this ground water protection standard in the facility permit when hazardous constituents have been detected in the ground water.

B. Hazardous Constituents.

(1) The facility permit shall specify the hazardous constituents to which the ground water protection standard of §A of this regulation applies.

(2) For the purposes of this regulation, "hazardous constituents" means constituents identified in COMAR 26.13.02.24 that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Secretary has excluded them under §B(3) of this regulation.

(3) The Secretary may exclude a constituent identified in COMAR 26.13.02.24 from the list of hazardous constituents specified in the facility permit if he finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment based on the following considerations:

(a) Potential adverse effects on ground water quality considering:

- (i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;
- (ii) The hydrogeological characteristics of the facility and surrounding land;
- (iii) The quantity of ground water and the direction of ground water flow;
- (iv) The proximity and withdrawal rates of ground water users;
- (v) The current and future uses of ground water in the area;
- (vi) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;
- (vii) The potential for health risks caused by human exposure to waste constituents;
- (viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;
- (ix) The persistence and permanence of the potential adverse effects; and

(b) Potential adverse effects on hydraulically connected surface water quality, considering:

- (i) The volume and physical and chemical characteristics of the waste in the regulated unit;
- (ii) The hydrogeological characteristics of the facility and surrounding land;
- (iii) The quantity and quality of ground water, and the direction of ground water flow;
- (iv) The patterns of rainfall in the region;
- (v) The proximity of the regulated unit to surface waters;
- (vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;
- (vii) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;
- (viii) The potential for health risks caused by human exposure to waste constituents;
- (ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
- (x) The persistence and permanence of the potential adverse effects.

(4) In making any determination under §B(3) of this regulation about the use of ground water in the area around the facility, the Secretary shall consider any identification of underground sources of drinking water and exempted aquifers made by the Approving Authority for the State's Underground Injection Control Program.

C. Concentration Limits.

(1) The facility permit shall specify concentration limits in the ground water for hazardous constituents established under §B of this regulation. The concentration of a hazardous constituent:

(a) May not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit;

(b) For any of the constituents listed in Table 1, may not exceed the respective value given in that table if the background level of the constituent is below the value given in Table 1; or

(c) May not exceed an alternate limit established by the Secretary under §C(2) of this regulation.

(2) The Secretary may establish an alternate concentration limit for a hazardous constituent if the Secretary finds that the constituent does not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. Establishment of alternate concentration limits is based on consideration of the following factors:

(a) Potential adverse effects on ground water quality, considering:

(i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity of ground water and the direction of ground water flow;

(iv) The proximity and withdrawal rates of ground water users;

(v) The current and future uses of ground water in the areas;

(vi) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;

(vii) The potential for health risks caused by human exposure to waste constituents;

(viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(ix) The persistence and permanence of the potential adverse effects; and

(b) Potential adverse effects on hydraulically connected surface water quality, considering:

(i) The volume and physical and chemical characteristics of the waste in the regulated unit of this regulation

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity and quality of ground water, and the direction of ground water flow;

(iv) The patterns of rainfall in the region;

(v) The proximity of the regulated unit to surface waters;

(vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(vii) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(viii) The potential for health risks caused by human exposure to waste constituents;

(ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(x) The persistence and permanence of the potential adverse effects.

(3) In making any determination under §C(2) of this regulation about the use of ground water in the area around the facility, the Secretary shall consider any identification of underground sources of drinking water and exempted aquifers made by the Approving Authority for the State's Underground Injection Control Program.

Table 1
Maximum Concentration of Constituents for Ground Water Protection

<i>Constituent</i>	<i>Maximum Concentration (Milligrams per liter)</i>
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1, 2, 3, 4, 10-hexachloro-1, 7-1 epoxy-1, 4, 4a, 5, 6, 7, 8, 9a-octahydro-1, 4-endo-5, 8-dimethano naphthalene)	0.0002
Lindane (1, 2, 3, 4, 5, 6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1, 1, 1-trichloro-2, 2-bis(p-methoxyphenylethane))	0.1
Toxaphene (C ₁₀ H ₁₀ Cl ₈ , technical chlorinated camphene, 67—69 percent chlorine)	0.005
2,4-D (2,4-dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2, 4, 5-trichlorophenoxypropionic acid)	0.01

D. Point of Compliance.

(1) The Secretary shall specify in the facility permit the point of compliance at which the ground water protection standard of §A of this regulation applies and at which monitoring shall be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

(2) **Waste Management Area.**

(a) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

(b) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

(c) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

E. Compliance Period.

(1) The Secretary shall specify in the facility permit the compliance period during which the ground water protection standard of §A of this regulation applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity before permitting, and the closure period), unless extended by order of the Secretary.

(2) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of Regulation .06-5 of this chapter.

(3) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in §E(1) of this regulation, the compliance period is extended until the owner or operator can demonstrate that the ground water protection standard of §A of this regulation has not been exceeded for a period of 3 consecutive years.

.06-2 General Ground Water Monitoring Requirements.

For any ground water monitoring program developed to satisfy Regulation .06-4, .06-5, or .06-6 of this chapter, the owner or operator shall:

- A. Obtain approval of the Secretary before installation;
- B. Ensure that the ground water monitoring system:
 - (1) Consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground water samples from the uppermost aquifer that represent the quality of background ground water that has not been affected by leakage from a regulated unit; and
 - (2) Satisfies the following conditions if the determination of background water quality includes sampling of wells that are not hydraulically upgradient of the waste management area:
 - (a) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient, and
 - (b) Sampling at other wells will provide an indication of background ground water quality that is as representative as, or more representative than, that provided by the upgradient wells;
- C. Ensure that the ground water monitoring system:
 - (1) Represents the quality of ground water passing the point of compliance; and
 - (2) Allows for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer;
- D. Ensure that separate ground water monitoring systems are provided for each regulated unit unless other provisions for sampling the ground water in the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in the uppermost aquifer;
- E. Ensure that installation of the ground water monitoring system is:
 - (1) Approved by an individual who has:
 - (a) A bachelor's degree in geology or a related field of earth science from an accredited college or university, and
 - (b) At least 3 years experience in the design and installation of these systems; and
 - (2) Conducted in accordance with the requirements of COMAR 26.04.04;
- F. Ensure that each monitoring well meets all of the following requirements:
 - (1) The well is cased in a manner that maintains the integrity of the monitoring well bore hole;
 - (2) The casing is screened or perforated and packed with gravel or sand, when necessary, to enable collection of ground water samples; and
 - (3) The annular space, that is, the space between the bore hole and well casing, above the sampling depth, is sealed to prevent contamination of samples and the ground water;
- G. Ensure that the ground water monitoring program includes consistent sampling and analysis procedures that are designed to provide a reliable indication of ground water quality below the waste management area by including, at a minimum, procedures and techniques for:
 - (1) Sample collection;
 - (2) Sample preservation and shipment;
 - (3) Analytical procedures; and
 - (4) Chain of custody control;
- H. Ensure that the ground water monitoring program includes sampling and analytical methods that are appropriate for ground water sampling and that accurately measure hazardous constituents in ground water samples;

26.13.05.06

I. Ensure that the ground water monitoring program includes a determination of the ground water surface elevation each time ground water is sampled;

J. Satisfy the following conditions in implementing the detection monitoring program as required by Regulation .06-4 of this chapter or in implementing the compliance monitoring program as required by Regulation .06-5 of this chapter:

(1) Collect data on each hazardous constituent specified in the permit to be collected from background wells and wells at the compliance point or points;

(2) Ensure that the number and kinds of samples collected by the owner or operator to establish the background are appropriate for the form of statistical test employed, following generally accepted statistical principles;

(3) Ensure that the sample size is as large as necessary to assure with reasonable confidence that a contaminant release to ground water from a facility will be detected; and

(4) Determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit for specification in the permit upon approval by the Secretary;

K. Ensure that the sampling procedure required by §J of this regulation consists of either:

(1) A sequence of at least four samples taken by the owner or operator at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, considering the:

- (a) Uppermost aquifer's effective porosity,
- (b) Hydraulic conductivity of the uppermost aquifer,
- (c) Hydraulic gradient in the uppermost aquifer, and
- (d) Fate and transport characteristics of the potential contaminants; or

(2) An alternate sampling procedure proposed by the owner or operator and approved by the Secretary.

L. Maintain, as part of the facility operating record, ground water monitoring data collected in accordance with §§J and K of this regulation, including actual levels of constituents;

M. Submit ground water monitoring data collected in accordance with Regulation .06B of this chapter to the Secretary for the Secretary's review on a schedule as specified in the facility CHS permit.

.06-3 Statistical Methods for Evaluating Ground Water Monitoring Data.

A. General.

(1) The owner or operator shall specify, subject to §B of this regulation, a statistical method to be used in evaluating ground water monitoring data for each hazardous constituent identified in accordance with Regulation .06-1B of this chapter.

(2) Once a choice of statistical method is approved by the Secretary, the owner or operator shall use the statistical method as a condition of the owner's or operator's CHS facility permit.

(3) The owner or operator shall conduct the chosen statistical test separately for each hazardous constituent identified in accordance with Regulation .06-1B of this chapter in each well.

(4) If a practical quantification limit (pql) is to be used in a statistical method specified under this section to comply with the performance standards of §C(9) of this regulation, the owner or operator shall propose the pql to the Secretary for approval.

(5) The owner or operator shall ensure that a statistical method specified under this section:

- (a) Is protective of human health and the environment; and
- (b) Complies with the performance standards outlined in §C of this regulation.

B. Statistical Methods. In satisfying the requirement of §A(1) of this regulation, the owner or operator shall specify one of the following statistical methods:

(1) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination, if the method includes estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent;

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.06

(2) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination, if the method includes estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent;

(3) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit;

(4) A control chart approach that gives control limits for each constituent; or

(5) Another statistical test method submitted by the owner or operator and approved by the Secretary.

C. Performance Standards.

(1) The owner or operator shall comply with the following requirements for any statistical method chosen under §§A and B of this regulation for specification in the facility permit.

(2) The owner or operator shall ensure that the statistical method used to evaluate ground water monitoring data is appropriate for the distribution of the chemical parameters or hazardous constituents.

(3) If the distribution of a chemical parameter or hazardous constituent for which data are collected under the ground water monitoring program is inappropriate for a normal theory test, then the owner or operator shall transform the data into an appropriate form or use a distribution-free theory test.

(4) If the statistical distributions for the constituents for which data are collected differ, the owner or operator may use more than one statistical method.

(5) In tests other than those using tolerance intervals, prediction intervals, or control charts, in comparing an individual compliance well constituent concentration with background constituent concentrations or a ground water protection standard, the owner or operator shall ensure that:

(a) If an individual well comparison is used, the Type I error level is not less than 0.01 for each testing period; and

(b) If a multiple comparisons procedure is used, the Type I overall experimental error rate for each testing period is not less than 0.05, and the Type I error of not less than 0.01 for individual well comparisons is maintained.

(6) If a control chart approach is used to evaluate ground water monitoring data, the owner or operator shall propose the specific type of control chart and its associated parameter values for approval by the Secretary, contingent upon the approach being protective of human health and the environment.

(7) Tolerance Intervals.

(a) If a tolerance interval or a prediction interval is used by the owner or operator to evaluate ground water monitoring data, the owner or operator shall propose the following for approval by the Secretary, contingent on values for these parameters being protective of human health and the environment:

(i) Levels of confidence; and

(ii) For tolerance intervals, the percentage of the population that the interval is to contain.

(b) The Secretary shall consider the following in reviewing the parameters proposed under §C(7)(a) of this regulation:

(i) The number of samples in the background data base;

(ii) The data distribution for each constituent of concern; and

(iii) The range of the concentration values for each constituent of concern.

(8) The owner or operator shall ensure that the statistical method accounts for data below the limit of detection with one or more statistical procedures.

(9) In proposing a practical quantification limit (pql) for use in a statistical procedure to account for data below the limit of detection, the owner or operator shall select the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

(10) The owner or operator shall ensure that the statistical method includes procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data, as required.

.06-4 Detection Monitoring Program.

An owner or operator required to establish a detection monitoring program under this regulation shall, at a minimum, discharge the following responsibilities:

A. The owner or operator shall monitor for waste constituents, reaction products, or indicator parameters, such as specific conductance, total organic carbon, or total organic halogen, that provide a reliable indication of the presence of hazardous constituents in ground water, as specified by the Secretary in the facility permit after considering the following factors:

- (1) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;
- (2) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;
- (3) The detectability of indicator parameters, waste constituents, and reaction products in ground water; and
- (4) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground water background;

B. The owner or operator shall install a ground water monitoring system at the compliance point, as specified under Regulation .06-1D of this chapter, that is in compliance with Regulation .06-2C(1), D, and F of this chapter;

C. The owner or operator shall ensure that a detection monitoring program satisfies the following requirements:

(1) The program includes each chemical parameter and hazardous constituent specified in the permit under §A of this regulation in accordance with Regulation .06-2J and K of this chapter; and

(2) The owner or operator maintains a record of ground water analytical data as measured and in a form necessary for the determination of statistical significance under Regulation .06-3A and B of this chapter;

D. The owner or operator shall, at frequencies specified by the Secretary, collect samples and conduct statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit under §A of this regulation in accordance with Regulations .06-2J and K, and .06-3A of this chapter:

E. In complying with the requirements of §D of this regulation, during detection monitoring, the owner or operator shall, at a minimum, collect at least semiannually a sequence of at least four samples from each background and compliance well;

F. The owner or operator shall determine the ground water flow rate and direction in the uppermost aquifer at least annually;

G. The owner or operator shall determine whether there is statistically significant evidence of contamination for any chemical parameter or hazardous constituent specified in the facility CHS permit under §A of this regulation by:

(1) Making the determination at a frequency specified under §D of this regulation;

(2) Using the method or methods specified in the permit under Regulation .06-3A of this chapter to compare data collected at the compliance point or points to the background ground water quality data; and

(3) Determining whether there is statistically significant evidence of contamination at each monitoring well at the compliance point within a reasonable period of time after completion of sampling, as specified by the Secretary in the permit based on:

(a) The complexity of the statistical test; and

(b) The availability of laboratory facilities to perform the analysis of ground water samples;

H. The owner or operator shall comply with the following requirements if the owner or operator determines, in accordance with §G of this regulation, that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified under §A of this regulation at any monitoring well at the compliance point:

(1) Notify the Secretary of this finding in writing within 7 days, indicating what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination;

(2) Immediately sample the ground water in all monitoring wells and determine the concentration of all constituents identified in 40 CFR 264, Appendix IX, that are present in ground water;

(3) Except as provided in §H(6) of this regulation, determine the constituents that will form the basis for compliance monitoring by either:

(a) Resampling ground water within 1 month of the time that constituents identified in 40 CFR 264, Appendix IX, are detected under §H(2) of this regulation, repeating the analysis to determine constituent concentrations, and if the results of the second analysis confirm the presence of compounds detected in the first analysis, using those constituents as the basis for compliance monitoring; or

(b) Using the hazardous constituents found during the initial analysis conducted under §H(2) of this regulation as the basis for compliance monitoring;

(4) Within 90 days, submit to the Secretary an application for a permit modification to establish a compliance monitoring program meeting the requirements of Regulation .06-5 of this chapter, including in the application the following information:

(a) For each monitoring well at the compliance point, the concentration of any constituent listed in 40 CFR 264, Appendix IX, that was found in the ground water;

(b) Any proposed changes to the ground water monitoring system at the facility necessary to meet the requirements of Regulation .06-5 of this chapter;

(c) Any proposed changes to the monitoring frequency, sampling, and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of Regulation .06-5 of this chapter;

(d) For each hazardous constituent found at the compliance point, a proposed concentration limit under Regulation .06-1C(1)(a) or (b) of this chapter, or a notice of intent to seek an alternative concentration limit under Regulation .06-1C(2) of this chapter;

(5) Within 180 days, submit to the Secretary:

(a) All data necessary to justify an alternate concentration limit sought under Regulation .06-1C(2) of this chapter; and

(b) An engineering feasibility plan for a corrective action program necessary to meet the requirements of Regulation .06-6 of this chapter, unless:

(i) All hazardous constituents identified under §H(2) of this regulation are listed in Table 1 of Regulation .06-1C(3) of this chapter and their concentrations do not exceed the respective values given in that table, or

(ii) The owner or operator has sought an alternate concentration limit under Regulation .06-1C(2) of this chapter for each hazardous constituent identified under §H(2) of this regulation;

(6) If the resampling conducted under §H(3)(a) of this regulation does not confirm the initial results, then the owner or operator may remain in detection monitoring, and need not make the submissions required by §H(4) and (5) of this regulation;

I. If the owner or operator determines under §G of this regulation that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified under §A of this regulation at any monitoring well at the compliance point, the owner or operator may attempt to demonstrate that:

(1) A source other than a regulated unit caused the contamination; or

(2) The finding of statistically significant evidence of contamination resulted from error in sampling, analysis, or statistical evaluation, or from natural variation in ground water;

J. The owner or operator shall submit an application for a permit modification within the time specified in §H(4) of this regulation unless a demonstration made under §I of this regulation successfully shows that:

(1) A source other than a regulated unit caused the contamination; or

(2) The finding of statistically significant evidence of contamination resulted from error in sampling, analysis, or statistical evaluation, or from natural variation in ground water;

K. In making a demonstration under §I of this regulation, the owner or operator shall:

(1) Notify the Secretary in writing, within 7 days of determining that there is statistically significant evidence of contamination at the compliance point, of the intention to make a demonstration under §I of this regulation;

(2) Within 90 days, submit a report to the Secretary which demonstrates that a source other than a regulated unit caused the contamination, or that the finding of statistically significant evidence of contamination resulted from error in sampling, analysis, or evaluation, or from natural variation in the ground water;

(3) Within 90 days, submit to the Secretary an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and

(4) Continue to monitor in accordance with the detection monitoring program established under this regulation;

L. If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this regulation, the owner or operator shall, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

.06-5 Compliance Monitoring.

A. Compliance Monitoring Program. An owner or operator required to establish a compliance monitoring program under this regulation shall, at a minimum, discharge the following responsibilities:

(1) Monitor the ground water to determine whether regulated units are in compliance with the ground water protection standard under Regulation .06-1A of this chapter;

(2) Comply with the ground water protection standard specified by the Secretary in the facility permit, including the:

(a) List of the hazardous constituents identified in accordance with Regulation .06-1B of this chapter;

(b) Concentration limits specified in accordance with Regulation .06-1C of this chapter for each of the hazardous constituents in §A(2)(a) of this regulation;

(c) Compliance point specified in accordance with Regulation .06-1D of this chapter; and

(d) Compliance period specified in accordance with Regulation .06-1E of this chapter;

(3) Install a ground water monitoring system at the compliance point as specified under Regulation .06-1D of this chapter that complies with the requirements of Regulation .06-2B—D and F of this chapter;

(4) Use sampling procedures and statistical methods appropriate for the constituents and the facility, in accordance with Regulations .06-2J and K and .06-3A and B of this chapter, as follows:

(a) Implement a sampling program as specified by the Secretary in the facility CHS permit;

(b) Conduct a sampling program for each chemical parameter or hazardous constituent in accordance with Regulation .06-2J and K of this chapter; and

(c) Record ground water analytical data as measured and in a form necessary for the determination of statistical significance under Regulation .06-3A and B of this chapter for the compliance period of the facility;

(5) Make a determination as to whether there is evidence of increased contamination in accordance with the following:

(a) Determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the CHS facility permit under §A(1) and (2) of this regulation at a frequency specified under §A(7) and (8) of this regulation;

(b) Use the methods specified in the CHS facility permit under Regulation .06-3A and B of this chapter to make the determination under §A(5)(a) of this regulation;

(c) Ensure that the methods under §A(5)(b) of this regulation compare data collected at the compliance point or points to a concentration limit developed under Regulation .06-1C of this chapter;

(d) Make the determination of whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point within a reasonable time period after the completion of sampling, as specified by the Secretary in the facility's CHS permit after consideration of the following:

(i) The complexity of the statistical test; and

(ii) The availability of the laboratory facilities to perform the analysis of ground water samples;

(6) Determine the ground water flow rate and direction in the uppermost aquifer at least annually;

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.06

(7) Ensure that the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with Regulation .06-2J and K of this chapter are in accordance with the requirements specified by the Secretary in the facility's CHS permit;

(8) Collect a sequence of at least four samples from each well, including background and compliance wells, at least semiannually during the compliance period of the facility;

(9) Analyze samples from all monitoring wells at the compliance point for all constituents listed in 40 CFR 264, Appendix IX, at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer and, if so, at what concentration, in accordance with procedures under Regulation .06-4G of this chapter;

(10) If constituents listed in 40 CFR 264, Appendix IX, are found in the ground water under §A(9) of this regulation, and some of these constituents have not already been identified in the facility's CHS permit as monitoring constituents, the owner or operator shall either:

(a) Report the concentrations of the newly identified constituents to the Secretary within 7 days after the initial analysis and add them to the facility's monitoring list; or

(b) Resample within 1 month and repeat the analysis for constituents listed in 40 CFR 264, Appendix IX, and comply with the following requirements:

(i) Report the results of the analysis to the Secretary within 7 days of the completion of the second analysis; and

(ii) If the results of the resampling confirm the initial testing results, add the constituents to the list of constituents monitored under the facility's permit;

(11) Comply with the following requirements if the owner or operator determines, under §A(5) of this regulation, that any concentration limit under Regulation .06-1C of this chapter is being exceeded at any monitoring well at the point of compliance:

(a) Notify the Secretary of this finding in writing within 7 days, indicating in the notification the concentration limits that have been exceeded;

(b) Submit to the Secretary an application for a permit modification to establish a corrective action program meeting the requirements of Regulation .06-6 of this chapter within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Secretary under Regulation .06-4H(5) of this chapter, unless the facility permit already includes that corrective action program;

(c) Include at a minimum, in the application submitted in accordance with §A(11)(b) of this regulation, the following information:

(i) A detailed description of corrective actions that will achieve compliance with the ground water protection standard specified in the permit under §A(1) and (2) of this regulation; and

(ii) A plan for a ground water monitoring program that will demonstrate the effectiveness of the corrective action, and that may be based on a compliance monitoring program developed to meet the requirements of this regulation.

B. Demonstration of Alternate Cause of Exceedence.

(1) If the owner or operator determines, in accordance with §A(5) of this regulation, that any ground water concentration limits under this regulation are being exceeded at any monitoring well at the point of compliance, the owner or operator may attempt to demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact from either an error in sampling, analysis, or statistical evaluation, or from natural variation in the ground water.

(2) In making a demonstration under this section, the owner or operator shall:

(a) Notify the Secretary in writing, within 7 days of determining that a ground water concentration limit has been exceeded, of the intention to make a demonstration under this section;

(b) Within 90 days, submit a report to the Secretary which demonstrates that a source other than a regulated unit caused the standards to be exceeded or that the apparent noncompliance with the standards resulted from an error in sampling, analysis, or evaluation, or from natural variation in the ground water;

(c) Within 90 days, submit to the Secretary an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and

26.13.05.06

(d) Continue to monitor in accordance with the compliance monitoring program established under this regulation.

C. If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this regulation, the owner or operator shall, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

.06-6 Corrective Action Program.

A. Corrective Action Program Content. An owner or operator required to establish a corrective action program under this regulation shall, at a minimum, discharge the following responsibilities:

(1) Take corrective action measures to ensure that regulated units are in compliance with the ground water protection standards under Regulation .06-1A of this chapter specified by the Secretary in the facility permit, including:

- (a) A list of the hazardous constituents identified under Regulation .06-1B of this chapter;
- (b) The concentration limits under Regulation .06-1C of this chapter for each of those hazardous constituents in §A(1)(a) of this regulation;
- (c) The compliance point under Regulation .06-1D of this chapter; and
- (d) The compliance period under Regulation .06-1E of this chapter;

(2) Implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place, in accordance with the measures specified in the facility permit;

(3) Begin corrective action within a reasonable time period after the ground water protection standard is exceeded, as specified by the Secretary in the facility permit;

(4) In conjunction with the corrective action program, establish and implement a ground water monitoring program to demonstrate the effectiveness of the corrective action program;

(5) Ensure that the ground water monitoring program, under §A(4) of this regulation, which may be based on the requirements for a compliance monitoring program under Regulation .06-5 of this chapter, is as effective as the compliance monitoring program in determining:

- (a) Compliance with the ground water protection standard under Regulation .06-1A of this chapter; and
- (b) The success of a corrective action program under §A(6) of this regulation, when appropriate;

(6) Comply with the following requirements for the corrective action program:

(a) In addition to the other requirements of this chapter, conduct a corrective action program to remove or treat in place any hazardous constituents under Regulation .06-1B of this chapter that exceed concentration limits under Regulation .06-1C of this chapter in ground water:

(i) Between the compliance point under Regulation .06-1D of this chapter and the downgradient facility property boundary; and

(ii) Beyond the facility boundary when necessary to protect human health and the environment, except as provided in §A(6)(b) of this regulation;

(b) Instead of the requirements of §A(6)(a)(ii) of this regulation to conduct a corrective action program beyond the facility boundary, implement on-site measures as determined by the Secretary on a case-by-case basis to address any release that has migrated beyond the facility boundary, if the owner or operator is able to demonstrate to the Secretary's satisfaction that, despite best efforts, the owner or operator was unable to obtain the necessary permission to undertake a corrective action program beyond the facility boundary;

(c) Initiate and complete corrective action measures under this regulation within a reasonable period of time, considering the extent of contamination;

(d) Continue implementing corrective action measures under this regulation at least until the concentrations of hazardous constituents under Regulation .06-1B of this chapter are reduced to levels below their respective concentration limits under Regulation .06-1C of this chapter.

B. Program Duration, Reporting Requirements, and Modification. An owner or operator required to conduct a corrective action program under the requirements of this regulation shall:

(1) Comply with the following requirements concerning the duration of corrective action measures:

(a) Continue corrective action measures during the compliance period to the extent necessary to ensure that the ground water protection standard is not exceeded;

(b) If the owner or operator is conducting corrective action at the end of the compliance period, continue the corrective action for as long as necessary to achieve compliance with the ground water protection standard;

(c) Continue corrective action measures taken beyond the period equal to the active life of the waste management area, including the closure period, at least until the owner or operator can demonstrate, based on data from the ground water monitoring program under §A(4) and (5) of this regulation, that the ground water protection standard of Regulation .06-1A of this chapter has not been exceeded for a period of 3 consecutive years;

(2) Report in writing to the Secretary on the effectiveness of the corrective action program through reports submitted semiannually;

(3) Within 90 days of determining that the corrective action program no longer satisfies the requirements of this regulation, submit an application for a permit modification to make any appropriate changes to the program.

.06-7 Corrective Action for Solid Waste Management Units.

A. The owner or operator of a facility seeking a permit for the treatment, storage, or disposal of hazardous waste shall institute corrective action as necessary to protect human health and the environment from all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit.

B. Corrective action shall be specified in the permit. If the corrective action cannot be completed before issuance of the permit, the permit shall contain schedules of compliance for the corrective action and assurances of financial responsibility for completing the corrective action.

C. Except as provided in §D of this regulation, in complying with the requirements of §A of this regulation, the owner or operator shall implement corrective actions beyond the facility property boundary when necessary to protect human health and the environment.

D. The owner or operator is not subject to the requirement of §C of this regulation to implement corrective actions beyond the facility property boundary if the owner or operator is able to demonstrate to the Secretary's satisfaction that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake the corrective actions. Instead, the owner or operator shall implement on-site measures as determined by the Secretary on a case-by-case basis to address any release that has migrated beyond the facility boundary, and provide assurances of financial responsibility for the corrective action.

.07 Closure and Post-Closure.

A. Applicability. Except as Regulation .01 of this chapter otherwise provides:

(1) Sections B—F(1) of this regulation, which concern closure, apply to the owners and operators of all hazardous waste facilities; and

(2) Sections F(2)—J of this regulation, which concern post-closure care, apply to the owners and operators of:

(a) All hazardous waste disposal facilities;

(b) Waste piles and surface impoundments from which the owner or operator intends to remove the waste at closure, to the extent that §§G—J of this regulation are made applicable to the facilities in Regulation .11G or .12I of this chapter;

(c) Tank systems that are required under Regulation .10-7 of this chapter to meet the requirements for landfills;

(d) Containment buildings that are required under Regulation .18-3C of this chapter to meet the requirements for landfills; and

(e) Hazardous waste munitions and explosives storage units that are required under Regulation .21C(3) of this chapter to meet the requirements for landfills.

26.13.05.07

B. Closure Performance Standard. The owner or operator of a facility shall close the facility in a manner that:

(1) Minimizes the need for further maintenance;

(2) Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or waste decomposition products to the ground water, or surface waters, or to the atmosphere; and

(3) Complies with the closure requirements:

(a) Of this regulation; and

(b) Referenced in this regulation and this chapter, including, but not limited to, closure requirements of Regulations .09I, .10-7, .11G, .12I, .13K, .14J, .16L, .16-1B--D, .18-3, and .21C of this chapter.

C. Closure Plan; Amendment of Plan.

(1) Written Plan.

(a) The owner or operator of a hazardous waste management facility shall:

(i) Have a written closure plan;

(ii) Have contingent closure plans for certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure as required by Regulations .11G(3)(a) and .12I(3)(a) of this chapter;

(iii) Submit the required closure plan with the permit application;

(iv) Obtain the approval of the Secretary as part of the permit issuance procedures under COMAR 26.13.07; and

(v) Comply with the provisions of the approved closure plan, which will become a condition of any CHS facility permit.

(b) The Secretary's approval of the plan shall ensure that the approved closure plan is consistent with §§B —F(1) of this regulation and the applicable requirements of Regulations .06— .06-7, .09I, .10-7, .11G, .12I, .13K, .14J, .16L, .16-1B, .18-3, and .21C of this chapter.

(c) Until final closure is certified in accordance with §F of this regulation, the owner or operator shall, upon request by the Secretary, including requests by mail, furnish the Secretary with a copy of the approved plan and all approved revisions.

(2) Content of the Plan. The plan shall identify steps necessary to perform partial or final closure of the facility at any point during its active life. The closure plan shall include, at least:

(a) A description of how each hazardous waste management unit at the facility will be closed in accordance with §B.

(b) A description of how final closure of the facility will be conducted in accordance with §B of this regulation. The description shall identify the maximum extent of the operations which will be unclosed during the active life of the facility.

(c) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type or types of the off-site hazardous waste management units to be used, if applicable.

(d) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard.

(e) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including but not limited to ground water monitoring, leachate collection, and run-on and run-off control.

(f) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule shall include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.07

landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover shall be included.)

(g) For facilities that use trust funds to establish financial assurance under Regulation .08 and that are expected to close before the expiration of the permit, an estimate of the expected year of final closure.

(3) Amendment of the Plan.

(a) The owner or operator shall submit a written request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the procedures in COMAR 26.13.07. The written request shall include a copy of the amended closure plan for approval by the Secretary.

(b) The owner or operator may submit a written request to the Secretary for a permit modification to amend the closure plan at any time before the notification of partial or final closure of the facility.

(c) The owner or operator shall submit a written request for a permit modification to authorize a change in the approved closure plan whenever:

(i) Changes in operating plans or facility design affect the closure plan;

(ii) There is a change in the expected year of closure, if applicable; or

(iii) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

(d) The owner or operator shall submit a written request for a permit modification including a copy of the amended closure plan for approval at least 60 days before the proposed change in facility design or operation, or not later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator shall request a permit modification not later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under Regulation .11G(3)(a) or .12I(3)(a), of this chapter, shall submit an amended closure plan to the Secretary not later than 60 days from the date that the owner or operator or Secretary determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Regulation .14J, of this chapter, or not later than 30 days from that date if the determination is made during partial or final closure. The Secretary will approve, disapprove, or modify this amended plan in accordance with the procedures in COMAR 26.13.07. The approved closure plan will become a condition of any CHS facility permit issued.

(e) The Secretary may request modifications to the plan under the conditions described in §C(3)(b) of this regulation. The owner or operator shall submit the modified plan within 60 days of the Secretary's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the Secretary will be approved in accordance with the procedures in COMAR 26.13.07.

(4) Notification of Partial Closure and Final Closure.

(a) The owner or operator of a facility shall notify the Secretary in writing at least:

(i) 60 days before the date on which the owner or operator expects to begin closure of a surface impoundment, waste pile, land treatment unit or landfill unit, or final closure of a facility with such a unit; and

(ii) 45 days before the date on which the owner or operator expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed.

(b) For the purpose of §C(4)(a) of this regulation, the date when the owner or operator expects to begin closure shall be:

(i) Within 30 days after the date on which any hazardous waste management unit or facility received the known final volume of hazardous waste;

(ii) Not later than 1 year after the date on which the unit received the most recent volume of hazardous waste, if there is a reasonable possibility that the hazardous waste management unit or facility will receive additional hazardous waste; or

(iii) A later deadline established by the Secretary under §C(4)(c) of this regulation.

26.13.05.07

(c) The Secretary may approve an extension to the 1-year limit in §C(4)(b)(ii) of this regulation if the owner or operator can demonstrate to the Secretary that:

- (i) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and
- (ii) The owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.

(d) If the owner or operator has been allowed to receive non-hazardous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous waste as provided by §D(6) of this regulation, the date when the owner or operator expects to begin closure for the purpose of §C(4)(a) of this regulation shall be not later than:

- (i) 30 days after the date on which the hazardous waste management unit receives the known final volume of non-hazardous wastes;
- (ii) 1 year after the date on which the unit received the most recent volume of non-hazardous waste, if there is a reasonable possibility that the unit will receive additional non-hazardous wastes; or
- (iii) A later deadline established by the Secretary under §C(4)(c) of this regulation.

(e) The Secretary may approve an extension to the 1-year limit in §C(4)(d)(ii) of this regulation if the owner or operator can demonstrate to the Secretary that:

- (i) The hazardous waste management unit has the capacity to receive additional non-hazardous waste; and
- (ii) The owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.

(f) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under Environment Article, Title 7, Subtitle 2, Annotated Code of Maryland, to cease receiving hazardous wastes or to close, then the requirements of §C(4)(a) — (e) of this regulation do not apply. Instead, the owner or operator shall close the facility in accordance with the deadlines established in §D of this regulation.

(5) Removal of Wastes and Decontamination or Dismantling of Equipment. Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

D. Closure; Time Allowed for Closure.

(1) Except as provided in §D(2) of this regulation, within 90 days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, or the final volume of non-hazardous wastes if the owner or operator complies with all the requirements in §D(6)—(8) of this regulation, the owner or operator shall treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan.

(2) The Secretary may approve a longer period than that specified in §D(1) of this regulation if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that the owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, and either:

(a) The activities required to comply with §D(1) of this regulation either will, of necessity, take longer than 90 days to complete; or

(b) The following conditions are met:

(i) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the owner or operator complies with the requirements of §D(6)—(8) of this regulation,

(ii) There is a reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within 1 year, and

(iii) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site.

(3) Except as provided in §D(4) of this regulation, the owner or operator shall, within 180 days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility, or the final volume of non-hazardous wastes if the owner or operator complies with the requirements of §D(6) – (8) of this regulation, complete partial and final closure activities in accordance with the approved closure plan.

(4) The Secretary may approve an extension to the closure period specified in §D(3) of this regulation if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that the owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements, and either:

(a) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

(b) The following conditions are met:

(i) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site;

(ii) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes or has the capacity to receive non-hazardous wastes if the owner or operator complies with the requirements of §D(6) — (8) of this regulation; and

(iii) There is reasonable likelihood that the owner or operator will recommence operation of the hazardous waste management unit or facility within 1 year.

(5) The demonstrations referred to in §D(2) and (4) of this regulation shall be made as follows:

(a) The demonstration in §D(2) of this regulation shall be made at least 30 days before the expiration of the 90-day period in §D(1) of this regulation; and

(b) The demonstration in §D(4) of this regulation shall be made at least 30 days before the expiration of the 180-day period in §D(3) of this regulation.

(6) The Secretary may allow an owner or operator to receive only non-hazardous wastes in a landfill, land treatment unit, or surface impoundment unit after the final receipt of hazardous wastes at the unit if the owner or operator:

(a) Submits a request for a CHS permit modification in accordance with the requirements of COMAR 26.13.07; and

(b) Demonstrates in the request for permit modification required by §D(6)(a) of this regulation that:

(i) The unit has the existing design capacity, as indicated on the part A permit application, to receive non-hazardous wastes;

(ii) There is a reasonable likelihood that the owner or operator or another person will receive non-hazardous wastes in the unit within 1 year after the final receipt of hazardous wastes;

(iii) The non-hazardous wastes will not be incompatible with any remaining wastes in the unit, or with the design and operating requirements of the unit or facility;

(iv) Closure of the hazardous waste management unit would be incompatible with the continued operation of the unit or facility; and

(v) The owner or operator is operating and will continue to operate in compliance with all applicable permit requirements;

(c) Includes, in the request to modify the permit:

(i) An amended waste analysis plan;

(ii) A ground water monitoring and response program;

(iii) The human exposure assessment required under RCRA §3019; and

(iv) Closure and post-closure plans;

DEPARTMENT OF THE ENVIRONMENT

26.13.05.07

(d) Includes, in the request to modify the permit, updated cost estimates and demonstrations of financial assurance for closure and post-closure as necessary and appropriate to reflect any:

(i) Changes due to the presence of hazardous constituents in the non-hazardous waste; and

(ii) Changes in closure activities, including the expected year of closure if applicable under §C(2)(g) of this regulation, as a result of the receipt of non-hazardous wastes following the final receipt of hazardous wastes;

(e) Includes, in the request to modify the permit, all revisions to affected conditions of the permit as necessary and appropriate, to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes;

(f) Submits the request to modify the permit and the demonstrations referred to in §D(6)(a)—(d) of this regulation to the Secretary within the later of the following two time periods:

(i) Not later than 120 days before the date on which the owner or operator of the facility received the known final volume of hazardous wastes; or

(ii) Not later than 90 days after October 16, 2000;

(g) Complies with the requirements of §D(7) and (8) of this regulation if the owner or operator is seeking to receive additional wastes in a surface impoundment that is not in compliance with the liner and leachate collection system requirements of:

(i) §3004(o)(1) of RCRA, except as otherwise provided in §3004(o)(2) and (3) of RCRA; and

(ii) §3005(j)(1) of RCRA, except as otherwise provided in §3005(j)(2), (3) (4) or (13) of RCRA; and

(h) Complies with applicable requirements to obtain permits under:

(i) COMAR 26.04.07, and

(ii) COMAR 26.11.19.20.

(7) In addition to the requirements of §D(6) of this regulation, the owner or operator of a hazardous waste surface impoundment identified in §D(6)(g) of this regulation shall:

(a) Submit, with the request for permit modification required by §D(6)(a) of this regulation:

(i) A contingent corrective measures plan, unless the owner or operator has already submitted a corrective action plan under Regulation .06-5 of this chapter; and

(ii) A plan for removing hazardous wastes in compliance with §D(7)(b) of this regulation;

(b) Remove all hazardous wastes from the unit by removing all hazardous liquids, and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner or liners, if any;

(c) Complete the removal of hazardous wastes from the unit not later than:

(i) 90 days after the final receipt of hazardous wastes; or

(ii) A later deadline approved by the Secretary if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than 90 days to complete, and that an extension beyond the 90-day deadline will not pose a threat to human health and the environment;

(d) Comply with the following requirements if there is a release detected in accordance with the requirements of Regulations .06—.06-7 of this chapter that is a statistically significant increase over background values for detection monitoring parameters or constituents specified in the permit, that is a statistically significant decrease with respect to background values in the case of pH if pH is specified in the permit, or that exceeds the facility's ground water protection standard at the point of compliance, if applicable:

(i) Implement corrective measures in accordance with the approved contingent corrective measures plan required by §D(7)(a)(i) of this regulation not later than 1 year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;

(ii) Discontinue receipt of wastes at the unit following detection of the release unless the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action;

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.07

- (iii) Implement corrective measures in less than 1 year if required by the Secretary on the basis that doing so is necessary to protect human health and the environment; and
- (iv) Cease the receipt of wastes if required by the Secretary on the basis that doing so is necessary to protect human health and the environment;
- (c) Provide semiannual reports to the Secretary during the period of corrective action that:
 - (i) Describe the progress of the corrective action program;
 - (ii) Compile all ground water monitoring data; and
 - (iii) Evaluate the effect of the continued receipt of non-hazardous waste on the effectiveness of the corrective action;and
- (f) Commence closure of the unit if required to do so by the Secretary, based on the owner or operator failing to:
 - (i) Implement corrective action measures in accordance with the approved contingent corrective measures plan required by §D(7)(a)(i) of this regulation within 1 year, as required by §D(7)(d)(i) of this regulation; or
 - (ii) Make substantial progress in implementing corrective action and achieving the facility's ground water protection standard, or background levels if the facility has not yet established a ground water protection standard.
- (8) The following requirements apply if the owner or operator fails to implement corrective measures as required by §D(7)(d) of this regulation, or if the Secretary determines, under §D(7)(f)(ii) of this regulation, that the owner or operator has not made substantial progress in implementing corrective action and achieving the goals of the corrective action program:
 - (a) The Secretary shall notify the owner or operator in writing that the owner or operator shall begin closure in accordance with the deadlines in §D(1)—(4) of this regulation, and provide a detailed statement of the reasons for this determination;
 - (b) The Secretary shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision described in §D(8)(a) of this regulation not later than 20 days after the date of the notice;
 - (c) If the Secretary receives no written comments in response to the notice described in §D(8)(b) of this regulation:
 - (i) The decision described in §D(8)(a) of this regulation becomes final 5 days after the close of the public comment period under §D(8)(b) of this regulation;
 - (ii) The Secretary shall notify the owner or operator that the decision described in §D(8)(a) of this regulation is final;
 - (iii) The Secretary shall notify the owner or operator that the owner or operator shall submit a revised closure plan, if necessary, within 15 days of the final notice; and
 - (iv) The Secretary shall notify the owner or operator that the owner or operator shall begin closure in accordance with the deadlines in §D(1)—(4) of this regulation;
 - (d) If the Secretary receives written comments in response to the notice described in §D(8)(b) of this regulation, the Secretary shall:
 - (i) Make a final decision within 30 days after the end of the comment period; and
 - (ii) Provide a detailed statement of the reasons for the final decision to the owner or operator in writing, and to the public through a newspaper notice;
 - (e) If the Secretary's decision under §D(8)(d)(i) of this regulation is that the owner or operator has not made substantial progress under §D(7)(f)(ii) of this regulation in implementing corrective action and achieving the goals of the corrective action program, the owner or operator shall initiate closure in accordance with the deadlines in §D(1)—(4) of this regulation; and
 - (f) The final determinations made by the Secretary under §D(8)(c) and (d) of this regulation are not subject to administrative appeal.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.07

(9) For the purposes of determining deadlines under this section, the date of receiving the final volume of hazardous waste at a hazardous waste management unit or facility includes the date:

- (a) The facility's permit is terminated; and
- (b) The facility is ordered to cease receiving hazardous waste or to close, as described in §C(4)(f) of this regulation.

E. Disposal or Decontamination of Equipment, Structures, and Soils. During the partial and final closure periods, all contaminated equipment, structures, and soils shall be properly disposed of or decontaminated unless otherwise specified in Regulations .10-7C, .11G, .12I, .13K, .14J, or .16-1B and D of this chapter. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and shall handle that waste in accordance with all applicable requirements of COMAR 26.13.03.

F. Certification of Closure.

(1) Within 60 days of completion of closure of each hazardous surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of the completion of final closure, the owner or operator shall submit to the Secretary, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification shall be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification shall be furnished to the Secretary upon request until the Secretary releases the owner or operator from the financial assurance requirements for closure under Regulation .08 of this chapter.

(2) Survey Plat. Not later than at the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Secretary, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, shall contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable requirements of Regulations .07 and .11—.14 of this chapter.

G. Post-Closure Care and Use of Property.

(1) Post-closure care for each hazardous waste management unit subject to the requirements of §§G—J of this regulation shall begin after completion of closure of the unit and continue for 30 years after that date and shall consist of at least the following:

- (a) Monitoring and reporting in accordance with the requirements of Regulations .06—.06-7, .11—.14, and .16-1 of this chapter; and
- (b) Maintenance and monitoring of waste containment systems in accordance with the requirements of Regulations .06—.06-7, .11—.14, and .16-1 of this chapter.

(2) At any time preceding partial closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or at any time during the post-closure period for a particular unit, the Secretary may, in accordance with the permit modification procedures in COMAR 26.13.07:

(a) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he finds that the reduced period is sufficient to protect human health and the environment, such as when leachate or ground water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure; or

(b) Extend the post-closure care period applicable to the hazardous waste management unit or facility if he finds that the extended period is necessary to protect human health and the environment, such as when leachate or ground water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment.

(3) The Secretary may require, at partial and final closure, continuation of any of the security requirements of Regulation .02E during part or all of the post-closure period when:

- (a) Hazardous wastes may remain exposed after completion of partial or final closure; or

(b) Access by the public or domestic livestock may pose a hazard to human health.

(4) Post-closure use of property on or in which hazardous wastes remain after partial or final closure may not disturb the integrity of the final cover, liner or liners, or any other components of the containment system, or the function of the facility's monitoring systems, unless the Secretary finds that the disturbance:

(a) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(b) Is necessary to reduce a threat to human health or the environment.

(5) All post-closure care activities shall be in accordance with the provisions of the approved post-closure plan as specified in §H of this regulation.

II. Post-Closure Plan; Amendment of Plan.

(1) Written Plan.

(a) The owner or operator of a hazardous waste disposal unit shall have a written post-closure plan.

(b) In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by Regulations .11G(3)(b) and .12I(3)(b) of this chapter to have contingency post-closure plans.

(c) Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent post-closure plans under Regulations .11G(3)(b) and .12I(3)(b) of this chapter shall submit a post-closure plan to the Secretary within 90 days from the date that the owner or operator or Secretary determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of §§G—J of this regulation.

(d) The plan shall be submitted with the permit application in accordance with COMAR 26.13.07.02D(29) and approved by the Secretary as part of the permit issuance procedures under COMAR 26.13.07.20— .20-6.

(e) In accordance with COMAR 26.13.07.05, the approved post-closure plan will become a condition of any permit issued.

(2) For each hazardous waste management unit subject to the requirements of this section, the post-closure plan shall identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(a) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Regulations .06— .06-7, .11— .14, and .16-1 of this chapter during the post-closure care period;

(b) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(i) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Regulations .06— .06-7, .11— .14, and .16-1 of this chapter, and

(ii) The function of the monitoring equipment in accordance with the requirements of Regulations .06— .06-7, .11— .14, and .16-1 of this chapter; and

(c) The name, address, and telephone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(3) Until final closure of the facility, a copy of the approved post-closure plan shall be furnished to the Secretary upon request, including request by mail. After final closure has been certified, the person or office specified in §H(2)(c) shall keep the approved post-closure plan during the remainder of the post-closure period.

(4) Amendment of Plan.

(a) The owner or operator shall request a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements of COMAR 26.13.07. The written request shall include a copy of the amended post-closure plan for approval by the Secretary.

(b) The owner or operator may submit a written request to the Secretary for a permit modification to amend the post-closure plan at any time during the active life of the facility or during the post-closure care period.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.07

(c) The owner or operator shall submit a written request for a permit modification to authorize a change in the approved post-closure plan whenever:

- (i) Changes in operating plans or facility design affect the approved post-closure plan;
- (ii) There is a change in the expected year of final closure, if applicable; or
- (iii) Events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan.

(d) The owner or operator shall submit a written request for a permit modification at least 60 days before the proposed change in facility design or operation, or not later than 60 days after an unexpected event has occurred which has affected the post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under Regulations .11G(3)(b) and .12I(3)(b) of this chapter, shall submit a post-closure plan to the Secretary not later than 90 days after the date that the owner or operator or Secretary determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Regulation .14I of this chapter. The Secretary will approve, disapprove, or modify this plan in accordance with the procedures in COMAR 26.13.07. In accordance with COMAR 26.13.07.05, the approved post-closure plan will become a permit condition.

(e) The Secretary may request modifications to the plan under the conditions described in §H(4)(c), of this regulation. The owner or operator shall submit the modified plan not later than 60 days after the Secretary's request, or not later than 90 days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent post-closure plan. Any modifications requested by the Secretary will be approved, disapproved, or modified in accordance with the procedures in COMAR 26.13.07.

I. Post-Closure Notices.

(1) Not later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Secretary, a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator shall identify the type, location, and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

(2) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator shall:

(a) Record a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

- (i) The land has been used to manage hazardous wastes;
- (ii) Its use is restricted under COMAR 26.13.05.07; and

(iii) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by §§F(2) and I(1) of this regulation have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Secretary;

(b) Submit a certification, signed by the owner or operator, that he has recorded the notation specified in §I(2)(a), of this regulation, including a copy of the document in which the notation has been placed, to the Secretary.

(3) If the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, the owner or operator shall request a modification to the post-closure permit in accordance with the applicable requirements in COMAR 26.13.07.

(4) The owner or operator shall demonstrate that the removal of hazardous wastes from a hazardous waste disposal unit will satisfy the criteria of §G(4) of this regulation. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and shall manage it in accordance with all applicable requirements of COMAR 26.13.03. If the owner or

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.09

operator is granted a permit modification or otherwise granted approval to conduct the removal activities, the owner or operator may request that the Secretary approve either:

(a) The removal of the notation on the deed to the facility property or other instrument normally examined during title search; or

(b) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

J. Certification of Completion of Post-Closure Care.

(1) Not later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator shall submit to the Secretary, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan.

(2) The certification required by §J(1) of this regulation shall be signed by the owner or operator and an independent registered professional engineer.

(3) Documentation supporting the independent registered professional engineer's certification shall be furnished to the Secretary upon request until the owner or operator is released from the financial assurance requirements for post-closure care under 40 CFR §264.145(i), as incorporated by reference in Regulation .08 of this chapter.

.08 Financial Requirements.

A. Except as provided in §B of this regulation, the Department adopts as its regulations the federal regulations at 40 CFR §§264.140--264.148 and 264.151, which are incorporated by reference in COMAR 26.13.01.05B(1)(a).

B. For purposes of this regulation:

(1) Substitute "Secretary" for "Regional Administrator";

(2) Substitute "Department" for "Environmental Protection Agency" or "Agency";

(3) In establishing the financial assurance for closure required by 40 CFR §264.143, a person may not use the financial test or corporate guarantee described in 40 CFR §264.143(f); and

(4) In establishing the financial assurance for post-closure care required by 40 CFR §264.145, a person may not use the financial test or corporate guarantee described in 40 CFR §264.145(f) which is incorporated by reference.

.09 Use and Management of Containers.

A. Applicability. This regulation applies to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as Regulation .01 of this chapter otherwise provides.

B. Condition of Containers. If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this chapter.

C. Compatibility of Waste with Container. The owner or operator shall use a container made of or lined with materials which do not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

D. Management of Containers. A container holding hazardous waste shall always be closed during storage, except when it is necessary to add or remove waste, and the container may not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

E. Inspections. The owner or operator shall inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration of containers and the containment system caused by corrosion or other factors.

F. Special Requirements for Ignitable or Reactive Waste. Containers holding ignitable or reactive waste shall be located at least 15 meters (50 feet) from the facility's property line.

G. Special Requirements for Incompatible Wastes.

(1) Incompatible wastes, or incompatible wastes and materials, (see Regulation .24 of this chapter, for examples) may not be placed in the same container, unless Regulation .02H(2) of this chapter, is complied with.

26.13.05.10

(2) Hazardous waste may not be placed in an unwashed container that previously held an incompatible waste or material (see Regulation .24 for examples).

(3) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments shall be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

II. Containment.

(1) Container storage areas shall have a containment system that is capable of collecting and holding spills, leaks, and precipitation. The containment system shall:

(a) Have a base underlying the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated rainfall until the collected material is detected and removed;

(b) Be designed for efficient drainage so that standing liquid does not remain on the base longer than 1 hour after a leakage or precipitation event unless the containers are elevated, or in some other manner are protected from contact with accumulated liquids; and

(c) Have sufficient capacity to contain 10 percent of the volume of containers or the volume of the largest container, whichever is greater.

(2) Run-on into the containment system shall be prevented, unless the Secretary waives this requirement in the permit after determining that the collection system has sufficient excess capacity in addition to that required in §H(1)(c), of this regulation, to accommodate any run-on which might enter the system.

(3) Spilled or leaked waste and accumulated precipitation shall be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

(4) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system as described in §H(1), of this regulation, except as provided by §H(5), of this regulation, or provided that:

(a) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or

(b) The containers are elevated or are otherwise protected from contact with accumulated liquid.

(5) Storage areas that store containers holding the wastes F020, F021, F022, F023, F026, and F027 that do not contain free liquids shall have a containment system defined by §H(1) of this regulation.

I. Closure. At closure, all hazardous waste and hazardous waste residues shall be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed according to closure plans which are to remain on-site for Departmental review.

.10 General Requirements for Hazardous Waste Management in Tank Systems.

A. Applicability.

(1) Owners and operators of facilities that use tank systems to treat or store hazardous waste shall comply with the requirements of this regulation and Regulations .10-1--10-7 of this chapter, except as otherwise provided in §A(2), (3), and (5) of this regulation or in Regulation .01 of this chapter.

(2) Tank systems that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements of Regulation .10-4 of this chapter. To determine whether a waste contains free liquids, a person shall use EPA Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Publication SW-846), which is incorporated by reference in COMAR 26.13.01.05A(4).

(3) Tank systems, including sumps as defined in COMAR 26.13.01.03B, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes, are exempted from the requirements of Regulation .10-4A of this chapter.

(4) For the purposes of classifying a tank system as either new or existing, installation of the tank system is considered to have begun if the following criteria are met:

(a) The owner or operator has obtained all federal, State, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and

(b) A continuous on-site physical construction or installation program has begun, or the owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for either completion of physical construction of the site or installation of the tank system within a reasonable time.

(5) Tanks, sumps, and other collection devices or systems used in conjunction with drip pads as defined in COMAR 26.13.01.03B and regulated under Regulations .17-1— .17-4 of this chapter are subject to the requirements of this regulation and Regulations .10-1— .10-7 of this chapter.

B. Waste Analysis and Trial Tests. In addition to the waste analysis required by Regulation .02D of this chapter, whenever a tank is to be used to chemically treat or store a hazardous waste which is substantially different from waste previously treated or stored in that tank, or chemically treat hazardous waste with a substantially different process than any previously used in that tank, the owner or operator shall, before treating or storing the different waste or using the different process:

(1) Conduct waste analysis and trial treatment or storage tests, such as bench scale or pilot plant scale tests; or

(2) Obtain written, documented information on similar storage or treatment of similar waste under similar operating conditions, to show that this proposed treatment or storage will meet the requirements of §C(1) of this regulation.

C. General Operating Requirements.

(1) A person may not place hazardous wastes or treatment reagents in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, corrode, leak, or otherwise fail.

(2) Overfilling. The owner or operator shall use appropriate controls and practices to prevent spills and overflows from tank or containment systems, and, at a minimum, shall employ the following controls and practices to comply with this requirement:

(a) Controls to prevent overfilling, such as level sensing devices, high level alarms, automatic feed cutoff, or by-pass to a standby tank;

(b) For uncovered tanks, maintenance of sufficient freeboard to prevent overtopping by wave or wind action or by precipitation; and

(c) Spill prevention controls, such as check valves or dry disconnect couplings.

(3) The owner or operator shall comply with the requirements of Regulation .10-6 of this chapter if a leak or spill occurs in the tank system.

D. Inspections. The owner or operator shall:

(1) Develop and follow a schedule and procedure for inspecting overfill controls;

(2) Inspect at least once each operating day:

(a) Data gathered from monitoring and leak detection equipment, such as pressure and temperature gauges and monitoring wells, to ensure that the tank system is being operated according to its design,

(b) For uncovered tanks, the level of waste in the tank to ensure compliance with §C(2)(b) of this regulation,

(c) Above-ground portions of the tank system to detect corrosion or releases of waste, and

(d) The construction materials of, and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous wastes, such as wet spots or dead vegetation;

(3) Inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(a) Confirm proper operation of the cathodic protection system within 6 months after initial installation and annually after that; and

26.13.05.10

(b) Inspect or test, or both, as appropriate, all sources of impressed current at least every 2 months;

(4) Develop, as part of the inspection schedule required in Regulation .02F of this chapter, and in addition to the specific requirements of §D(1)–(3) of this regulation, a schedule and procedures for assessing the condition of the tank which meet the following requirements:

(a) The schedule and procedures shall be adequate to detect cracks, leaks, corrosion, or erosion which may prevent compliance with §C(1) of this regulation;

(b) The inspection procedure shall include procedures for emptying a tank to allow entry and inspection of the interior when tank entry is necessary to detect corrosion or erosion of the tank sides and bottom; and

(c) The scheduled frequency of assessments shall be based on the material of construction of the tank, type of corrosion or erosion protection used, rate of corrosion or erosion observed during the previous inspections, and the characteristics of the waste being treated or stored;

(5) Document, in the operating record of the facility, inspections of the items required to be made in §D(1)–(4) of this regulation.

E. Air Emissions. The owner or operator shall provide all tanks with the treatment process controls, emission controls, and safety or emergency procedures that are necessary to protect human health and the environment from toxic or otherwise harmful fumes, mists, or gases resulting from:

- (1) Volatilization of wastes stored or treated in the tank;
- (2) Chemical reactions in the tank, either routine or resulting from process upsets; or
- (3) Physical agitation or other forms of treatment conducted in the tank.

.10-1 Special Requirements for Hazardous Waste Management in Tank Systems.

A. Special Requirements for Ignitable or Reactive Wastes.

(1) An owner or operator may not place ignitable or reactive waste in a tank system unless one of the following conditions is met:

(a) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(i) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under COMAR 26.13.02.11 or .13, and

(ii) Regulation .02H(2) of this chapter is complied with;

(b) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(c) The tank system is used solely for emergencies.

(2) The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1990), which is incorporated by reference in COMAR 26.13.01.05A(3).

B. Special Requirements for Incompatible Wastes. An owner or operator may not place:

(1) Incompatible wastes, or incompatible wastes and materials, in the same tank system, unless Regulation .02H(2) of this chapter is complied with;

(2) Hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless Regulation .02H(2) of this chapter is complied with.

.10-2 Assessment of Existing Tank System's Integrity.

A. Applicability. The requirements of this regulation apply to owners and operators of existing hazardous waste tank systems that do not have secondary containment meeting the requirements of Regulation .10-4 of this chapter.

B. For each existing tank system that does not have secondary containment meeting the requirements of Regulation .10-4 of this chapter, the owner or operator shall:

- (1) Develop, and keep on file at the facility, a written assessment of whether the tank system:
 - (a) Is leaking or otherwise unfit for use;
 - (b) Will collapse, rupture, or fail based on an analysis of the tank system design, structural strength, and compatibility with the waste or wastes to be stored or treated;
- (2) Have the assessment required by §B(1) of this regulation reviewed and certified by an independent, qualified registered professional engineer, in accordance with COMAR 26.13.07.03D;
- (3) Assure that the assessment required by §B(1) of this regulation considers, at a minimum, the following:
 - (a) Design standards, if available, according to which the tank and ancillary equipment were constructed;
 - (b) Hazardous characteristics of the waste or wastes that have been and will be handled;
 - (c) Existing corrosion protection measures;
 - (d) Documented age of the tank system, if available, or, if not, an estimate of the age;
 - (e) Results of a leak test, internal inspection, or other tank integrity examination such that:
 - (i) For nonenterable underground tanks, the assessment includes a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects,
 - (ii) For other than nonenterable underground tanks and for ancillary equipment, the assessment includes either a leak test which satisfies the requirements of §B(3)(c)(i) of this regulation, or other integrity examination, that is certified by an independent, qualified, registered professional engineer in accordance with COMAR 26.13.07.03D, that addresses cracks, leaks, corrosion, and erosion;
- (4) Develop the written assessment required by §B(1) of this regulation, and have it certified in accordance with §B(2) of this regulation, as follows:
 - (a) For existing underground tanks that cannot be entered for inspection, by January 12, 1988, except that, for tanks that store or treat materials that become regulated as hazardous wastes after July 14, 1986, the owner or operator shall conduct this assessment within 12 months after the date that the waste becomes regulated as hazardous;
 - (b) For all other existing tank systems other than tanks that cannot be entered for inspection, by July 1, 1994, except that, for tank systems that store or treat materials that become regulated as hazardous wastes after July 1, 1993, the owner or operator shall conduct this assessment within 12 months after the date that the waste becomes regulated as a hazardous waste;
- (5) Comply with the requirements of Regulation .10-6 of this chapter if, as a result of the assessment required by §B(1) of this regulation, a tank system is found to be leaking or unfit for use.

.10-3 Design and Installation of New Tank Systems and Components.

A. The owner or operator of a new tank system may not manage hazardous waste in the tank system unless the written assessment required by §B(1) of this regulation demonstrates to the Secretary's satisfaction that the foundation, structural support, seams, connections, and pressure controls, if applicable, are adequately designed, and that the tank system has sufficient structural strength, compatibility with the waste or wastes to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail.

B. Owners or operators of new tank systems or components shall:

- (1) Demonstrate, through a written assessment reviewed and certified by an independent, qualified, registered professional engineer, in accordance with COMAR 26.13.07.03D, that the tank system has sufficient structural integrity and is acceptable for the management of hazardous waste;
- (2) Include, at a minimum, in the assessment required by §B(1) of this regulation, the following information:
 - (a) Design standard or standards according to which the tank system and ancillary equipment will be constructed;
 - (b) Hazardous characteristics of the waste or wastes to be managed;

26.13.05.10

(c) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:

(i) Factors affecting the potential for corrosion, including but not limited to soil moisture content, soil pH, soil sulfides level, soil resistivity, structure to soil potential, influence of nearby underground metal structures such as piping, existence of stray electric current, existing corrosion protection measures such as coating or cathodic protection; and

(ii) The type and degree of external corrosion protection that are needed to ensure the integrity of the system during the use of the system or component, consisting of corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, corrosion-resistant coating such as epoxy or fiberglass, with cathodic protection such as impressed current or sacrificial anodes, or electrical isolation devices such as insulating joints or flanges;

(d) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(c) Design considerations to ensure that tank:

(i) Foundations will maintain the load of a full tank;

(ii) Systems will be anchored to prevent flotation or dislodging where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of 40 CFR §264.18(a); and

(iii) Systems will withstand the effects of frost heave;

(3) Submit to the Secretary the written assessment required by §B(1) of this regulation as part of the owner's or operator's application for a Controlled Hazardous Substances facility permit or permit modification;

(4) Comply with the following requirements for installation of new tank systems:

(a) Ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation;

(b) Before covering, enclosing, or placing a new tank system or component in use, have the tank system inspected by an independent, qualified installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, for the presence of any of the following items:

(i) Weld breaks,

(ii) Punctures,

(iii) Scrapes of protective coatings,

(iv) Cracks,

(v) Corrosion, and

(vi) Other structural damage or inadequate construction or installation;

(c) Remedy all discrepancies detected in the inspection required by §B(4)(b) of this regulation before the tank system is covered, closed, or placed in use;

(5) Use a backfill material that is a noncorrosive, porous, homogeneous substance for new tank systems or components that are placed underground and that are backfilled, and install the backfill material so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported;

(6) Test all new tanks and ancillary equipment for tightness before covering, enclosing, or placing in use;

(7) Perform all repairs necessary to remedy any leaks in the tank system before covering, enclosing, or placing the system into use;

(8) Ensure that ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction;

(9) Provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under the requirements of §B(2)(c) of this regulation, or other corrosion protection if the Secretary believes other corrosion protection is necessary to ensure the integrity of the tank system during its use;

DISPOSAL OF CONTROLLED HAZARDOUS SUBSTANCES

26.13.05.10

(10) Ensure that the installation of a corrosion protection system that is field-fabricated is supervised by an independent corrosion expert to ensure proper installation;

(11) Obtain and keep on file at the facility written statements by the persons required to certify the design of the tank system in accordance with §B(1) and (2) of this regulation and the persons required to supervise the installation of the tank system in accordance with the requirements of §B(4) (10) of this regulation that attest that the tank system was properly designed and installed, and that repairs required by §B(4)(c) and (7) of this regulation were performed;

(12) Include, in the written statements required by §B(11) of this regulation, the certification statement as required in COMAR 26.13.07.03D.

.10-4 Containment and Detection of Releases.

A. Except as allowed for in §F of this regulation and Regulation .10-5 of this chapter, an owner or operator shall provide secondary containment that meets the requirements of this regulation by the following deadlines:

(1) For all new tank systems or components, before their being put into service;

(2) For all existing tank systems used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027 that are:

- (a) Underground tanks that cannot be entered for inspection, by January 12, 1987,
- (b) Underground tanks that can be entered for inspection, within 2 years after July 1, 1993, or
- (c) Not underground tanks, within 2 years after July 1, 1993;

(3) Existing underground tank systems that cannot be entered for inspection and that are a known and documented age, within 2 years after January 12, 1987, or when the tank system becomes 15 years old, whichever comes later;

(4) Existing tank systems of a known and documented age that are not underground or are underground tanks that can be entered for inspection, within 2 years after July 1, 1993, or when the tank system becomes 15 years old, whichever comes later;

(5) Existing underground tank systems that cannot be entered for inspection, and for which the age cannot be documented:

- (a) Within 8 years of January 12, 1987, if the age of the facility is 7 years or less, or
- (b) If the age of the facility is greater than 7 years, within 2 years after January 12, 1987, or the time the facility becomes 15 years old, whichever comes later;

(6) Existing tank systems that are not underground tanks, or are underground tanks that can be entered for inspection, and for which the age cannot be documented:

- (a) Within 8 years of July 1, 1993, if the age of the facility is 7 years or less; or
- (b) If the age of the facility is greater than 7 years, within 2 years after July 1, 1993, or the time the facility becomes 15 years old, whichever comes later;

(7) Tank systems that are used to store or treat materials that become regulated as hazardous wastes after July 1, 1993, within the time intervals required in §A(1)-(6) of this regulation, except that the date that a material becomes a hazardous waste is substituted for January 12, 1987 or July 1, 1993, whichever is applicable.

B. The owner or operator shall ensure that secondary containment systems provided in accordance with §A of this regulation:

(1) Are designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system;

(2) Are capable of detecting and collecting releases and accumulated liquids until the collected material is removed;

(3) Are constructed of or lined with materials that are compatible with the waste or wastes to be placed in the tank system;

(4) Have sufficient strength and thickness to prevent failure owing to pressure gradients, including static head and external hydrological forces, physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation, including stresses from nearby vehicular traffic;

(5) Are placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;

DEPARTMENT OF THE ENVIRONMENT

26.13.05.10

(6) Are provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Secretary that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

(7) Are sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation.

C. The owner or operator shall remove spilled or leaked waste and accumulated precipitation from the secondary containment system within 24 hours, or, if the owner or operator can demonstrate to the Secretary that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours, in as timely a manner as is possible to prevent harm to human health and the environment.

D. The owner or operator shall use one or more of the following devices in providing for secondary containment for tanks:

- (1) A liner, external to the tank;
- (2) A vault;
- (3) A double-walled tank; or
- (4) An equivalent device as approved by the Secretary.

E. The owner or operator shall ensure that:

(1) External liner systems are:

(a) Designed or operated to contain 100 percent of the capacity of the largest tank within the boundary of the liner system;

(b) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration and the additional capacity is sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(c) Free of cracks or gaps; and

(d) Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank or tanks (that is, capable of preventing lateral as well as vertical migration of the waste);

(2) Vault systems are:

(a) Designed or operated to contain 100 percent of the capacity of the largest tank within the boundary of the vault system;

(b) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration, and the additional capacity is sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(c) Constructed with chemical-resistant water stops in place at any joints;

(d) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the material of construction of the vault;

(e) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated meets the definition of ignitable waste under COMAR 26.13.02.11, or meets the definition of reactive waste under COMAR 26.13.02.13, and may form an ignitable or explosive vapor; and

(f) Provided with an exterior moisture barrier or are otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure;

(3) Double-walled tanks are:

(a) Designed as an integral structure, with an inner tank completely enveloped within an outer shell, so that any release from the inner tank is contained by the outer shell;

(b) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

(c) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the Secretary, and the Secretary concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

F. The owner or operator shall provide ancillary equipment with secondary containment such as a trench, jacketing, or double-walled piping that meets the requirements of §§B and C of this regulation except for:

(1) Above-ground piping, exclusive of flanges, joints, valves, and other connections, that is visually inspected for leaks on a daily basis;

(2) Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;

(3) Seal-less or magnetic coupling pumps and seal-less valves, that are visually inspected for leaks on a daily basis; and

(4) Pressurized above-ground piping systems with automatic shut-off devices, such as excess flow check valves, flow metering shutdown devices, or shut-off devices actuated by loss of pressure, that are visually inspected for leaks on a daily basis.

G. The owner or operator of a tank system, until such time as secondary containment that meets the requirements of this regulation is provided, shall comply with the following:

(1) For nonenterable underground tanks, conduct at least annually a leak test that meets the requirements of Regulation .10-2B(3)(c)(i) of this chapter, or other tank integrity method as approved or required by the Secretary;

(2) For other than nonenterable underground tanks, either conduct a leak test as in §G(1) of this regulation, or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified, registered professional engineer;

(3) Ensure that assessments of the overall condition of the tank system performed instead of a leak test satisfy the following requirements:

(a) The schedule and procedure for the assessment is adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks;

(b) Stored waste is removed from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed; and

(c) The frequency of the assessment is based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated;

(4) For ancillary equipment, conduct at least annually a leak test or other integrity assessment as approved by the Secretary;

(5) Maintain on file at the facility a record of the results of the assessments conducted in accordance with §G(1)-(4) of this regulation; and

(6) Comply with the requirements of Regulation .10-6 of this chapter if a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment performed in accordance with §G(1)-(4) of this regulation.

.10-5 Variances from Secondary Containment Requirements for Tank Systems.

A. The owner or operator may obtain a variance from the requirements of Regulation .10-4 of this chapter if the Secretary finds, as a result of a demonstration by the owner or operator, that:

(1) Alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the ground water and surface water at least as effectively as secondary containment during the active life of the tank system; or

(2) A substantial present or potential hazard will not be posed to human health or the environment in the event of a release that does migrate to ground water or surface water.

B. Requirements Applicable to New Tank Systems.

(1) New underground tank systems are not eligible for exemption from the secondary containment requirements of Regulation .10-4 of this chapter through a demonstration of no substantial present or potential hazard using the criteria of §E of this regulation.

DEPARTMENT OF THE ENVIRONMENT

26.13.05.10

(2) For the purposes of this section, a new underground tank system is an underground tank which:

- (a) Cannot be entered for inspection for which construction began after July 14, 1986; or
- (b) Can be entered for inspection for which construction began after July 1, 1993.

C. If the Secretary grants a variance under this regulation, the owner or operator shall construct and operate the tank system in the manner that was demonstrated to meet the requirements of §D or E of this regulation in obtaining the variance.

D. In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Secretary shall consider:

- (1) The nature and quantity of the wastes;
- (2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water; and

(4) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water.

E. In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, as provided for in §A(2) of this regulation, the Secretary shall consider the potential adverse effects:

(1) On ground water, surface water, and land quality, taking into account:

- (a) The physical and chemical characteristics of the waste in the tank system, including its potential for migration;
- (b) The hydrogeological characteristics of the facility and surrounding land;
- (c) The potential for health risks caused by human exposure to waste constituents;

(d) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(e) The persistence and permanence of the potential adverse effects;

(2) Of a release on ground water quality, taking into account the:

- (a) Quantity and quality of ground water and the direction of ground water flow;
- (b) Proximity and withdrawal rates of ground water users;
- (c) Current and future uses of ground water in the area; and

(d) Existing quality of ground water, including other sources of contamination and the cumulative impact of other sources of contamination on the ground water quality;

(3) Of a release on surface water quality, taking into account the:

- (a) Quantity and quality of ground water and the direction of ground water flow;
- (b) Patterns of rainfall in the region;
- (c) Proximity of the tank system to surface waters;

(d) Current and future uses of surface waters in the area and water quality standards established for those surface waters; and

(e) Existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality; and

(4) Of a release on the land surrounding the tank system, taking into account the:

- (a) Patterns of rainfall in the region; and
- (b) Current and future uses of the surrounding land.