

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF MATERIALS MANAGEMENT

625 Broadway

Albany, NY 12233

**6 NYCRR SUBPART 373-2**

**FINAL STATUS STANDARDS FOR OWNERS AND OPERATORS OF  
HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL  
FACILITIES**

As of July 8, 2023

(Statutory authority: Environmental Conservation Law, art. 3, § 3-0301, title 3, art. 17, §§ 19-0301, 19-0303, 19-0304, 19-0306, 23-2305, 23-2307, 23-2308, art. 27, §§ 27-0105, 27-0106, 27-0305, 27-0905, titles 7, 9, 27-2007, art. 36, §§ 54-0701, 54-0709, 70-0107, 70-0109, 70-0115, art. 71, § 71-2201, titles 27, 35)

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## SUBPART 373-2

# FINAL STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES

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**373-2 – Final Status Standards for Owners and Operators of  
Hazardous Waste Treatment, Storage & Disposal Facilities**

**Section 373-2.1 General.**

**(a) Purpose, scope and applicability.**

- (1) The purpose of this Subpart is to establish minimum State standards which define the acceptable management of hazardous waste.
- (2) The standards in this Subpart apply to owners and operators of all facilities which treat, store or dispose of hazardous waste, except as specifically provided otherwise in this Part or Part 371 of this Title.
- (3) The requirements of this Subpart apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research and Sanctuaries Act (see section 370.1(e) of this Title), only to the extent they are required by the exemption granted to such a person under section 373-1.1(d) of this Part.

*Note:* These Subpart 373-2 regulations do apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.

- (4) The requirements of this Subpart apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an Underground Injection Control (UIC) program approved or promulgated under the Safe Drinking Water Act only to the extent they are required by the exemption granted to such a person under section 373-1.1(d) of this Part (see section 370.1(e) of this Title).

*Note:* These Subpart 373-2 regulations do apply to the aboveground treatment or storage of hazardous waste before it is injected underground.

- (5) The requirements of this Subpart apply to the owner or operator of a publicly owned treatment works which treats, stores or disposes of hazardous waste only to the extent they are required by the exemption granted to such person under section 373-1.1(d) of this Part.
- (6) The requirements of this Subpart apply to those portions of a facility managing recyclable materials described in section 371.1(g)(1)(ii), (iii) and (iv) of this Title only to the extent that the requirements of this Subpart are referred to in sections 374-1.3, 374-1.6, 374-1.7, 374-1.8, or Subpart 374-2 of this Title.
- (7) Universal waste handlers and transporters (as defined in section 370.2(b) of this Title) are subject to regulation under Subpart 374-3 of this Title, when handling the below-listed universal wastes:
  - (i) batteries as described in section 374-3.1(b) of this Title;
  - (ii) pesticides as described in section 374-3.1(c) of this Title;
  - (iii) mercury-containing equipment as described in section 374-3.1(d) of this Title;
  - (iv) lamps as described in section 374-3.1(e) of this Title;
  - (v) aerosol cans as described in section 374-3.1(f) of this Title; and
  - (vi) paint as described in section 374-3.1(g) of this Title.



### 373-2.1(a)

- (8) Section 374-1.13(f) of this Title identifies when the requirements of this Subpart apply to the storage of military munitions classified as solid waste under section 374-1.13(c) of this Title. The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in Parts 370 through 374 and 376 of this Title.
- (9) The requirements of sections 373-2.2, 373-2.3, 373-2.4 and 373-2.6(l) of this Subpart do not apply to remediation waste management sites. (However, some remediation waste management sites may be a part of a facility that is subject to a traditional RCRA permit because the facility is also treating, storing or disposing of hazardous wastes that are not remediation wastes. In these cases, sections 373-2.2, 373-2.3, 373-2.4 and 373-2.6(l) of this Subpart do apply to the facility subject to the traditional RCRA permit.) Instead of the requirements of sections 373-2.2, 373-2.3, and 373-2.4 of this Subpart, owners or operators of remediation waste management sites must:
- (i) obtain an EPA identification number by applying to the USEPA Region II administrator using EPA form 8700-12;
  - (ii) obtain a detailed chemical and physical analysis of a representative sample of the hazardous remediation wastes to be managed at the site. At a minimum, the analysis must contain all of the information which must be known to treat, store or dispose of the waste according to this subpart and Part 376 of this Title, and must be kept accurate and up to date;
  - (iii) prevent people who are unaware of the danger from entering, and minimize the possibility for unauthorized people or livestock to enter onto the active portion of the remediation waste management site, unless the owner or operator can demonstrate to the department that:
    - ('a') physical contact with the waste, structures, or equipment within the active portion of the remediation waste management site will not injure people or livestock who may enter the active portion of the remediation waste management site; and
    - ('b') disturbance of the waste or equipment by people or livestock who enter onto the active portion of the remediation waste management site, will not cause a violation of the requirements of this Subpart;
  - (iv) inspect the remediation waste management site for malfunctions, deterioration, operator errors, and discharges that may be causing, or may lead to, a release of hazardous waste constituents to the environment, or a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment, and must remedy the problem before it leads to a human health or environmental hazard. Where a hazard is imminent or has already occurred, the owner/operator must take remedial action immediately;
  - (v) provide personnel with classroom or on-the-job training on how to perform their duties in a way that ensures the remediation waste management site complies with the requirements of this Part, and on how to respond effectively to emergencies;

**373-2.1(a)**

- (vi) take precautions to prevent accidental ignition or reaction of ignitable or reactive waste, and prevent threats to human health and the environment from ignitable, reactive and incompatible waste;
- (vii) for remediation waste management sites subject to regulation under sections 373-2.9 through 373-2.15 and 373-2.24 of this Subpart, the owner/operator must design, construct, operate, and maintain a unit within a 100-year floodplain to prevent washout of any hazardous waste by a 100-year flood, unless the owner/operator can meet the demonstration of section 373-2.2(j)(1) of this Subpart;
- (viii) not place any non-containerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave;
- (ix) develop and maintain a construction quality assurance program for all surface impoundments, waste piles and landfill units that are required to comply with sections 373-2.11(b)(3) and (4), 373-2.12(b)(3) and (4), and 373-2.14(c)(3) and (4) of this Subpart at the remediation waste management site, according to the requirements of section 373-2.2(k) of this Subpart;
- (x) develop and maintain procedures to prevent accidents and a contingency and emergency plan to control accidents that occur. These procedures must address proper design, construction, maintenance, and operation of remediation waste management units at the site. The goal of the plan must be to minimize the possibility of, and the hazards from a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment. The plan must explain specifically how to treat, store and dispose of the hazardous remediation waste in question, and must be implemented immediately whenever a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment;
- (xi) designate at least one employee, either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility quickly), to coordinate all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspect 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 must have the authority to commit the resources needed to carry out the contingency plan;
- (xii) develop, maintain and implement a plan to meet the requirements in subparagraphs (ii) through (vi) and (ix) through (x) of this paragraph; and
- (xiii) maintain records documenting compliance with subparagraphs (i) through (xii) of this paragraph.

### 373-2.1(b)

#### (b) Relationship to interim status standards.

A facility owner or operator who has fully complied with the requirements for interim status, as defined in section 373-1.3 of this Part, must comply with the regulations specified in Subpart 373-3 of this Part, in lieu of the regulations in this Subpart, until final administrative disposition of the permit application is made, except as provided under section 373-2.19 of this Subpart.

#### (c) Imminent hazard action.

Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to section 71-0301 of the ECL or section 7003 of RCRA (see section 370.1(e) of this Title).

### Section 373-2.2 General facility standards.

#### (a) Applicability.

- (1) The regulations in this section apply to owners and operators of all hazardous waste facilities, except as provided in section 373-2.1 of this Subpart and in paragraph (2) of this subdivision.
- (2) Paragraph (j)(1) of this section applies only to facilities subject to regulations under sections 373-2.9 through 373-2.15 and 373-2.24 of this Subpart.

#### (b) Facility ownership transfer.

- (1) The ownership or operation of a facility during its operating life, or a disposal facility during the period of post-closure care, shall be transferable only upon prior written approval of the department.
- (2) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator, in writing, of the requirements of this Subpart and Subpart 373-1 of this Part.

#### (c) Identification number.

Every facility owner or operator must apply to EPA for an EPA identification number in accordance with the EPA notification procedures (45 FR 12746 *et seq.*) (see section 370.1(e) of this Title).

#### (d) Required notices.

- (1) The owner or operator of a facility that has arranged to receive hazardous waste from a source outside of the United States must notify the department in writing at least four weeks in advance of the date on which the first shipment of the hazardous waste is expected to arrive at the facility. The owner or operator of a facility that has arranged to receive hazardous waste from an OECD country, as defined in section 372.5(h)(1) of this Title must also notify the EPA regional administrator in writing at least four weeks in advance of the date on which the first shipment of the hazardous waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

**Note:** for purposes of reference only: The owner or operator of a recovery facility that has arranged to receive hazardous waste from an OECD member country, as defined in section 372.5(h)(1) of

### 373-2.2(d)

this Title, must also meet the requirement of 40 CFR 264.12(a)(2) (see section 370.1(e) of this Title).

- (2) The owner or operator of a facility that receives hazardous waste from an offsite source (except where the owner or operator is also the generator) must inform the generator in writing that he or she has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.

#### (e) General waste analysis.

##### (1)

- (i) Before an owner or operator treats, stores or disposes of any hazardous wastes, or nonhazardous wastes if applicable under section 373-2.7(d)(4) of this Subpart, a detailed chemical and physical analysis of a representative sample of the wastes must be obtained. At a minimum, this analysis must contain all the information which must be known to treat, store or dispose of the waste in accordance with the requirements of this Subpart and Part 376 of this Title.
- (ii) The analysis may include data developed under Part 371 of this Title, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

**Note:** For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with subparagraph (i) of this paragraph. The owner or operator of an offsite facility may arrange for the generator of the hazardous waste to supply part of the information required by subparagraph (i) of this paragraph, except as otherwise specified in section 376.1(g)(2) and (3) of this Title. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.

- (iii) The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. At a minimum, the analysis must be repeated:
  - ('a') when the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes, or nonhazardous waste if applicable under section 373-2.7(d)(4) of this Subpart, has changed; and
  - ('b') for off-site facilities, when the results of the inspection required in subparagraph (iv) of this paragraph indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.
- (iv) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the

**373-2.2(e)**

identity of the waste specified on the accompanying manifest or shipping paper.

- (2) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which will be carried out to comply with paragraph (1) of this subdivision. This plan must be kept at the facility. At a minimum, the plan must specify:
- (i) the parameters for which each hazardous waste, or nonhazardous waste if applicable under section 373-2.7(d)(4) of this Subpart, will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (1) of this subdivision);
  - (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. A representative sample may be obtained using either:
    - ('a') one of the sampling methods described in Appendix 19 of this Title; or
    - ('b') 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;
  - (vi) where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in sections 373-2.2(i), 373-2.14(j), 373-2.15(b), 373-2.27(e)(4), 373-2.28(n)(4) and 373-2.29(d) of this Subpart and section 376.1(g) of this Title; and
  - (vii) for surface impoundments exempted from land disposal restrictions under section 376.1(d)(1) of this Title, the procedures and schedules for:
    - ('a') the sampling of impoundment contents;
    - ('b') the analysis of test data; and
    - ('c') the annual removal of residues which are not delisted under section 370.3(c) of this Title and do exhibit a characteristic of hazardous waste, and which do not meet the treatment standards of section 376.4 of this Title;
  - (viii) for owners and operators seeking an exemption to the air emission standards of section 373-2.29 of this Subpart in accordance with section 373-2.29(c) of this Subpart:
    - ('a') If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of the test data to verify the exemption.

**373-2.2(e)**

(b) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.

(3) For off-site facilities, the waste analysis plan required in paragraph (2) of this subdivision must also specify 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. At a minimum, the plan must describe:

- (i) the procedures which will be used to determine the identity of each movement of waste managed at the facility;
- (ii) the sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling; and
- (iii) the procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

**(f) Security.**

(1) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless the owner or operator can demonstrate to the commissioner that:

- (i) physical contact with the waste, structures or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and
- (ii) disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this Part.

(2) Unless the owner or operator has made a successful demonstration under subparagraphs (1)(i) and (ii) of this subdivision, a facility must have:

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

(ii)

(a) an artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(b) a means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

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- (3) Unless the owner or operator has made a successful demonstration under subparagraphs (1)(i) and (ii) of this subdivision, a sign with the legend, “Danger—Unauthorized Personnel Keep Out,” must be posted at each entrance of 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 must be written in English, and written in French in counties bordering the Canadian Province of Quebec. The legend 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.

#### **(g) General inspection requirements.**

- (1) The owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to:
  - (i) release of hazardous waste constituents to the environment; or
  - (ii) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
- (2)
  - (i) The owner or operator must develop and follow a written schedule for inspecting 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.
  - (ii) This schedule must be kept at the facility.
  - (iii) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).
  - (iv) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in sections 373-2.9(e), 373-2.10(d) and (f), 373-2.11(d), 373-2.12(e), 373-2.13(f), 373-2.14(e), 373-2.15(g), 373-2.24(c), 373-2.27(d), 373-2.28(c), (d) and (i) and 373-2.29(d)-(j) of this Subpart, where applicable.
- (3) The owner or operator must 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. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

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- (4) The owner or operator must record inspections in an inspection log or summary. These records must be kept for at least three years from the date of inspection. At a minimum, these records must 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.

**(h) Personnel training.**

(1)

- (i) Facility personnel must 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 Part. The owner or operator must ensure that this program includes all the elements described in the document required under subparagraph (4)(iii) of this subdivision.
- (ii) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.
- (iii) At a minimum, the training program must 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, where applicable:
- ('a') procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment;
  - ('b') key parameters for automatic waste feed cutoff systems;
  - ('c') communication or alarm systems;
  - ('d') response to fires or explosions;
  - ('e') response to ground-water contamination incidents; and
  - ('f') shutdown of operations.
- (iv) For facility employees who receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q) (see section 370.1(e) of this Title), the facility is not required to provide separate emergency response training pursuant to this section, provided that the overall facility training meets all the requirements of this section.
- (2) Facility personnel must successfully complete the program required in paragraph (1) of this subdivision within six months after the date of their employment or an assignment to a facility, whichever is later. Employees must not work in unsupervised positions until they have completed the training requirements of paragraph (1) of this subdivision.



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- (3) Facility personnel must take part in an annual review of the initial training required in paragraph (1) of this subdivision.
- (4) The owner or operator must maintain the following documents and records at the facility:
  - (i) the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
  - (ii) a written job description for each position listed under subparagraph (i) of this paragraph. 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 must include the requisite skill, education or other qualifications, and duties of employees assigned to each position;
  - (iii) 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 subparagraph (i) of this paragraph; and
  - (iv) records that document that the training or job experience required under paragraphs (1), (2) and (3) of this subdivision has been given to, and completed by, facility personnel.
- (5) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

**Note:** Owners and operators are required to submit, with the permit application, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.

**(i) General requirements for ignitable, reactive or incompatible wastes.**

- (1) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction, including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.
- (2) Where specifically required by other sections of this Part, the owner or operator of a facility that treats, stores or disposes of ignitable or reactive waste, or mixes incompatible wastes, or incompatible wastes and other materials, must take precautions to prevent reactions which:
  - (i) generate extreme heat or pressure, fire or explosions, or violent reactions;
  - (ii) produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment;

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- (iii) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
  - (iv) damage the structural integrity of the device or facility; or
  - (v) through other like means threaten human health or the environment.
- (3) When required to comply with paragraph (1) or (2) of this subdivision, the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in subdivision (e) of this section), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

### (j) Location standards.

#### (1)

- (i) Flood plains. A facility located in a 100-year flood plain must be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood, unless the owner or operator can demonstrate to the commissioner's satisfaction that:
  - ('a') procedures are in effect which will cause the waste to be removed safely, before floodwaters can reach the facility, to a location where the wastes will not be vulnerable to floodwaters; or
  - ('b') for existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units no adverse effects on human health or the environment will result if washout occurs, considering:
    - ('1') the volume and physical and chemical characteristics of the waste in the facility;
    - ('2') the concentration of hazardous constituents that would potentially affect surface waters as a result of washout;
    - ('3') the impact of such concentrations on the current or potential uses of, and water quality standards established for, the affected surface waters; and
    - ('4') the impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year flood plain that could result from washout.

**Comment:** The location where wastes are moved must be a facility which is either permitted by EPA under 40 CFR part 270, authorized to manage hazardous waste by the State under 6 NYCRR Part 373, authorized to manage hazardous waste by another state with a hazardous waste management program authorized under 40 CFR part 271, or in interim status under 40 CFR parts 270 and 265 (see section 370.1(e) of this Title).

- (ii) As used in subparagraph (1)(i) of this subdivision:

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- (a) **'100-year flood plain'** means any land area which is subject to a one-percent or greater chance of flooding in any given year from any source.
  - (b) **'Washout'** means the movement of hazardous waste from the active portion of the facility as a result of flooding.
  - (c) **'100-year flood'** means a flood that has a one-percent chance of being equaled or exceeded in any given year.
- (2) Salt dome formations, salt bed formations, underground mines and caves. The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited.

**(k) Construction quality assurance program.**

- (1) CQA program.
  - (i) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with sections 373-2.11(b)(3) and (4), and 373-2.14(c)(3) and (4) of this Subpart. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a professional engineer registered in New York State.
  - (ii) The CQA program must address the following physical components, where applicable:
    - (a) foundations;
    - (b) dikes;
    - (c) low-permeability soil liners;
    - (d) geomembranes (flexible membrane liners);
    - (e) leachate collection and removal systems and leak detection systems; and
    - (f) final cover systems.
- (2) Written CQA plan. The owner or operator of units subject to the CQA program under paragraph (1) of this subdivision must develop and implement a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:
  - (i) identification of applicable units, and a description of how they will be constructed;
  - (ii) identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications; and
  - (iii) a description of inspection and sampling activities for all unit components identified in subparagraph (1)(ii) of this subdivision, including observations and tests that will be used

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before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under section 373-2.5(c) of this Subpart.

(3) Contents of program.

(i) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

('a') structural stability and integrity of all components of the unit identified in subparagraph (1)(ii) of this subdivision;

('b') proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications; and

('c') conformity of all materials used with design and other material specifications under sections 373-2.11(b), 373-2.12(b), and 373-2.14(c) of this Subpart.

(ii) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of sections 373-2.11(b)(3)(i)(‘a’)(‘2’), 373-2.12(b)(3)(i)(‘a’)(‘2’), and 373-2.14(c)(3)(i)(‘a’)(‘2’) of this Subpart in the field. Compliance with the hydraulic conductivity requirements must be verified by using in situ testing on the constructed test fill. The commissioner may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of sections 373-2.11(b)(3)(i)(‘a’)(‘2’), 373-2.12(b)(3)(i)(‘a’)(‘2’), and 373-2.14(c)(3)(i)(‘a’)(‘2’) of this Subpart in the field.

(4) Certification. Waste shall not be received in a unit subject to this subdivision until the owner or operator has submitted to the commissioner by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of sections 373-2.11(b)(3) or (4), 373-2.12(b)(3) or (4), or 373-2.14(c)(3) or (4) of this Subpart; and the procedure in section 373-1.6(a)(12)(ii)(‘b’) of this Part has been completed. Documentation supporting the CQA officer’s certification must be furnished to the commissioner upon request.

### Section 373-2.3 Preparedness and Prevention.

(a) Applicability.

The regulations in this section apply to owners and operators of all hazardous waste facilities, except as section 373-2.1(a) of this Subpart provides otherwise.

### 373-2.3(b)

**(b) Design and operation of facility.**

Facilities must be designed, constructed, maintained and operated to minimize the possibility of a fire, explosion or any unplanned sudden or nonsudden 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 must be equipped with the following, unless it can be demonstrated to the commissioner 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, foam-producing equipment, automatic sprinklers or water spray systems.

*Note:* Subpart 373-1 of this Part requires that an owner or operator who wishes to make the demonstration referred to above must do so with the permit application.

**(d) Testing and maintenance of equipment.**

All facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, must 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 must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the commissioner has ruled that such a device is not required under subdivision (c) of this section.
- (2) If there is ever just one employee on the premises while the facility is operating, the employee must 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 commissioner has ruled that such a device is not required under subdivision (c) of this section.

### 373-2.3(f)

**(f) Required aisle space.**

- (1) The owner or operator must 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 commissioner that aisle space is not needed for any of these purposes.

*Comment:* Subpart 373-1 of this Part requires that an owner or operator who wishes to make the demonstration referred to above must do so with the permit application.

**(g) Arrangements with local authorities.**

- (1) The owner or operator must attempt to make the following arrangements as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations:
  - (i) 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;
  - (ii) where 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;
  - (iii) agreements with State emergency response teams, emergency response contractors and equipment suppliers;
  - (iv) 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) Where local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

### **Section 373-2.4 Contingency plan and emergency procedures.**

**(a) Applicability.**

The regulations in this section apply to owners and operators of all hazardous waste facilities, except as section 373-2.1(a) of this Subpart provides otherwise.

**(b) Purpose and implementation of contingency plan.**

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

### 373-2.4(b)

- (2) The provisions of the plan must 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 must describe the actions facility personnel must take to comply with subdivisions (b) and (g) of this section in response to fires, explosions, or any unplanned sudden or nonsudden 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, as defined in section 610.2(j) of this Title and 40 CFR part 300 (see section 370.1(e) of this Title), or some other emergency or contingency plan, that plan need only be amended to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this Subpart (see section 370.1(e) of this Title). The owner or operator may develop one contingency plan which meets all regulatory requirements. When modifications are made to the non-Part 370 through 374 and Part 376 provisions in an integrated contingency plan, the changes do not trigger the need for a Part 373 permit modification.
- (3) The plan must 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 section 373-2.3(g) of this Subpart.
- (4) The plan must list names, addresses and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subdivision (f) of this section), and this list must be kept up-to-date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the commissioner at the time of certification, rather than at the time of permit application.
- (5) The plan must 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 must be kept up-to-date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.
- (6) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

#### (d) **Copies of contingency plan.**

A copy of the contingency plan and all revisions to the plan must be:

- (1) maintained at the facility; and

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- (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.

*Note:* The contingency plan must be submitted to the commissioner with the permit application and, after modification or approval, will become a condition of any permit issued.

**(e) Amendment of contingency plan.**

All amendments to the contingency plan must be approved by the commissioner in accordance with section 373-1.7 of this Part (permit modifications). The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

- (1) the facility permit is revised;
- (2) the plan fails in an emergency;
- (3) the 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) the list of emergency coordinators changes; or
- (5) the list of emergency equipment changes.

*Note:* A change in the lists of facility emergency coordinators or equipment in the contingency plan constitutes a minor modification to the facility permit to which the plan is a condition.

**(f) Emergency coordinator.**

At all times, there must be at least one employee either on the facility premises or on call (i.e., 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 must 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 must have the authority to commit the resources needed to carry out the contingency plan.

*Note:* The emergency coordinator's responsibilities are more fully spelled out in subdivision (g) of this section. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.

**(g) Emergency procedures.**

- (1) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the emergency coordinator's designee when the emergency coordinator is on call) must immediately:
  - (i) activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and



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- (ii) 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 must immediately identify the character, exact source, amount and aerial extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.
  - (3) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment must consider both direct and indirect effects of the release, fire or explosion (e.g., the effects of any toxic, irritating or asphyxiating gases that are generated, or the effects of any hazardous surface water runoff 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, the findings must be reported as follows:
    - (i) If the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, appropriate local authorities must be immediately notified. The emergency coordinator must be available to help appropriate officials decide whether local areas should be evacuated.
    - (ii) The emergency coordinator must immediately notify both the department (using the New York State 24-hour oil and hazardous material spill notification number, 518/457-7362) and either the government official designated as the on-scene coordinator for that geographical area in the applicable regional contingency plan under 40 CFR part 300 (see section 370.1(e) of this Title), or the National Response Center (using their 24-hour toll-free number, 800/424-8802). The report must include:
      - ('a') name and telephone number of reporter;
      - ('b') name and address of facility;
      - ('c') time and type of incident (e.g., release, fire);
      - ('d') name and quantity of material(s) involved, to the extent known;
      - ('e') the extent of injuries, if any; and
      - ('f') the possible hazards to human health, or the environment, outside the facility.
  - (5) During an emergency, the emergency coordinator must 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 must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

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- (6) If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must 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 must 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.

**Comment:** Unless the owner or operator can demonstrate, in accordance with section 371.1(d)(3) or (4) of this Title, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Part 372 of this Title and this Subpart.

- (8) The emergency coordinator must ensure that, in the affected area(s) of the facility:
  - (i) no waste that may be incompatible with the released material is treated, stored or disposed of until cleanup procedures are completed; and
  - (ii) 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 must notify the commissioner, and appropriate State and local authorities, that the facility is in compliance with paragraph (8) of this subdivision before operations are resumed in the affected area(s) of the facility.
- (10) The owner or operator must note in the operating record the time, date and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the owner or operator must submit a written report on the incident to the commissioner. The report must include:
  - (i) name, address and telephone number of the owner or operator;
  - (ii) name, address and telephone number of the facility;
  - (iii) date, time and type of incident (e.g., fire, explosion);
  - (iv) name and quantity of material(s) involved;
  - (v) the extent of injuries, if any;
  - (vi) an assessment of actual or potential hazards to human health or the environment, where this is applicable; and
  - (vii) estimated quantity and disposition of recovered material that resulted from the incident.

### **Section 373-2.5 Manifest system, recordkeeping and reporting.**

#### **(a) Applicability.**

The regulations in this section apply to owners and operators of both onsite and offsite facilities, except as section 373-2.1(a) of this Subpart provides otherwise. Subdivisions (b) and (f) of this section do not apply

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to owners and operators of onsite facilities that do not receive any hazardous waste from offsite sources. Subparagraph (c)(2)(ix) of this section only applies to permittees of facilities that treat, store or dispose of hazardous waste onsite where such wastes are generated.

#### (b) Manifest requirements.

A treatment, storage or disposal facility shipping hazardous wastes off-site or offering hazardous wastes for shipment off-site must comply with all generator standards as specified in section 372.2 of this Title. If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his or her agent, must comply with the requirements of this subdivision.

##### (1) Use of manifest system.

###### (i)

('a') If a facility receives hazardous waste accompanied by a manifest, the owner, operator or his/her agent must:

('1') complete line 19 of the manifest, hazardous waste report management method codes, for each waste received and accepted, using the codes established in the annual report instructions and forms referenced in subdivision (e) of this section;

('2') sign and date the manifest as indicated in clause ('b') of this subparagraph to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

('b') If a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or his/her agent must:

('1') determine that all portions of the manifest, except that portion filled out by the owner or operator of the facility, have been completed. For example, if the facility is not providing a hazardous waste management code in item 19 that reflects the ultimate disposal method for the hazardous waste, the owner, operator or his/her agent must ensure that the State code in box 13 designating the ultimate disposal method for the hazardous waste is completed. A completed form includes signatures and all certifications required from the generator and the initial and delivering transporters. In those cases where the owner or operator completes any of the generator's portions of the manifest (items 1-14), the owner or operator assumes joint responsibility with the generator for the accuracy and completeness of those portions he or she completed;

('2') sign and date, by hand, each copy of the manifest;

('3') note any discrepancies (as defined in clause ('d') of this subparagraph) on each copy of the manifest;

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- (4) immediately give the transporter at least one copy of the manifest;
  - (5) within 10 calendar days of delivery, mail a copy of the manifest to the generator, the generator state and the destination state (if different from the generator state), making legible photocopies as necessary. Mail the department copy to: New York State Department of Environmental Conservation, 625 Broadway, Albany, NY 12233-7252; and
  - (6) retain at the facility a copy of each manifest for a least three years from the date of delivery.
- (c) If a facility receives hazardous waste imported from a foreign source, the receiving facility must also mail a copy of the manifest and documentation confirming EPA's consent to the import of hazardous waste to the following address within 30 days of delivery:

Office of Enforcement and Compliance Assurance, Office of Federal Activities,  
International Compliance Assurance Division (2254A), U.S. Environmental Protection  
Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

**Note:** For purposes of reference only: The owner or operator of a recovery facility that has arranged to receive hazardous waste from an OECD member country, as defined in section 372.5(h)(1) of this Title, must also meet the requirement of 40 CFR 264.71(d).

- (d) Manifest discrepancies are:
- (1) significant differences between the quantity (as defined by clause ('e') of this subparagraph) or type (as defined by clause ('f') of this subparagraph) of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives;
  - (2) rejected wastes, which may be a full or partial shipment of hazardous waste that the facility cannot accept; or
  - (3) container residues, which are residues that exceed the quantity limits for "empty" containers set forth in section 371.1(h)(2) of this Title.
- (e) Significant differences in quantity are:
- (1) for bulk waste, variations greater than 10 percent in weight; and
  - (2) for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload.
- (f) Significant differences in type are obvious differences which can be discovered by inspections or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

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- (ii) The facility owner or operator must perform or obtain an analysis of a representative sample of each hazardous waste shipment as specified in the waste analysis plan required by section 373-2.2(e)(2) of this Subpart. The purpose of this analysis is to identify discrepancies between the actual composition of the waste and its description on the manifest.
- (iii) Upon discovering a significant difference in quantity or type, the owner or operator of the facility must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operators must immediately submit a letter to the generator state and the disposer state describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipper paper at issue.
- (iv)
  - ('a') Upon rejecting waste or identifying a container residue that exceeds the quantity limits for “empty” containers set forth in section 371.1(h)(2) of this Title, the facility must consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility may return the rejected waste or residue to the generator. The facility must send the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.
  - ('b') While the facility is making arrangements for forwarding rejected wastes or residues to another facility under this subparagraph, it must ensure that either the delivering transporter retains custody of the waste, or, the facility must provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under subparagraph (v) or (vi) of this paragraph.
- (v) Except as provided in clause ('g') of this subparagraph, for full or partial load rejections and residues that are to be sent off-site to an alternate facility, the facility is required to prepare a new manifest for each manifest with a full or partial load rejection in accordance with section 372.2(b) of this Title and the following instructions:
  - ('a') Write the generator's U.S. EPA ID number in item 1 of the new manifest. Write the generator's name and mailing address in item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space for item 5.
  - ('b') Write the name of the alternate designated facility and the facility's U.S. EPA ID number in the designated facility block (item 8) of the new manifest.
  - ('c') Copy the manifest tracking number found in item 4 of the old manifest to the special handling and additional information block of the new manifest (item 14), and indicate that the shipment is a residue or reject waste from the previous shipment.
  - ('d') Copy the manifest tracking number found in item 4 of the new manifest to the manifest

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reference number line in the discrepancy block of the old manifest (item 18a).

- (e) Write the DOT description for the rejected load or the residue in item 9 (U.S. DOT description) of the new manifest and write the container types, quantity and volume(s) of waste.
  - (f) Sign the generator's/offerrer's certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation, and send a signed copy of the manifest to the generator identified in Item 5 of the original manifest.
  - (g) For full load rejections that are made while the transporter remains present at the facility, the facility 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. The facility must retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany this shipment. If the original manifest is not used, then the facility must use a new manifest and comply with clauses ('a'), ('b'), ('c'), ('d'), ('e') and ('f') of this subparagraph.
- (vi) Except as provided in clause ('g') of this subparagraph, for rejected wastes and residues that must be sent back to the generator, the facility is required to prepare a new manifest for each manifest with a full or partial load rejection in accordance with section 372.2(b) of this Title and the following instructions:
- (a) Write the facility's U.S. EPA ID number in item 1 of the new manifest. Write the facility's name and mailing address in item 5 of the new manifest. If the mailing address is different from the facility's site address, then write the facility's site address in the designated space for item 5 of the new manifest.
  - (b) Write the name of the initial generator and the generator's U.S. EPA ID number in the designated facility block (item 8) of the new manifest.
  - (c) Copy the manifest tracking number found in item 4 of the old manifest to the special handling and additional information block of the new manifest (item 14), and indicate that the shipment is a residue or rejected waste from the previous shipment.
  - (d) Copy the manifest tracking number found in item 4 of the new manifest to the manifest reference number line in the discrepancy block of the old manifest (item 18a).
  - (e) Write the DOT description for the rejected load or the residue in item 9 (U.S. DOT description) of the new manifest and write the container types, quantity and volume(s) of waste.
  - (f) Sign the generator's/offerrer's certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition

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for transportation, and send a signed copy of the manifest to the generator identified in item 5 of the original manifest.

- (g) For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing items 18a and 18b of the manifest and supplying the generator's information in the alternate facility space. The facility must retain a copy for its records, and then give the remaining copies of the manifest to the transporter to accompany this shipment. If the original manifest is not used, then the facility must use a new manifest and comply with clauses ('a'), ('b'), ('c'), ('d'), ('e'), ('f'), and ('h') of this subparagraph.
  - (h) For full or partial load rejections and container residues contained in non-empty containers that are returned to the generator, the facility must also comply with the exception reporting requirements in section 372.2(c)(3)(i) of this Title.
- (vii) If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for "empty" containers set forth in section 371.1(h)(2) of this Title after it has signed, dated, and returned a copy of the manifest to the delivering transporter, the generator, the generator state, or the destination state, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from item 4 of the new manifest to the discrepancy space (item 18a) of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must retain the amended manifest for at least three years from the date of amendment, and must within 10 calendar days, send a copy of the amended manifest to the transporter, generator, generator state and destination state that received copies prior to their being amended. The facility must retain a copy of the new manifest for at least three years from the date of shipment, and must within 10 calendar days, send a copy of the new manifest to their state, the generator, generator state and destination state.
- (viii) The requirements of this subdivision do not apply to hazardous waste produced by generators of greater than 100 kilograms but less than 1,000 kilograms in a calendar month where:
- (a) the waste is being transported pursuant to a reclamation agreement as provided in section 372.2(b)(7) of this Title provided that:
    - (1) the owner or operator records the following for each shipment:
      - (i) the name, address and U.S.E.P.A. identification number of the generator of the waste;
      - (ii) the hazardous waste number and quantity of waste accepted; and
      - (iii) the date the waste is accepted;
    - (2) the owner or operator retains these records for a period of time of at least three years after termination or expiration of the agreement; and

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- (3') quarterly summaries (unless otherwise specified by the department) of these records must be submitted to the department. These summaries must include the waste types and quantities received from each generator.
- (ix) A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated federally) as hazardous wastes under its state hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.
- (2) Unmanifested shipments. Upon receipt of an unmanifested shipment of hazardous waste, the owner or operator of the facility must:
  - (i) where possible determine the reason why the shipment is not accompanied by a manifest (e.g., small generator exemption, rail transportation);
  - (ii) accept the waste for treatment, storage or disposal if:
    - ('a') the reason the shipment is unmanifested is that it originated from a conditionally exempt small quantity generator (see section 371.1(f) of this Title); or
    - ('b') the shipment is transported in whole or in part by a rail or water (bulk) transporter and the requirements of section 372.7 of this Title are satisfied;
  - (iii)
    - ('a') accept the waste for treatment, storage and disposal and file an unmanifested waste report with the department in accordance with subparagraph (3)(ii) of this subdivision within 15 calendar days of receipt of the shipment if the shipment was transported in whole or in part by a rail or water (bulk) transporter and the manifest is not received by the facility within 15 calendar days of receipt of the shipment; or
    - ('b') accept the waste for treatment, storage and disposal and file an unmanifested waste report with the department in accordance with subparagraph (3)(ii) of this subdivision within 10 calendar days of receipt of the shipment if the situation is not specifically set forth in subparagraph (ii) and clause (iii)('a') of this paragraph and the conditions of paragraph (5) of this subdivision are met;
  - (iv) reject the shipment of hazardous waste, and:
    - ('a') manage the hazardous waste pursuant to subparagraph (1)(iv) of this subdivision;
    - ('b') manifest the hazardous waste pursuant to subparagraph (1)(v) or (1)(vi) of this subdivision as appropriate, except that the phrase “unmanifested shipment from” and the generator’s EPA ID number (if known) or the generator’s name and address will be inserted into item 14 “Special Handling and Additional Information” block of the new manifest; and



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- (c) file an unmanifested waste report in accordance with subparagraph (3)(ii) of this subdivision.
- (3) Recordkeeping and reporting requirements.
- (i) Manifest discrepancy reports. The facility owner or operator must report to the dispenser state and generator state concerning any manifest discrepancies in accordance with subparagraph (1)(iii) of this subdivision.
  - (ii) Unmanifested waste report. In those situations requiring submission of an unmanifested waste report, as identified in paragraph (2) of this subdivision, the report must include 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 of the transporter, if available;
    - (d) the transporter's license plate number;
    - (e) the transporter's Part 364 permit number, if available;
    - (f) a description of and the quantity of each unmanifested hazardous waste the facility received, including EPA waste type;
    - (g) the method of treatment, storage or disposal for each hazardous waste (if accepted);
    - (h) a brief explanation of why the waste was unmanifested, if known; and
    - (i) certification signed by the owner or operator of the facility or his/her authorized representative.
  - (iii) Availability, retention and disposition of records.
    - (a) Reports and records required by this subdivision must be retained for a period of three years from the date of submittal.
    - (b) All records required under this subdivision must be furnished to the department upon request, and must be postmarked within five business days of receipt of a written request. These records must be made available at all reasonable times for inspection by any officer, employee, or representative of the department who is duly designated by the commissioner.
    - (c) The three-year retention period for all records required under this subdivision is extended automatically for the duration of any unresolved enforcement action regarding the facility or as requested by the commissioner.

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- (4) Special conditions. Rail and water (bulk) shipments. Facilities which receive shipments of hazardous waste transported in whole or in part by rail or water (bulk) must comply with the treatment, storage, or disposal facility requirements in section 372.7 of this Title.
- (5) Prohibitions. No facility shall:
  - (i) accept a particular hazardous waste unless it is authorized to accept such waste; or
  - (ii) accept a hazardous waste for which it does not have adequate treatment, storage or disposal capacity available.

#### (c) Operating record.

- (1) The owner or operator must keep a written operating record at the facility.
- (2) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:
  - (i) a description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage or disposal at the facility as required by Appendix 25, *infra*;
  - (ii) the location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram that shows each cell or disposal area. For all facilities, this information must include cross-references to manifest document numbers if the waste was accompanied by a manifest;
  - (iii) records and results of waste analyses and waste determinations performed as specified in sections 373-2.2(e) and (i), 373-2.14(j), 373-2.15(b), 373-2.27(e), 373-2.28(n) and 373-2.29(d) of this Subpart and section 376.1(d)(1) and (g) of this Title (except that records specified in section 373-2.14(j) of this Subpart need only be kept for three years);
  - (iv) summary reports and details of all incidents that require implementing the contingency plan as specified in section 373-2.4(g)(10) of this Subpart;
  - (v) records and results of inspections as required by section 373-2.2(g)(4) of this Subpart (except these data need be kept only three years);
  - (vi) monitoring, testing or analytical data, and corrective action where required by sections 373-2.6, 373-2.2(k), 373-2.10(b), (d) and (f), 373-2.11(d), (j)-(k), 373-2.12(e), (j)-(k), 373-2.13(e)-(f) and (h), 373-2.14(e)-(f), (n) and (o), 373-2.15(g), 373-2.24(c), 373-2.27(e)(3)-(6) and (f), 373-2.28(n)(4)-(9) and (o) and 373-2.29(c)-(k) of this Subpart;  
*Note:* As required by section 373-2.7(g) of this Subpart, monitoring data required under section 373-2.6(i) at disposal facilities must be kept throughout the post-closure period.
  - (vii) for off-site facilities, notices to generators as specified in section 373-2.2(d)(2) of this Subpart;

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- (viii) all closure cost estimates under section 373-2.8(c) of this Subpart, and for disposal facilities, all post-closure cost estimates under section 373-2.8(e) of this Subpart;
- (ix) certification by the permittee, no less often than annually, that a program is in place to reduce the volume and toxicity of hazardous waste that is generated to the degree determined by the permittee to be economically practicable; and certification that the proposed method of treatment, storage or disposal is the most practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment;
- (x) records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to section 376.1(e) of this Title, a petition pursuant to section 376.1(f), and the applicable notice required by a generator under section 376.1(g)(1);
- (xi) for an off-site treatment facility, copy of the notice, and the certification and demonstration, if applicable, required by the generator or owner or operator under section 376.1(g) of this Title;
- (xii) for an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under section 376.1(g) of this Title;
- (xiii) for an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under section 376.1(g) of this Title;
- (xiv) for an on-site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under section 376.1(g) of this Title;
- (xv) for an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under section 376.1(g) of this Title;
- (xvi) for an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under section 376.1(g) of this Title; and
- (xvii) any records required under section 373-2.1(9)(xiii) of this Subpart.
- (xviii) certifications as required by section 373-2.10(g)(6) of this Subpart.

**(d) Availability, retention and disposition of records.**

- (1) All records, including plans, required under this part must be kept at that facility and 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 commissioner.
- (2) The retention period for all records required under this Part is extended automatically during the

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course of any unresolved enforcement action regarding the facility or as requested by the commissioner.

- (3) A copy of the records of waste disposal locations and quantities under subparagraph (c)(2)(ii) of this section must be submitted to the commissioner upon closure of the facility.

#### (e) **Annual report.**

The owner or operator must prepare and submit one copy of an annual report to the commissioner by March 1st of each year. The report forms and instructions as designated by the commissioner must be used for this report. The report must cover facility activities during the previous calendar year and must include, at a minimum, the following information:

- (1) the EPA identification number, name and address of the facility;
- (2) the calendar year covered by the report;
- (3) for off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year. For imported shipments, the report must give the name and address of the foreign generator;
- (4) a description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;
- (5) the method of treatment, storage or disposal for each hazardous waste;
- (6) monitoring data as required by sections 373-2.6 and 373-3.6 of this Title;
- (7) the most recent closure cost estimate under section 373-2.8(c) of this Subpart and, for disposal facilities, the most recent post-closure cost estimate under section 373-2.8(e);
- (8) for generators who treat, store, or dispose of hazardous waste onsite, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated;
- (9) for generators who treat, store, or dispose of hazardous waste onsite, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984; and
- (10) the certification signed by the owner or operator of the facility or an authorized representative.

#### (f) **Unmanifested waste report.**

The facility must comply with the requirements for unmanifested wastes specified in paragraphs (b)(2) and (3) of this section.

#### (g) **Additional reports.**

In addition to submitting the annual report described in subdivision (e) of this section, the owner or operator must also report to the commissioner:

- (1) releases, fires and explosions as specified in section 373-2.4(g)(10) of this Subpart;

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- (2) facility closures specified in section 373-2.7(f); and
- (3) as otherwise required by sections 373-2.6, 373-2.11 through 373-2.14, 373-2.27, 373-2.28 and 373-2.29 of this Subpart.

## **Section 373-2.6 Releases from solid waste management units.**

### **(a) Applicability.**

- (1)
  - (i) Except as provided in paragraph (2) of this subdivision, the regulations in this section apply to owners and operators of facilities that treat, store or dispose of hazardous waste. The owner or operator must satisfy the requirements identified in subparagraph (ii) of this paragraph for all wastes (or constituents thereof) contained in solid waste management units at the facility regardless of the time the waste was placed in such units.
  - (ii) All solid waste management units must comply with the requirements in subdivision (1) of this section. A surface impoundment, waste pile, land treatment unit or landfill that receives hazardous waste after July 26, 1982 (hereinafter referred to as a regulated unit) must comply with the requirements of subdivisions (b) through (k) in lieu of subdivision (1) for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The financial responsibility requirements of subdivision (1) of this section apply to regulated units.
- (2) The owner or operator is not subject to regulations under this section if:
  - (i) the owner or operator is exempted under section 373-2.1(a) of this Subpart;
  - (ii) the owner or operator designs and operates a pile in compliance with section 373-2.12(a)(3) of this Subpart;
  - (iii) the commissioner finds, pursuant to section 373-2.13(h)(4) of this Subpart, 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 section 373-2.13(f) of this Subpart 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 section during the post-closure care period;
  - (iv) the commissioner finds 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 period specified under section 373-2.7(g) of this Subpart. This demonstration must be 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 must base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration; or

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- (v) the commissioner finds that the unit:
  - ('a') is a structure designed by a professional engineer registered in New York State;
  - ('b') does not receive or contain liquid waste or waste containing free liquids;
  - ('c') is designed and operated to exclude liquid, precipitation, and other run-on and runoff;
  - ('d') has both inner and outer layers of containment enclosing the waste;
  - ('e') has a leak detection system built into each containment layer;
  - ('f') has a program which will provide 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
  - ('g') to a reasonable degree of certainty, will not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the post-closure care period.
- (3) The regulations under this section apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this section:
  - (i) do not apply if all waste, waste residues, contaminated containment system components and contaminated subsoils are removed or decontaminated at closure;
  - (ii) apply during the post-closure care period under section 373-2.7(g) of this Subpart if the owner or operator is conducting a detection monitoring program under subdivision (i) of this section; or
  - (iii) apply during the compliance period under subdivision (g) of this section if the owner or operator is conducting a compliance monitoring program under subdivision (j) or a corrective action program under subdivision (k).
- (4) Regulations in this Subpart may apply to miscellaneous units when necessary to comply with section 373-2.24(b), (c) and (d) of this Subpart.
- (5) The regulations of this section apply to all owners and operators subject to the requirements of section 373-1.2(e)(3) of this Part, when the department issues either a post-closure permit or an enforceable document (as defined in section 373-1.2(e)(3) of this Part), at the facility. When the department issues an enforceable document, references in this section to in the permit mean in the enforceable document.
- (6) The department may replace all or part of the requirements of subdivisions (b) through (k) of this section applying to a regulated unit with alternative requirements for groundwater monitoring and corrective action for releases to groundwater set out in the permit (or in an enforceable document) (as defined in section 373-1.2(e)(3) of this Part) where the department determines that:
  - (i) the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management

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unit(s) (or areas of concern) are likely to have contributed to the release; and

- (ii) it is not necessary to apply the groundwater monitoring and corrective action requirements of subdivisions (b) through (k) of this section because alternative requirements will protect human health and the environment.

#### (b) Required programs.

- (1) Owners and operators subject to this section must conduct a monitoring and response program as follows:
  - (i) Whenever hazardous constituents under subdivision (d) of this section from a regulated unit are detected at the compliance point under subdivision (f), the owner or operator must institute a compliance monitoring program under subdivision (j). *'Detected'* is defined as statistically significant evidence of contamination as described in paragraph (i)(7) of this section.
  - (ii) Whenever the ground-water protection standard under subdivision (c) of this section is exceeded, the owner or operator must institute a corrective action program under subdivision (k). *'Exceeded'* is defined as statistically significant evidence of increased contamination as described in paragraph (j)(8) of this section.
  - (iii) Whenever hazardous constituents under subdivision (d) of this section from a regulated unit exceed concentration limits under subdivision (e) in ground water between the compliance point under subdivision (f) and the downgradient facility property boundary, the owner or operator must institute a corrective action program under subdivision (k).
  - (iv) In all other cases, the owner or operator must institute a detection monitoring program under subdivision (i) of this section.
- (2) The commissioner will specify in the facility permit the specific elements of the monitoring and response program. The commissioner may include one or more of the programs identified in paragraph (1) of this subdivision 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 commissioner will 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.

#### (c) Ground-water protection standard.

The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under subdivision (d) of this section detected in the ground water from a regulated unit do not exceed the concentration limits under subdivision (e) in the uppermost aquifer underlying the waste management area beyond the point of compliance under subdivision (f) during the compliance period under subdivision (g). The commissioner will establish this ground-water protection standard in the facility permit when hazardous constituents have been detected in the groundwater.

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**(d) Hazardous constituents.**

- (1) The commissioner will specify in the facility permit the hazardous constituents to which the ground-water protection standard of subdivision (c) of this section applies. Hazardous constituents are constituents identified in Appendix 23, *infra*, 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 commissioner has excluded them under paragraph (2) of this subdivision.
- (2) The commissioner will exclude an Appendix 23 constituent from the list of hazardous constituents specified in the facility permit if the commissioner finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the commissioner will consider the following:
  - (i) potential adverse effects on ground-water quality, considering:
    - ('a') the physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;
    - ('b') the hydrogeological characteristics of the facility and surrounding land;
    - ('c') the quantity of ground water and the direction of ground-water flow;
    - ('d') the proximity and withdrawal rates of ground-water users;
    - ('e') the current and future uses of ground water in the area and any quality standards established for those ground waters;
    - ('f') the existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;
    - ('g') the potential for health risks caused by human exposure to waste constituents;
    - ('h') the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and
    - ('i') the persistence and permanence of the potential adverse effects; and
  - (ii) potential adverse effects on hydraulically connected surface-water quality, considering:
    - ('a') the volume and physical and chemical characteristics of the waste in the regulated unit;
    - ('b') the hydrogeological characteristics of the facility and surrounding land;
    - ('c') the quantity and quality of ground water, and the direction of ground-water flow;
    - ('d') the patterns of rainfall in the region;
    - ('e') the proximity of the regulated unit to surface waters;
    - ('f') the current and future uses of surface waters in the area and any water quality standards



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established for those surface waters;

- (g) the existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;
- (h) the potential for health risks caused by human exposure to waste constituents;
- (i) the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and
- (j) the persistence and permanence of the potential adverse effects.

- (3) In making any determination under paragraph (2) of this subdivision about the use of ground water in the area around the facility, the commissioner will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8 (see section 370.1(e) of this Title).

**(e) Concentration limits.**

- (1) The commissioner will specify in the facility permit concentration limits in the ground water for hazardous constituents established under subdivision (d) of this section. The concentration of a hazardous constituent:
  - (i) must not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit; or
  - (ii) for any of the constituents listed in Table 1, must 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
  - (iii) must not exceed an alternate limit established by the commissioner under paragraph (2) of this subdivision.

**Table 1****Maximum Concentration of Constituents For Groundwater Protection**

<i>Constituent</i>	<i>Maximum Concentration (mg/l)</i>
Arsenic	0.025
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.025
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 9a-octahydro-1, 4-endo, endo-5, 8-dimethano naphthalene)	Not detectable*
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	Not detectable*
Methoxychlor (1,1,1-Trichloro-2, 2-bis (p-methoxy-phenylethane))	0.035
Toxaphene (C <sub>10</sub> H <sub>10</sub> C <sub>6</sub> , Technical chlorinated camphene, 67-69 percent chlorine)	Not detectable*
2, 4-D (2,4-Dichlorophenoxyacetic acid)	0.0044
2,4,5-TP Silvex (2,4,5 Trichlorophenoxypropionic acid)	0.00026

**Note:** *'Not detectable'* means any test or analytical determination referenced in section 703.4 of this Title.

- (2) The commissioner will establish an alternate concentration limit for a hazardous constituent if the commissioner finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the commissioner will consider the following factors:
- (i) potential adverse effects on ground-water quality, considering:
    - ('a') the physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;
    - ('b') the hydrogeological characteristics of the facility and surrounding land;
    - ('c') the quantity of ground water and the direction of ground-water flow;
    - ('d') the proximity and withdrawal rates of ground-water users;
    - ('e') the current and future uses of ground water in the area and any water quality standards established for those ground waters;
    - ('f') the existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

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- (g') the potential for health risks caused by human exposure to waste constituents;
- (h') the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and
- (i') the persistence and permanence of the potential adverse effects; and
- (ii) potential adverse effects on hydraulically connected surface-water quality, considering:
  - (a') the volume and physical and chemical characteristics of the waste in the regulated unit;
  - (b') the hydrogeological characteristics of the facility and surrounding land;
  - (c') the quantity and quality of ground water, and the direction of ground-water flow;
  - (d') the patterns of rainfall in the region;
  - (e') the proximity of the regulated unit to surface waters;
  - (f') the current and future uses of surface waters in the area and any water quality standards established for those surface waters;
  - (g') the existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;
  - (h') the potential for health risks caused by human exposure to waste constituents;
  - (i') the potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and
  - (j') the persistence and permanence of the potential adverse effects.
- (3) In making any determination under paragraph (2) of this subdivision about the use of ground water in the area around the facility, the commissioner will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8 (see section 370.1(e) of this Title).

**(f) Point of compliance.**

- (1) The commissioner will specify in the facility permit the point of compliance at which the ground-water protection standard of subdivision (c) of this section applies, and at which monitoring must 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) 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.
  - (i) The waste management area includes horizontal space taken up by any liner, dike or other barrier designed to contain waste in a regulated unit.

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

**(g) Compliance period.**

- (1) The commissioner will specify in the facility permit the compliance period during which the ground-water protection standard of subdivision (c) of this section applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting) and the closure period.
- (2) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of subdivision (j) of this section.
- (3) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in paragraph (1) of this subdivision, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of subdivision (c) of this section has not been exceeded for a period of three consecutive years.

**(h) General groundwater monitoring requirements.**

The owner or operator must comply with the following requirements for any groundwater monitoring program developed to satisfy subdivision (i), (j) or (k) of this section:

- (1) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that:
  - (i) represent the quality of background groundwater that has not been affected by leakage from a regulated unit;
    - ('a') a determination of background groundwater quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:
      - ('1') hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; and
      - ('2') sampling at other wells will provide an indication of background ground-water quality that is representative or more representative than that provided by the upgradient wells; and
  - (ii) represent the quality of groundwater passing the point of compliance; and
  - (iii) allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.
- (2) If a facility contains more than one regulated unit, separate ground-water monitoring systems are not required for each regulated unit, provided that 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.

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The commissioner may require separate monitoring systems for separate waste management components.

- (3) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring-well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground-water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.
- (4) The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground-water quality below the waste management area. At a minimum, the program must include procedures and techniques for:
  - (i) sample collection;
  - (ii) sample preservation and shipment;
  - (iii) analytical procedures; and
  - (iv) chain of custody control.
- (5) The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.
- (6) The ground-water monitoring program must include a determination of the ground-water surface elevation each time ground water is sampled.
- (7) In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit will be collected from background wells and wells at the compliance point(s). The number and kinds of samples collected to establish background shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to groundwater from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit which shall be specified in the unit permit upon approval by the commissioner. This sampling procedure shall be:
  - (i) a sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants; or
  - (ii) an alternate sampling procedure proposed by the owner or operator and approved by the commissioner; or

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- (iii) in developing the data base used to determine a background value for each parameter or constituent, the owner or operator must take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background ground-water quality, each time the system is sampled.
- (8) The owner or operator will specify one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent which, upon approval by the commissioner, will be specified in the unit permit. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. Where practical quantification limits (pql's) are used in any of the following statistical procedures to comply with subparagraph (9)(v) of this subdivision, the pql must be proposed by the owner or operator and approved by the commissioner. Use of any of the following statistical methods must be protective of human health and the environment and must comply with the performance standards outlined in paragraph (9) of this subdivision.
- (i) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
  - (ii) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
  - (iii) 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.
  - (iv) A control chart approach that gives control limits for each constituent.
  - (v) Another statistical test method submitted by the owner or operator and approved by the commissioner.
- (9) Any statistical method chosen under paragraph (8) of this subdivision for specification in the unit permit shall comply with the following performance standards, as appropriate:
- (i) The statistical method used to evaluate ground-water monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.
  - (ii) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground-water

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protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experimentwise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.

- (iii) If a control chart approach is used to evaluate ground-water monitoring data, the specific type of control chart and its associated parameter values shall be proposed by the owner or operator and approved by the commissioner if he or she finds it to be protective of human health and the environment.
  - (iv) If a tolerance interval or a prediction interval is used to evaluate ground-water monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be proposed by the owner or operator and approved by the commissioner if he or she finds these parameters to be protective of human health and the environment. These parameters will be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.
  - (v) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit (pql) approved by the commissioner under paragraph (8) of this subdivision that is used in the statistical method shall be 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.
  - (vi) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.
- (10) Ground-water monitoring data collected in accordance with paragraph (7) of this subdivision including actual levels of constituents must be maintained in the facility operating record. The commissioner will specify in the permit when the data must be submitted for review.

**(i) Detection monitoring program.**

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

- (1) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater. The department will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:
  - (i) the types, quantities and concentrations of constituents in wastes managed at the regulated unit;

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- (ii) the mobility, stability and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;
  - (iii) the detectability of indicator parameters, waste constituents and reaction products in ground water; and
  - (iv) the concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground-water background.
- (2) The owner or operator must install a ground-water monitoring system at the compliance point as specified under subdivision (f) of this section. The ground-water monitoring system must comply with subparagraph (h)(1)(ii), and paragraphs (h)(2)-(3) of this section.
  - (3) The owner or operator must conduct a ground-water monitoring program for each chemical parameter and hazardous constituent specified in the permit pursuant to paragraph (1) of this subdivision in accordance with paragraph (h)(7) of this section. The owner or operator must maintain a record of ground-water analytical data as measured and in a form necessary for the determination of statistical significance under paragraph (h)(8) of this section.
  - (4) The department will specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit under paragraph (1) of this subdivision in accordance with paragraph (h)(7) of this section.
  - (5) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.
  - (6) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of paragraphs (h)(4)-(5) of this section.
  - (7) The owner or operator must determine whether there is statistically significant evidence of contamination for any chemical parameter or hazardous constituent specified in the permit pursuant to paragraph (1) of this subdivision at a frequency specified under paragraph (4) of this subdivision.
    - (i) In determining whether statistically significant evidence of contamination exists, the owner or operator must use the method(s) specified in the permit under paragraph (h)(8) of this section. These method(s) must compare data collected at the compliance point(s) to the background ground-water quality data.
    - (ii) The owner or operator must determine whether there is statistically significant evidence of contamination at each monitoring well at the compliance point within a reasonable time period after completion of sampling. The commissioner will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.
  - (8) If the owner or operator determines, pursuant to paragraph (7) of this subdivision, that there is statistically significant evidence of contamination for chemical parameters or hazardous



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constituents specified pursuant to paragraph (1) of this subdivision at any monitoring well at the compliance point, he or she must:

- (i) notify the commissioner of this finding in writing within seven days. The notification must indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination;
- (ii) immediately sample the groundwater in all monitoring wells at the compliance point and determine whether constituents in the list of Appendix 33 of this Title are present and, if so, at what concentration. However, the department, on a discretionary basis, may allow sampling for a site-specific subset of constituents from the Appendix 33 list of this part and other representative/related waste constituents;
- (iii) for any Appendix 33 compounds found in the analysis pursuant to subparagraph (ii) of this paragraph, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the department and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the owner or operator does not resample for the compounds in subparagraph (ii) of this paragraph, the hazardous constituents found during this initial Appendix 33 analysis will form the basis for compliance monitoring;
- (iv) within 90 days, submit to the commissioner an application for a permit modification to establish a compliance monitoring program meeting the requirements of subdivision (j) of this section. The application must include the following information:
  - ('a') an identification of the concentration of any Appendix 33 constituent detected in the ground water at each monitoring well at the compliance point;
  - ('b') any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of subdivision (j) of this section;
  - ('c') any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical methods used at the facility necessary to meet the requirements of subdivision (j) of this section;
  - ('d') for each hazardous constituent detected at the compliance point, a proposed concentration limit under subparagraph (e)(1)(i) or (ii) of this section, or a notice of intent to seek an alternate concentration limit under paragraph (e)(2) of this section; and
- (v) within 180 days, submit to the commissioner:
  - ('a') all data necessary to justify an alternate concentration limit sought under paragraph (e)(2) of this section; and
  - ('b') an engineering feasibility plan for a corrective action program necessary to meet the requirements of subdivision (k) of this section, unless:

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- (1') all hazardous constituents identified under subparagraph (ii) of this paragraph are listed in Table 1 in subdivision (e) of this section and their concentrations do not exceed the respective values given in that Table; or
  - (2') the owner or operator has sought an alternate concentration limit under paragraph (e)(2) of this section for every hazardous constituent identified under subparagraph (ii) of this paragraph.
- (9) If the owner or operator determines, pursuant to paragraph (7) of this subdivision, that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to paragraph (1) of this subdivision at any monitoring well at the compliance point, he or she may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the groundwater. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under subparagraph (8)(iv) of this subdivision, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subparagraph (8)(iv) of this subdivision unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the owner or operator must:
- (i) notify the commissioner in writing, within seven days of determining statistically significant evidence of contamination at the compliance point, that he or she intends to make a demonstration under this paragraph;
  - (ii) within 90 days, submit a report to the commissioner which demonstrates that a source other than a regulated unit caused the contamination, or that the contamination resulted from error in sampling, analysis or evaluation;
  - (iii) within 90 days, submit to the commissioner an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and
  - (iv) continue to monitor in accordance with the detection monitoring program established under this section.
- (10) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this section, he or she must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

#### **(j) Compliance monitoring program.**

An owner or operator required to establish a compliance monitoring program under this section must, at a minimum, discharge the following responsibilities:

- (1) The owner or operator must monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under subdivision (c) of this section. The commissioner will specify the ground-water protection standard in the facility permit, including:

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- (i) a list of the hazardous constituents identified under subdivision (d) of this section;
  - (ii) concentration limits under subdivision (e) for each of those hazardous constituents;
  - (iii) the compliance point under subdivision (f); and
  - (iv) the compliance period under subdivision (g).
- (2) The owner or operator must install a ground-water monitoring system at the compliance point as specified under subdivision (f) of this section. The ground-water monitoring system must comply with subparagraph (h)(1)(ii) and paragraphs (h)(2)-(3) of this section.
- (3) The commissioner will specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with paragraphs (h)(7) and (8) of this section.
- (i) The owner or operator must conduct a sampling program for each chemical parameter or hazardous constituent in accordance with paragraph (h)(7) of this section.
  - (ii) The owner or operator must record ground-water analytical data as measured and in the form necessary for the determination of statistical significance under paragraph (h)(8) of this section for the compliance period of the facility.
- (4) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.
- (5) The department will specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with paragraph (h)(7) of this section.
- (6) Annually, the owner or operator must determine whether additional hazardous constituents from Appendix 33, which could possibly be site-related compounds, but are not on the detection monitoring list in the permit, are actually present in the uppermost aquifer and, if so, at what concentration pursuant to procedures in paragraph (i)(7) of this section. To accomplish this, the owner or operator must consult with the department. The department will determine on a case-by-case basis: which sample collection event during the year will involve enhanced sampling; the number of monitoring wells at the compliance point to undergo enhanced sampling; the number of samples to be collected from each of these monitoring wells; and, the specific constituents from Appendix 33 of this Title for which these samples must be analyzed. If the enhanced sampling event indicates that Appendix 33 constituents are present in the groundwater that are not already identified in the permit as monitoring constituents, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the department, and repeat the analysis. If the second analysis confirms the presence of new constituents, the owner or operator must report the concentration of these additional constituents to the department within seven days after completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then he or she must report the concentrations of these additional constituents to the department within seven days after completion of the initial analysis and add

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them to the monitoring list. Notwithstanding the above reporting requirements, any other applicable statutory and regulatory reporting requirements apply.

- (7) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of paragraphs (h)(4)-(5) of this section.
- (8) The owner or operator must determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit, pursuant to paragraph (1) of this subdivision, at a frequency specified under paragraph (5) of this subdivision.
  - (i) In determining whether statistically significant evidence of increased contamination exists, the owner or operator must use the method(s) specified in the permit under paragraph (h)(8) of this section. The method(s) must compare data collected at the compliance point(s) to the concentration limit for that constituent developed in accordance with subdivision (e) of this section.
  - (ii) The owner or operator must determine whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point, within a reasonable time period after completion of sampling. The commissioner will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.
- (9) If the owner or operator determines, pursuant to paragraph (8) of this subdivision, that any concentration limits under subdivision (e) of this section are being exceeded at any monitoring well at the point of compliance, he or she must:
  - (i) notify the commissioner of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded; and
  - (ii) submit to the commissioner an application for a permit modification to establish a corrective action program meeting the requirements of subdivision (k) of this section within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the commissioner under subparagraph (i)(8)(v) of this section. The application must, at a minimum, include the following information:
    - ('a') a detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under paragraph (1) of this subdivision; and
    - ('b') a plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.
- (10) If the owner or operator determines, pursuant to paragraph (8) of this subdivision, that the ground-water concentration limits under this section are being exceeded at any monitoring well at the point of compliance, he or she may demonstrate that a source other than a regulated unit caused the

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contamination or that the detection is an artifact caused by an error in sampling, analysis or statistical evaluation or natural variation in the ground water. In making a demonstration under this paragraph, the owner or operator must:

- (i) notify the commissioner in writing, within seven days, that he or she intends to make a demonstration under this paragraph;
  - (ii) within 90 days, submit a report to the commissioner which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis or evaluation;
  - (iii) within 90 days, submit to the commissioner an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and
  - (iv) continue to monitor in accordance with the compliance monitoring program established under this section.
- (11) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, the owner or operator must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

### (k) **Corrective action program.**

An owner or operator required to establish a corrective action program under this section must, at a minimum, do the following:

- (1) The owner or operator must take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under subdivision (c) of this section. The commissioner will specify the ground-water protection standard in the facility permit, including:
  - (i) a list of the hazardous constituents identified under subdivision (d) of this section;
  - (ii) concentration limits under subdivision (e) for each of those hazardous constituents;
  - (iii) the compliance point under subdivision (f); and
  - (iv) the compliance period under subdivision (g).
- (2) The owner or operator must 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. The permit will specify the specific measures that will be taken.
- (3) The owner or operator must begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The commissioner will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of subparagraph (j)(9)(ii) of this section.

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- (4) In conjunction with a corrective action program, the owner or operator must establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under subdivision (j) of this section and must be as effective as the program in determining compliance with the ground-water protection standard under subdivision (c) and in determining the success of a corrective action program under paragraph (5) of this subdivision, where appropriate.
- (5) In addition to the other requirements of this subdivision, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under subdivision (d) of this section that exceed concentration limits under subdivision (e) of this section in ground water:
  - (i) Between the compliance point under subdivision (f) of this section and the downgradient facility property boundary.
  - (ii) Beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the commissioner that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner or operator is not relieved of responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. The permit will specify the measures to be taken.
  - (iii) Corrective action measures under this paragraph must be initiated and completed within a reasonable period of time, considering the extent of contamination.
  - (iv) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under subdivision (d) of this section is reduced to levels below their respective concentration limits under subdivision (e) of this section.
- (6) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ground-water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, that corrective action must be continued for as long as necessary to achieve compliance with the ground-water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if the owner or operator can demonstrate, based on data from the ground-water monitoring program under paragraph (4) of this subdivision, that the ground-water protection standard of subdivision (c) of this section has not been exceeded for a period of three consecutive years.
- (7) The owner or operator must report in writing to the department on the effectiveness of the corrective action program. The owner or operator must submit these reports annually unless directed by the department to submit the reports semi-annually.

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- (8) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, the owner or operator must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

#### **(l) Corrective action for solid waste management units.**

- (1) The owner or operator of a facility which has, had, should have had, or is seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time the waste was placed in such unit.
- (2) Corrective action will be specified in the permit or order in accordance with this subdivision and section 373-2.19 of this Subpart. The permit or order will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit or order) and assurances of financial responsibility as defined in section 373-2.8 of this Subpart, except that language is added to the financial assurance mechanism to include corrective action; or as specified in the Part 373 permit for completing such corrective action.
- (3) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the commissioner that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner or operator is not relieved of responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.
- (4) This subdivision does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing or disposing of hazardous wastes that are not remediation wastes.

### **Section 373-2.7 Closure and post-closure.**

#### **(a) Applicability.**

Except as section 373-2.1(a) of this Subpart provides otherwise:

- (1) subdivision (b) through paragraph (f)(1) of this section (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and
- (2) paragraph (f)(2) through subdivision (j) of this section (which concerns post-closure care) apply to the owners and operators of:
  - (i) all hazardous waste disposal facilities;

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- (ii) waste piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to such facilities in sections 373-2.11(f) and 373-2.12(h) of this Subpart;
  - (iii) tank systems that are required under section 373-2.10(h) of this Subpart to meet the requirements for landfills; and
  - (iv) containment buildings that are required under section 373-2.30(c) of this Subpart to meet the requirements for landfills.
- (3) The department may replace all or part of the requirements of this Subpart (and the unit-specific standards referenced in paragraph (b)(3) of this section applying to a regulated unit), with alternative requirements set out in a permit or in an enforceable document (as defined in section 373-1.2(e)(3) of this Part), where the department determines that:
- (i) the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release; and
  - (ii) it is not necessary to apply the closure requirements of this section (and those referenced herein) because the alternative requirements will protect human health and the environment and will satisfy the closure performance standard of paragraph (b)(1) and (2) of this section.

#### **(b) Closure performance standard.**

The owner or operator must close the facility in a manner that:

- (1) minimizes the need for further maintenance; and
- (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 hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and
- (3) complies with the closure requirements of this Subpart, including but not limited to, the requirements of sections 373-2.9(i), 373-2.10(h), 373-2.11(f), 373-2.12(h), 373-2.13(h), 373-2.14(g), 373-2.15(h), 373-2.24(b), (c) and (d), and 373-2.30(c) of this Subpart.

#### **(c) Closure plan; amendment of plan.**

- (1) Written plan.
  - (i) The owner or operator of a hazardous waste management facility must have a written closure plan. In addition, 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 are required by sections 373-2.11(f) and 373-2.12(h) of this Subpart to have contingent closure plans. The plan must be submitted with the permit application, in accordance with section 373-1.5(a)(2)(xiii) of this Part, and approved by the commissioner as part of the permit



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issuance procedures under Part 621 of this Title. In accordance with section 373-1.6(c) of this Part, the approved closure plan will become a condition of any Part 373 permit.

- (ii) The commissioner's approval of the plan must ensure that the approved closure plan is consistent with subdivisions (b) through (f) of this section and the applicable requirements of sections 373-2.6, 373-2.9(i), 373-2.10(h), 373-2.11(f), 373-2.12(h), 373-2.13(h), 373-2.14(g), 373-2.15(h), 373-2.24(b) and 373-2.30(c) of this Subpart. Until final closure is completed and certified in accordance with paragraph (f)(1) of this section, a copy of the approved plan and all approved revisions must be furnished to the commissioner upon request, including requests by mail.
- (2) Content of plan. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:
- (i) a description of how each hazardous waste management unit at the facility will be closed in accordance with subdivision (b) of this section;
  - (ii) a description of how final closure of the facility will be conducted in accordance with subdivision (b) of this section. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility;
  - (iii) an estimate of the maximum inventory of hazardous wastes ever onsite 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 types of the offsite hazardous waste management units to be used, if applicable;
  - (iv) 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;
  - (v) 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 groundwater monitoring, leachate collection, and run-on and runoff control;
  - (vi) a schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must 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 landfall 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 must be included);

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- (vii) for facilities that use trust funds to establish financial assurance under section 373-2.8(d) or (f) of this Subpart and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure; and
  - (viii) for facilities where the department has applied alternative requirements at a regulated unit under sections 373-2.6(a)(6) and/or 373-2.8(a)(4) of this Subpart and/or paragraph (a)(3) of this section, either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.
- (3) Amendment of plan. The owner or operator must 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 Subpart 373-1 of this Part and Part 621 of this Title. The written request must include a copy of the amended closure plan for approval by the commissioner.
- (i) The owner or operator may submit a written request to the commissioner for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.
  - (ii) The owner or operator must submit a written request for a permit modification to authorize a change in the approved closure plan whenever:
    - ('a') changes in operating plans or facility design affect the closure plan;
    - ('b') there is a change in the expected year of closure, if applicable;
    - ('c') in conducting partial or final closure activities, unexpected events require a modification of the approved closure plan; or
    - ('d') the owner or operator requests the department to apply alternative requirements to a regulated unit under sections 373-2.6(a)(6) and/or 373-2.8(a)(4) of this Subpart and/or paragraph (a)(3) of this section.
  - (iii) The owner or operator must submit a written request for a permit modification, including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no 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 must request a permit modification no later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile who intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under section 373-2.11(f) or 373-2.12(h) of this Subpart must submit an amended closure plan to the commissioner no later than 60 days from the date that the owner or operator or commissioner determines that the hazardous waste management unit must be closed as a landfill subject to the requirements of section 373-2.14(g) of this Subpart, or no later than 30 days from that date if the determination is made during partial or final closure. The commissioner will approve, disapprove or modify this amended plan in accordance with the procedures in Subpart 373-1 of this Part and Part 621 of this Title. In

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accordance with section 373-1.6 of this Part, the approved closure plan will become a condition of any Part 373 permit issued.

- (iv) The commissioner may request modifications to the plan under the conditions described in subparagraph (ii) of this paragraph. The owner or operator must submit the modified plan within 60 days of the commissioner's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the commissioner will be approved in accordance with the procedures in Subpart 373-1 of this Part and Part 621 of this Title.
- (4) Notification of partial closure and final closure.
- (i) The owner or operator must notify the department in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator must notify the department in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed. The owner or operator must notify the department in writing at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace, whichever is earlier.
  - (ii) The date when the owner or operator "expects to begin closure" must be either:
    - ('a') no later than 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. If the owner or operator of a hazardous waste management unit can demonstrate to the commissioner that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, and 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, the commissioner may approve an extension to this one-year limit; or
    - ('b') for units meeting the requirements of paragraph (d)(4) of this section, no later than 30 days after the date on which the hazardous waste management unit receives the known final volume of nonhazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional nonhazardous wastes, no later than one year after the date on which the unit received the most recent volume of nonhazardous wastes. If the owner or operator of a hazardous waste management unit can demonstrate to the commissioner that the hazardous waste management unit or facility has the capacity to receive additional nonhazardous wastes and 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, the commissioner may approve an extension to this one-year limit.

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(iii) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under article 71 of ECL, to cease receiving hazardous wastes or to close, then the requirements of this paragraph do not apply. However, the owner or operator must close the facility in accordance with the deadlines established in subdivision (d) of this section.

(5) Removal of wastes and contamination or dismantling of equipment. Nothing in this subdivision 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) Within 90 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in paragraphs (4) and (5) of this subdivision, at a hazardous waste management unit or facility, the owner or operator must treat, remove from the unit or facility, or dispose of onsite, all hazardous wastes in accordance with the approved closure plan. The commissioner may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

(i)

('a') the activities required to comply with this subdivision will, of necessity, take longer than 90 days to complete; or

('b')

('1') the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive nonhazardous wastes if the owner or operator complies with paragraphs (4) and (5) of this subdivision;

('2') there is a reasonable likelihood that the owner or operator, or a person other than the owner or operator, will recommence operation of the hazardous waste management unit or the facility within one year; and

('3') closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; 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.

(2) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in paragraphs (4) and (5) of this subdivision, at the hazardous waste management unit or facility. The commissioner may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

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- (i)
  - ('a') the partial or final closure activities will, of necessity, take longer than 180 days to complete; or
  - ('b')
    - ('1') the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive nonhazardous wastes if the owner or operator complies with paragraphs (4) and (5) of this subdivision; and
    - ('2') there is reasonable likelihood that the owner or a person other than the owner or operator will recommence operation of the hazardous waste management unit or the facility within one year; and
    - ('3') closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and
  - (ii) 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.
- (3) The demonstration referred to in subparagraphs (1)(i) and (2)(i) of this subdivision must be made as follows:
  - (i) the demonstrations in subparagraph (1)(i) of this subdivision must be made at least 30 days prior to the expiration of the 90-day period in subparagraph (1)(i) of this subdivision; and
  - (ii) the demonstration in subparagraph (2)(i) of this subdivision must be made at least 30 days prior to the expiration of the 180-day period in paragraph (2) of this subdivision, unless the owner or operator is otherwise subject to the deadlines in paragraph (4) of this subdivision.
- (4) The commissioner may allow an owner or operator to receive only nonhazardous wastes in a landfill, land treatment unit, or surface impoundment unit after the final receipt of hazardous wastes at that unit if:
  - (i) the owner or operator requests a permit modification in compliance with all applicable requirements in Subpart 373-1 and Part 621 of this Title and in the permit modification request demonstrates that:
    - ('a') the unit has the existing design capacity as indicated on the Part 373 application to receive nonhazardous wastes; and
    - ('b') there is a reasonable likelihood that the owner or operator or another person will receive nonhazardous wastes in the unit within one year after the final receipt of hazardous wastes; and

### 373-2.7(d)

- (c) the nonhazardous wastes will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under this Part; and
  - (d) closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility; and
  - (e) the owner or operator is operating and will continue to operate in compliance with all applicable permit requirements; and
- (ii) the request to modify the permit includes an amended waste analysis plan, ground- water monitoring and response program, human exposure assessment required under section 373-1.5(d) and (h) of this Part, and closure and post-closure plans, and updated cost estimates and demonstrations of financial assurance for closure and post-closure care as necessary and appropriate, to reflect any changes due to the presence of hazardous constituents in the nonhazardous wastes, and changes in closure activities, including the expected year of closure if applicable under subparagraph (c)(2)(vii) of this section, as a result of the receipt of nonhazardous wastes following the final receipt of hazardous wastes; and
  - (iii) the request to modify the permit includes revisions, as necessary and appropriate, to affected conditions of the permit to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and
  - (iv) the request to modify the permit and the demonstrations referred to in subparagraphs (i) and (ii) of this paragraph are submitted to the commissioner no later than 120 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes at the unit, or no later than 90 days after the effective date of this rule, whichever is later.
- (5) In addition to the requirements in paragraph (4) of this subdivision, an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in sections 373-2.11 and 373-2.14 of this Subpart, or section 373-3.11 or 373-3.14 of this Part must:
- (i) Submit with the request to modify the permit:
    - (a) a contingent corrective measures plan, unless a corrective action plan has already been submitted under section 373-2.6(j) of this Part; and
    - (b) a plan for removing hazardous wastes in compliance with subparagraph (5)(ii) of this subdivision; and
  - (ii) 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(s), if any.
  - (iii) Removal of hazardous wastes must be completed no later than 90 days after the final receipt

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of hazardous wastes. The commissioner may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.

- (iv) If a release that is a statistically significant increase (or decrease in the case of pH) over background values for detection monitoring parameters or constituents specified in the permit or that exceeds the facility's groundwater protection standard at the point of compliance, if applicable, is detected in accordance with the requirements in section 373-2.6 of this Subpart, the owner or operator of the unit:
  - ('a') must implement corrective measures in accordance with the approved contingent corrective measures plan required by subparagraph (i) of this paragraph no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;
  - ('b') may continue to receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and
  - ('c') may be required by the commissioner to implement corrective measures in less than one year or to cease the receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.
- (v) During the period of corrective action, the owner or operator shall provide annual reports to the department describing the progress of the corrective action program, compile all groundwater monitoring data, and evaluate the effect of the continued receipt of nonhazardous wastes on the effectiveness of the corrective action. The department may require the owner or operator to report semi-annually as needed to evaluate the progress of the corrective action program.
- (vi) The commissioner may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in subparagraph (iv) of this paragraph, or fails to make substantial progress in implementing corrective action and achieving the facility's groundwater protection standard or background levels if the facility has not yet established a ground-water protection standard.
- (vii) If the owner or operator fails to implement corrective measures as required in subparagraph (iv) of this paragraph, or if the commissioner determines that substantial progress has not been made pursuant to subparagraph (vi) of this paragraph, the commissioner shall:
  - ('a') notify the owner or operator in writing that the department is initiating a modification to the permit, pursuant to Part 621, to require the initiation of closure in accordance with the deadlines in paragraphs (1) and (2) of this subdivision and provide a detailed statement of reasons for this determination.

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#### (e) **Disposal or decontamination of equipment, structures and soils.**

During the partial and final closure periods, all contaminated equipment, structures and soils must be properly disposed of or decontaminated unless otherwise specified in section 373-2.10(b), 373-2.11(f), 373-2.12(h), 373-2.13(h) or 373-2.14(g), or under the authority of section 373-2.24(b) and (d) of this Subpart. By removing any hazardous waste or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of Part 372 of this Title.

#### (f) **Certification of closure and survey plat.**

- (1) Certification of closure. Within 60 days of completion of final closure of a facility, or within 60 days of partial closure of any hazardous waste management unit, the owner or operator must submit to the commissioner, 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 must be signed by the owner or operator and by an independent professional engineer registered in New York. Documentation supporting the independent registered professional engineer's certification must be furnished to the commissioner upon request until the owner or operator is released from the financial assurance requirements for closure under section 373-2.8(d)(8) of this Subpart.
- (2) Survey plat. No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the county clerk in the county in which the facility is located, and to the commissioner, 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 must be prepared and certified by a professional land surveyor registered in New York. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, and with the county clerk in the county in which the facility is located, must 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 regulations of this section.

#### (g) **Post-closure care and use of property.**

- (1)
  - (i) Post-closure care for each hazardous waste management unit subject to the requirements of subdivisions (g) through (j) of this section must begin after completion of closure of the unit and continue for 30 years after that date, and must consist of at least the following:
    - ('a') monitoring and reporting in accordance with the requirements of sections 373-2.6, 373-2.11, 373-2.12, 373-2.13, 373-2.14 and 373-2.24 of this Subpart; and
    - ('b') maintenance and monitoring of waste containment systems in accordance with the requirements of sections 373-2.6, 373-2.12, 373-2.13, 373-2.14 and 373-2.24 of this Subpart.



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(ii) 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 commissioner may, in accordance with the permit modification procedures in Subpart 373-1 of this Part and Part 621 of this Title:

(a) shorten the post-closure care period applicable to the hazardous waste management unit or facility (if all disposal units have been closed) if the commissioner finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment or reuse 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 the commissioner finds that the extended period is necessary to protect human health and the environment (e.g., 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).

(2) The commissioner may require, at partial and final closure, continuation of any of the security requirements of section 373-2.2(f) of this Subpart during part or all of the post-closure period when:

(i) hazardous wastes may remain exposed after completion of partial or final closure; or

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

(3) Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liners, or any other components of the containment system, or the function of the facility's monitoring systems, unless the commissioner finds that the disturbance:

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

(ii) is necessary to reduce a threat to human health or the environment.

(4) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in subdivision (h) of this section.

**(h) Post-closure plan; amendment of plan.**

(1) Written plan. The owner or operator of a hazardous waste disposal unit must have a written post-closure plan. 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 sections 373-2.11(f) and 373-2.12(h) of this Subpart to have contingent post-closure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent post-closure plans under sections 373-2.11(f) and 373-2.12(h) must submit a post-closure plan to the commissioner within 90 days from the date that the owner or operator or

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commissioner determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of subdivisions (g)-(j) of this section. The plan must be submitted with the permit application, in accordance with section 373-1.5(a)(2)(xiii) of this Part, and approved by the commissioner as part of the permit issuance procedures under Part 621 of this Title. In accordance with section 373-1.6(c) of this Part, the approved post-closure plan will become a condition of any Part 373 permit issued.

- (2) For each hazardous waste management unit subject to the requirements of this subdivision, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:
  - (i) a description of the planned monitoring activities and frequencies at which they will be performed to comply with sections 373-2.6, 373-2.11, 373-2.12, 373-2.13, 373-2.14 and 373-2.24 of this Subpart during the post-closure care period;
  - (ii) a description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:
    - ('a') the integrity of the cap and final cover or other containment systems in accordance with the requirements of sections 373-2.6, 373-2.11, 373-2.12, 373-2.13, 373-2.14 and 373-2.24 of this Subpart; and
    - ('b') the function of the monitoring equipment in accordance with the requirements of sections 373-2.6, 373-2.11, 373-2.12, 373-2.13, 373-2.14 and 373-2.24 of this Subpart;
  - (iii) the name, address and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period; and
  - (iv) for facilities where the department has applied alternative requirements at a regulated unit under sections 373-2.6(a)(6) and/or 373-2.8(a)(4) of this Subpart and/or paragraph (a)(3) of this section, either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.
- (3) Until final closure of the facility, a copy of the approved post-closure plan must be furnished to the commissioner upon request, including a request by mail. After final closure has been certified, the person or office specified in subparagraph (2)(iii) of this subdivision must keep the approved post-closure plan during the remainder of the post-closure period.
- (4) Amendment of plan. The owner or operator must request a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements of Subpart 373-1 of this Part and Part 621 of this Title. The written request must include a copy of the amended post-closure plan for approval by the commissioner.
  - (i) The owner or operator may submit a written request to the commissioner 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.

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- (ii) The owner or operator must submit a written request for a permit modification to authorize a change in the approved post-closure plan whenever:
  - ('a') changes in operating plans or facility design affect the approved post-closure plan;
  - ('b') there is a change in the expected year of final closure, if applicable;
  - ('c') events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan; or
  - ('d') the owner or operator requests the department to apply alternative requirements to a regulated unit under sections 373-2.6(a)(6) and/or 373-2.8 (a)(4) of this Subpart and/or paragraph (a)(3) of this section.
- (iii) The owner or operator must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no 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 sections 373-2.11(f) and 373-2.12(h) of this Subpart must submit a post-closure plan to the commissioner no later than 90 days after the date that the owner or operator or commissioner determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of section 373-2.14(g) of this Subpart. The commissioner will approve, disapprove or modify this plan in accordance with the procedures in Subpart 373-1 of this Part and Part 621 of this Title. In accordance with section 373-1.6 of this Part, the approved post-closure plan will become a permit condition.
- (iv) The commissioner may request modifications to the plan under the conditions described in subparagraph (ii) of this paragraph. The owner or operator must submit the modified plan no later than 60 days after the commissioner's request, or no 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 commissioner will be approved, disapproved or modified in accordance with the procedures in Subpart 373-1 of this Part and Part 621 of this Title.

#### **(i) Post-closure notices.**

- (1) No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the county clerk in the county in which the facility is located, and to the commissioner, 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 must identify the type, location and quantity of the hazardous wastes to the best of his or her knowledge and in accordance with any records the owner or operator has kept.
- (2) Within 60 days of certification of closure of the first hazardous waste disposal unit, and within 60

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days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

- (i) record with the county clerk in the county in which the facility is located 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:
  - ('a') the land has been used to manage hazardous wastes;
  - ('b') its use is restricted under this section; and
  - ('c') 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 this subdivision and subdivision (f) of this section have been filed with the local zoning authority, or the authority with jurisdiction over local land use, and with the county clerk in the county in which the facility is located, and with the commissioner; and
- (ii) submit a certification, signed by the owner or operator, that the notation specified in subparagraph (i) of this paragraph has been recorded, including a copy of the document in which the notation has been placed, to the commissioner.

(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 must request a modification to the post-closure permit in accordance with the applicable requirements in Subpart 373-1 of this Part and Part 621 of this Title. The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of paragraph (g)(3) of this section. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 372 and 373 of this Title. If the owner or operator is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the commissioner approve either:

- (i) the removal of the notation on the deed to the facility property or other instrument normally examined during title search; or
- (ii) 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.**

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the commissioner, 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. The certification must be signed by the owner or operator and independent professional engineer registered in New York. Documentation supporting the professional engineer's certification must be furnished to the commissioner upon request

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until the owner or operator is released from the financial assurance requirements for post-closure care under section 373-2.8(f)(8) of this Subpart.

## Section 373-2.8 Financial requirements.

### (a) Applicability.

- (1) The requirements of subdivisions (c), (d) and (h)-(j) of this section apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in section 373-2.1(a) of this Subpart.
- (2) The requirements of subdivisions (e) and (f) of this section apply only to owners and operators of:
  - (i) disposal facilities;
  - (ii) piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to such facilities in sections 373-2.11(f) and 373-2.12(h) of this Subpart;
  - (iii) tank systems that are required under section 373-2.10(h) of this Subpart to meet the requirements for landfills; and
  - (iv) containment buildings that are required under section 373-2.30(c) of this Subpart to meet the requirements for landfills.
- (3) The State and the Federal government are exempt from the requirements of this section.
- (4) The department may replace all or part of the requirements of this section applying to a regulated unit with alternative requirements for financial assurance set out in the permit or in an enforceable document (as defined in section 373-1.2(e)(3) of this Part, where the department:
  - (i) prescribes alternative requirements for the regulated unit under sections 373-2.6(a)(6) and/or 373-2.7(a)(3) of this Subpart; and
  - (ii) determines that it is not necessary to apply the requirements of this section because the alternative financial assurance requirements will protect human health and the environment.
- (5) The total cost estimate for a facility must include all applicable financial assurance obligations (closure, post-closure, corrective action).

### (b) Definitions of terms as used in this section.

- (1) ***'Closure plan'*** means the plan for closure prepared in accordance with the requirements of section 373-2.7(c) of this Subpart.
- (2) ***'Current closure cost estimate'*** means the most recent of the estimates prepared in accordance with paragraphs (c)(1), (2) and (3) of this section.
- (3) ***'Current post-closure cost estimate'*** means the most recent of the estimates prepared in accordance with paragraphs (e)(1), (2) and (3) of this section.

### 373-2.8(b)

- (4) ***'Parent corporation'*** means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a subsidiary of the parent corporation.
- (5) ***'Post-closure plan'*** means the plan for post-closure care prepared in accordance with the requirements of section 373-2.7(g) through (j) of this Subpart.
- (6) ***'Revenue-oriented or revenue-oriented hazardous waste management facility'*** means any facility (as defined in section 27-0917(7) of the ECL or Part 370 of this Title) for which a majority of both its operating revenues and profits after tax at that facility, for the prior three years and for the current and next year, have been and are expected to be attributable to the transportation, storing, handling, disposal, treatment or management of solid and hazardous wastes or related activities, or to the ownership of or leasehold or other interest in any persons, facilities, or other assets engaged in or used for such activities. In making such calculations under this provision, all sources of operating revenues and profits (both before and after tax) shall be included. The commissioner may request any person to show, to the satisfaction of the commissioner, that the facility is not a revenue-oriented hazardous waste management facility by this definition. The commissioner may require a person to present its statements of account, independently audited by a certified public accountant, and other records to make this showing.
- (7) The following terms are used in the specifications for the financial tests for closure, post-closure care and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.
  - (i) ***'Assets'*** means all existing and all probable future economic benefits obtained or controlled by a particular entity.
  - (ii) ***'Current assets'*** means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.
  - (iii) ***'Current liabilities'*** means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.
  - (iv) ***'Current plugging and abandonment cost estimate'*** means the most recent of the estimates prepared in accordance with 40 CFR 144.62 (see section 370.1(e) of this Title).
  - (v) ***'Independently audited'*** refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.
  - (vi) ***'Liabilities'*** means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.
  - (vii) ***'Net working capital'*** means current assets minus current liabilities.

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(viii) *'Net worth'* means total assets minus total liabilities, and is equivalent to owner's equity.

(ix) *'Tangible net worth'* means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

(8) In the liability insurance requirements, the terms *'bodily injury'* and *'property damage'* shall have the meanings given to these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The department intends the meanings or other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations, and are not intended to limit their meanings in a way that conflicts with the general industry usage.

(i) *'Accidental occurrence'* means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

(ii) *'Legal defense costs'* means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

(iii) *'Nonsudden accidental occurrence'* means an occurrence which takes place over time and involves continuous or repeated exposure.

(iv) *'Sudden accidental occurrence'* means an occurrence which is not continuous or repeated in nature.

(9) *'Substantial business relationship'* means the extent of a business relationship necessary under applicable State law to make a guarantee contract issued incident to that relationship valid and enforceable. A substantial business relationship must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the commissioner.

#### (c) Cost estimates for closure.

(1) The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in section 373-2.7(b) through (f) and applicable closure requirements in sections 373-2.9(i), 373-2.10(h), 373-2.11(f), 373-2.12(h), 373-2.14(g), 373-2.15(h), 373-2.24(b), (c) and (d), and 373-2.30(c) of this Subpart.

(i) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see section 373-2.7(c) (2) of this Subpart).

(ii) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of

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the owner or operator. (See definition of parent corporation in subdivision (b) of this section). The owner or operator may use costs for onsite disposal if the owner or operator can demonstrate that onsite disposal capacity will exist at all times over the life of the facility.

- (iii) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or nonhazardous wastes if applicable under section 373-2.7(d)(4) of this Subpart, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.
  - (iv) The owner or operator may not incorporate a zero cost for hazardous wastes, or nonhazardous wastes if applicable under section 373-2.7(d)(4) of this Subpart, that might have economic value.
- (2) During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instruments used to comply with subdivision (d) of this section. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the commissioner as specified in section 373-2.8(d)(5)(iii) of this Subpart. The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent '*Implicit Price Deflator for Gross Domestic Product*' published by the U.S. Department of Commerce in its '*Survey of Current Business*,' as specified in subparagraphs (i) and (ii) of this paragraph. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.
- (i) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.
  - (ii) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.
- (3) During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after the commissioner has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in paragraph (2) of this subdivision.
- (4) The owner or operator must keep the following at the facility during the operating life of the facility: the latest closure cost estimate prepared in accordance with paragraphs (1) and (3) of this subdivision and, when this estimate has been adjusted in accordance with paragraph (2), the latest adjusted closure cost estimate.

#### (d) **Financial assurance for closure.**

An owner or operator of each facility must establish financial assurance for closure of the facility. The owner or operator must choose from the options as specified in paragraphs (1) through (5) of this subdivision. An owner or operator may also use a combination of the options specified in paragraphs (1)



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through (8) to provide the total amount of financial assurance for the closure of the facility.

(1) Closure trust fund.

- (i) An owner or operator may satisfy the requirements of this subdivision by establishing a closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
- (ii) The wording of the trust agreement must be identical to the wording specified in paragraph (j)(1) of this section, and the trust agreement must be accompanied by a formal certification of acknowledgement (for example, see the end of paragraph (j)(1)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.
- (iii) Payments into the trust fund must be made annually by the owner or operator over the first five years of operation or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereinafter referred to as the “pay-in period.” The payments into the closure trust fund must be made as follows:

(a) For a new or revenue-oriented facility, the first payment must be equal to the total closure cost estimate, or an alternative mechanism must be provided which, when combined with the trust fund, provides financial assurance for an amount at least equal to the current closure cost estimate. For a new facility, this payment will be made before the initial receipt of hazardous waste for treatment, storage or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Commissioner of Environmental Conservation before this initial receipt of hazardous waste. For a revenue-oriented facility, the first payment is due 90 days after the date that these regulations are promulgated.

(b) For an existing facility which is not revenue-oriented, the first payment must be at least equal to the current closure cost estimate, except as provided in paragraph (6) of this subdivision, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(c) If an owner or operator establishes a trust fund as specified in this paragraph, and the value of that trust fund is less than the current closure cost estimate when a permit is

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awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in this subparagraph. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Subpart 373-3 of this Part. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

- (iv) The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current closure cost estimate at the time the fund is established. However, the owner or operator must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subparagraph (iii) of this paragraph.
- (v) If the owner or operator established a closure trust fund after having used one or more alternate mechanisms specified in this section or in section 373-3.8(d) of this Part, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and section 373-3.8(d)(1), as applicable.
- (vi) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this subdivision to cover the difference.
- (vii) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the commissioner for release of the amount in excess of the current closure cost estimate.
- (viii) If an owner or operator substitutes other financial assurance as specified in this subdivision for all or part of the trust fund, the owner or operator may submit a written request to the commissioner for release of the amount in excess of the current closure cost estimate covered by the trust fund.
- (ix) Within 60 days after receiving a request from the owner or operator for release of funds as specified in subparagraphs (vii) and (viii) of this paragraph, the commissioner will instruct the trustee to release to the owner or operator such funds as the commissioner specifies in writing.
- (x) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure

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expenditures by submitting itemized bills to the commissioner. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for partial or final closure activities, the commissioner will instruct the trustee to make reimbursements in those amounts as the commissioner specifies in writing, if the commissioner determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the commissioner has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, the commissioner may withhold reimbursements of such amounts as he or she deems prudent until the commissioner determines, in accordance with paragraph (8) of this subdivision, that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the commissioner does not instruct the trustee to make such reimbursements, the commissioner will provide the owner or operator with a detailed written statement of reasons.

(xi) The commissioner will agree to termination of the trust when:

('a') an owner or operator substitutes alternate financial assurance as specified in this subdivision; or

('b') the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.

(2) Surety bond.

(i) An owner or operator may satisfy the requirements of this subdivision by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the commissioner. An owner or operator of a new facility must submit the bond to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(ii) The wording of the surety bond must be identical to the wording specified in paragraph (j)(2) of this section.

(iii) The owner or operator who uses a surety bond to satisfy the requirements of this subdivision must also establish a standby trust fund.. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the commissioner. The standby trust fund must meet the requirements specified in paragraph(1) of this subdivision, except that:

('a') an originally signed duplicate of the trust agreement must be submitted to the commissioner with the surety bond; and

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- (b) until the standby trust fund is funded pursuant to the requirements of this subdivision, the following are not required by these regulations:
  - (1) payments into the trust fund as specified in paragraph (1) of this subdivision;
  - (2) updating of Schedule A of the trust agreement (see paragraph (j)(1) of this section) to show current closure cost estimates;
  - (3) annual valuations as required by the trust agreement; and
  - (4) notices of nonpayment as required by the trust agreement.
- (iv) The bond must guarantee that the owner or operator will:
  - (a) fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or
  - (b) fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin final closure is issued by the commissioner or a U.S. district court or other court of competent jurisdiction; or
  - (c) provide alternate financial assurance as specified in this subdivision, and obtain the commissioner's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the bond from the surety.
- (v) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.
- (vi) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in paragraph (6) of this subdivision.
- (vii) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the commissioner.
- (viii) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail, return receipt requested, to the owner or operator and to the commissioner. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the commissioner, as evidenced by the return receipts.
- (ix) The owner or operator may cancel the bond if the commissioner has given prior written consent based on the receipt of evidence of alternate financial assurance as specified in this subdivision.

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(3) Closure letter of credit.

- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the commissioner. An owner or operator of a new facility must submit the letter of credit to the commissioner at least 60 days before the date on which the hazardous waste is first received for treatment, storage or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.
- (ii) The wording of the letter of credit must be identical to the wording specified in paragraph (j)(3) of this section.
- (iii) An owner or operator who uses a letter of credit to satisfy the requirements of this subdivision must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the commissioner will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the commissioner. This standby trust fund must meet the requirements of the trust fund specified in paragraph (1) of this subdivision, except that:
  - ('a') an originally signed duplicate of the trust agreement must be submitted to the commissioner with the letter of credit; and
  - ('b') unless the standby trust fund is funded pursuant to the requirements of this subdivision, the following are not required by these regulations:
    - ('1') payments into the trust fund as specified in paragraph (1) of this subdivision;
    - ('2') updating of Schedule A of the trust agreement (see paragraph (j)(1) of this section) to show current closure cost estimates;
    - ('3') annual valuations as required by the trust agreement; and
    - ('4') notices of nonpayment as required by the trust agreement.
- (iv) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing the following information: the EPA identification number, name and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.
- (v) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the commissioner by certified mail, return receipt requested, of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the

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commissioner have received the notice, as evidenced by the return receipts.

- (vi) The letter of credit must be issued in an amount at least equal to the current closure estimate, except as provided in paragraph (6) of this subdivision.
  - (vii) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate, and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the commissioner.
  - (viii) Following a determination, pursuant to section 373-2.7 of this Subpart, that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the commissioner may draw on the letter of credit.
  - (ix) If the owner or operator does not establish alternate financial assurance, as specified in this subdivision, and obtain written approval of such alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the commissioner will draw on the letter of credit. The commissioner may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension, the commissioner will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this subdivision and obtain written approval of such assurance from the commissioner.
  - (x) The commissioner will return the letter of credit to the issuing institution for termination when:
    - ('a') an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
    - ('b') the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.
- (4) Closure insurance.
- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the department. An owner or operator of a new facility must submit the certificate of insurance to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be authorized by the Superintendent of the New York State Department of Financial Services to conduct the

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business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in New York State.

- (ii) The wording of the certificate of insurance must be identical to the wording specified in paragraph (j)(4) of this section.
- (iii) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in paragraph (6) of this subdivision. The term limits of liability means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the limits of liability, although the insurer's future liability will be lowered by the amount of the payments.
- (iv) The closure insurance policy must guarantee that funds will be available to close the facility wherever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the limits of liability of the policy, upon the direction of the commissioner, to such party or parties as the commissioner specifies.
- (v) After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the commissioner. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure activities, the commissioner will instruct the insurer to make reimbursements in such amounts as the commissioner specifies in writing, if the commissioner determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the commissioner has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, the commissioner may withhold reimbursements of such amounts as he or she deems prudent until the commissioner determines, in accordance with paragraph (8) of this subdivision, that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the commissioner does not instruct the insurer to make such reimbursements, the commissioner will provide the owner or operator with a detailed written statement of reasons.
- (vi) The owner or operator must maintain the policy in full force and effect until the commissioner consents to termination of the policy by the owner or operator as specified in subparagraph (x) of this paragraph. Failure to pay the premium, without substitution of alternate financial assurance as specified in this subdivision, will constitute a significant violation of these regulations, warranting such remedy as the commissioner deems necessary. Such violation will begin upon receipt by the commissioner of a notice of future cancellation, termination or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

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- (vii) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.
  - (viii) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the limits of liability of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail, return receipt requested, to the owner or operator and the commissioner. Cancellation, termination or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the commissioner and the owner or operator, as evidenced by the return receipts. Cancellation, termination or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:
    - ('a') the commissioner deems the facility abandoned;
    - ('b') interim status is terminated or revoked;
    - ('c') closure is ordered by the commissioner or a United States district court or other court of competent jurisdiction;
    - ('d') the owner or operator is named as debtor in a voluntary or involuntary proceeding under 11 USCA (Bankruptcy); or
    - ('e') the premium due is paid.
  - (ix) Whenever the current closure cost estimate increases to an amount greater than the limits of liability of the policy; the owner or operator, within 60 days after the increase, must either cause the limits of liability to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current closure cost estimate decreases, the limits of liability may be reduced to the amount of the current closure cost estimate following written approval by the commissioner.
  - (x) The commissioner will give written consent to the owner or operator that the insurance policy may be terminated when:
    - ('a') an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
    - ('b') the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.
- (5) Financial test and guarantee for closure.
- (i) An owner or operator of a facility which is not a revenue-oriented facility, may satisfy the requirements of this subdivision by demonstrating that the owner or operator passes a



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financial test as specified in this paragraph. No revenue-oriented facilities will be allowed to use this financial assurance mechanism. To pass this test, the owner or operator must meet the criteria of either clause ('a') or ('b') of this subparagraph.

('a') The owner or operator must have:

- ('1') two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;
- ('2') net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates;
- ('3') tangible net worth of at least \$10 million; and
- ('4') assets in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment costs.

('b') The owner or operator must have:

- ('1') a current rating for their most recent bond insurance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's;
- ('2') tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment costs;
- ('3') tangible net worth of at least \$10 million; and
- ('4') assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment costs.

(ii) The phrases "current closure and post-closure cost estimates" and "current plugging and abandonment cost estimates," as used in subparagraph (i) of this paragraph refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer.

(iii) To demonstrate that he or she meets this test, the owner or operator must submit the following items to the commissioner:

('a') a letter signed by the owner's or operator's chief financial officer and worded as specified in paragraph (j)(5) of this section;

('b') a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

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- (c) a special report from the owner's or operator's independent certified public accountant to the owner or operator, stating that:
  - (1) the accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and
  - (2) in connection with that procedure, no matters came to the accountant's attention which caused the accountant to believe that the specified data should be adjusted.
- (iv) An owner or operator of a new facility must submit the items specified in subparagraph (iii) of this paragraph to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal.
- (v) After the initial submission of items specified in subparagraph (iii) of this paragraph, the owner or operator must send updated information to the commissioner within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subparagraph (iii) of this paragraph.
- (vi) If the owner or operator no longer meets the requirements of subparagraph (i) of this paragraph, the owner or operator must send notice to the commissioner of intent to establish alternate financial assurance as specified in this subdivision. The notice must be sent by certified mail, return receipt requested, within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
- (vii) The commissioner may, based on reasonable belief that the owner or operator may no longer meet the requirements of subparagraph (i) of this paragraph, require reports of financial condition at any time from the owner or operator in addition to those specified in subparagraph (iii) of this paragraph. If the commissioner finds, on the basis of such reports or other information that the owner or operator no longer meets the requirements of subparagraph (i) of this paragraph, the owner or operator must provide alternate financial assurance as specified in this subdivision within 30 days after notification of such a finding.
- (viii) The commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements (see clause (iii)(b) of this paragraph). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this subdivision within 30 days after notification of the disallowance.
- (ix) The owner or operator is no longer required to submit the items specified in subparagraph (iii) of this paragraph when:

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- (a) an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
  - (b) the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.
- (x) An owner or operator of a facility which is not a revenue-oriented facility may meet the requirements of this subdivision by obtaining a written guarantee, herein after referred to as “guarantee.” If the firm which is providing the guarantee does not meet the definition of revenue-oriented in this section or section 373-3.8 of this Part, it may provide the guarantee on behalf of the owner or operator even if the owner or operator is a “revenue-oriented” facility. For a revenue-oriented facility, the financial statement of the owner or operator cannot be consolidated with the financial statement of the guarantor. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in subparagraphs (i) through (viii) of this paragraph and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in paragraph (j)(6) of this section. A certified copy of the guarantee must accompany the items sent to the commissioner as specified in subparagraph (iii) of this paragraph. One of these items must be the letter from the guarantor’s chief financial officer. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a substantial business relationship with the owner or operator, this letter must describe this substantial business relationship and the value received in consideration of the guarantee. The terms of the guarantee must provide that:
- (a) If the owner or operator fails to perform final closure of a facility covered by the guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor will do so or make payment as the commissioner shall direct in writing.
  - (b) The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail, return receipt requested, to the owner or operator and to the commissioner. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the commissioner, as evidenced by the return receipts.
  - (c) If the owner or operator fails to provide alternate financial assurance as specified in this subdivision and obtain the written approval of such alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

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- (6) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this subdivision by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (1), (2), (3) and (4), respectively, of this subdivision, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the trust fund may be used as the standby trust fund for the other mechanisms. A single standby trust fund, if required, may be established for two or more mechanisms. The commissioner may use any or all of the mechanisms to provide for closure of the facility.
- (7) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this subdivision to meet the requirements of this subdivision for more than one facility. Evidence of financial assurance submitted to the commissioner must include a list showing, for each facility, the EPA identification number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the commissioner may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.
- (8) Release of the owner or operator from the requirements of this subdivision. Within 60 days after receiving certifications from the owner or operator and an independent professional engineer registered in New York that final closure has been completed in accordance with the approved closure plan, the commissioner will notify the owner or operator in writing that the owner or operator is no longer required by this subdivision to maintain financial assurance for final closure of the facility, unless the commissioner has reason to believe that final closure has not been in accordance with the approved closure plan. The commissioner shall provide the owner or operator a detailed written statement of any reason to believe that closure has not been in accordance with the approved closure plan.

#### **(e) Cost estimate for post-closure care.**

- (1) The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment unit, or landfill unit, or of a surface impoundment or waste pile, required under sections 373-2.11(f) and 373-2.12(h) of this Subpart to prepare a contingent closure and post-closure plan, must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in sections 373-2.7(g)-(j), 373-2.11(f), 373-2.12(h), 373-2.13(h), 373-2.14(g) and 373-2.24(d) of this Subpart.
  - (i) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a

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parent nor subsidiary of the owner or operator (see definition of parent corporation in subdivision (b) of this section).

- (ii) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under section 373-2.7(g) of this Subpart.
- (2) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instruments used to comply with section 373-2.8(f) of this Subpart. For owners or operators using the financial test or corporate guarantee, the post-closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the commissioner as specified in section 373-2.8(f)(5)(v) of this Subpart. The adjustment may be made by recalculating the post-closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross Domestic Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in subparagraphs (i) and (ii) of this paragraph. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.
- (i) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.
  - (ii) Subsequent adjustments are made by multiplying the latest post-closure estimate by the latest inflation factor.
- (3) During the active life of the facility, the owner or operator must revise the post-closure cost estimate no later than 30 days after the commissioner has approved the request to modify the post-closure plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in paragraph (2) of this subdivision.
- (4) The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with paragraphs (1) and (3) of this subdivision and, when this estimate has been adjusted in accordance with paragraph (2) of this subdivision, the latest adjusted post-closure cost estimate.

#### **(f) Financial assurance for post-closure care.**

The owner or operator of a hazardous waste management unit subject to the requirements of subdivision (e) of this section must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of regulation, whichever is later. The owner or operator must choose from the following options:

- (1) Post-closure trust fund.
  - (i) An owner or operator may satisfy the requirements of this subdivision by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement of the commissioner. An owner or operator

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of a new facility must submit the originally signed duplicate of the trust agreement to the commissioner at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

- (ii) The wording of the trust agreement must be identical to the wording specified in paragraph (j)(1) of this section, and the trust agreement must be accompanied by a formal certification of acknowledgement (for example, see paragraph (j)(1)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.
- (iii) Payments into the trust fund must be made annually by the owner or operator over the first five years of operation or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereinafter referred to as the “pay-in-period.” The payments into the post-closure trust fund must be made as follows:
  - (a) For a new or revenue-oriented facility, the first payment must be equal to the total post-closure cost estimate, or an alternative mechanism must be provided which, when combined with the trust fund, provides financial assurance for an amount at least equal to the current closure cost estimate.
  - (b) For a new facility, the first payment must be made before the initial receipt of hazardous waste. For a revenue-oriented facility, the first payment is due 90 days after the date that these regulations are promulgated. For existing facilities which are not revenue-oriented facilities, the first payment must be at least equal to the current post-closure cost estimate, except as provided in paragraph (6) of this subdivision, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

- (c) If an owner or operator establishes a trust fund as specified in this paragraph, and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in this subparagraph. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to this Subpart. The amount of each

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payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

- (iv) The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, the owner or operator must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subparagraph (iii) of this paragraph.
- (v) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this subdivision or in section 373-3.8(f) of this Part, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph and section 373-3.8(f)(1), as applicable.
- (vi) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this subdivision to cover the difference.
- (vii) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the commissioner for release of the amount in excess of the current post-closure cost estimate.
- (viii) If an owner or operator substitutes other financial assurance as specified in this subdivision for all or part of the trust fund, the owner or operator may submit a written request to the commissioner for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.
- (ix) Within 60 days after receiving a request from the owner or operator for release of funds as specified in subparagraph (vii) or (viii) of this paragraph, the commissioner will instruct the trustee to release to the owner or operator such funds as the commissioner specifies in writing.
- (x) During the period of post-closure care, the commissioner may approve a release of funds if the owner or operator demonstrates to the commissioner that the value of the trust fund exceeds the remaining cost of post-closure care.
- (xi) An owner or operator or another person authorized to conduct post-closure care may request

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reimbursements for post-closure care expenditures by submitting itemized bills to the commissioner. Within 60 days after receiving bills for post-closure care activities, the commissioner will instruct the trustee to make reimbursements in those amounts the commissioner specifies in writing, if the commissioner determines that the post-closure care expenditures are in accordance with the approved post-closure plan, or otherwise justified. If the commissioner does not instruct the trustee to make reimbursements, the commissioner will provide the owner or operator with a detailed written statement of reasons.

- (xii) The commissioner will agree to termination of the trust when:
  - ('a') an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
  - ('b') the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.

(2) Surety bond.

- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the commissioner. An owner or operator of a new facility must submit the bond to the commissioner at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.
- (ii) The wording of the surety bond must be identical to the wording specified in paragraph (j)(2) of this section.
- (iii) The owner or operator who uses a surety bond to satisfy the requirements of this subdivision must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the commissioner. This standby trust fund must meet the requirements specified in paragraph (1) of this subdivision, except that:
  - ('a') an originally signed duplicate of the trust agreement must be submitted to the commissioner with the surety bond; and
  - ('b') until the standby trust fund is funded pursuant to the requirements of this subdivision, the following are not required by these regulations:
    - ('1') payments into the trust fund as specified in paragraph (1) of this subdivision;
    - ('2') updating of Schedule A of the trust agreement (see paragraph (j)(1) of this section) to show current post-closure cost-estimates;
    - ('3') annual valuations as required by the trust agreement; and



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(4) notices of nonpayment as required by the trust agreement.

- (iv) The bond must guarantee that the owner or operator will:
    - (a) fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility;
    - (b) fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin final closure is issued by the commissioner or a United States district court or other court of competent jurisdiction; or
    - (c) provide alternate financial assurance as specified in this subdivision, and obtain the commissioner's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the bond from the surety.
  - (v) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.
  - (vi) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in paragraph (6) of this subdivision.
  - (vii) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the commissioner.
  - (viii) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation, by certified mail, return receipt requested, to the owner or operator and to the commissioner. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the commissioner, as evidenced by the return receipts.
  - (ix) The owner or operator may cancel the bond if the commissioner has given prior written consent based on the receipt of evidence of alternate financial assurance as specified in this subdivision.
- (3) Post-closure letter of credit.
- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the commissioner. An owner or operator of a new facility must submit the letter of credit to the commissioner at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial

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receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

- (ii) The wording of the letter of credit must be identical to the wording specified in paragraph (j)(3) of this section.
- (iii) An owner or operator who uses a letter of credit to satisfy the requirements of this subdivision must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the commissioner will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the commissioner. This standby trust fund must meet the requirements of the trust fund specified in paragraph (1) of this subdivision, except that:
  - ('a') an originally signed duplicate of the trust agreement must be submitted to the commissioner with the letter of credit; and
  - ('b') unless the standby trust fund is funded pursuant to the requirements of this subdivision, the following are not required by these regulations:
    - ('1') payments into the trust fund as specified in paragraph (1) of this subdivision;
    - ('2') updating of Schedule A of the trust agreement (see paragraph (j)(1) of this section) to show current post-closure cost estimates;
    - ('3') annual valuations as required by the trust agreement; and
    - ('4') notices of nonpayment as required by the trust agreement.
- (iv) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing the following information: the EPA identification number, name and address of the facility, and the amount of funds assured for the post-closure care of the facility by the letter of credit.
- (v) The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the commissioner, by certified mail, return receipt requested, of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the commissioner have received the notice, as evidenced by the return receipts.
- (vi) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in paragraph (6) of this subdivision.
- (vii) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the amount of the letter of credit to be increased so

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that it at least equals the current post-closure cost estimate, and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the commissioner.

- (viii) During the period of post-closure care, the commissioner may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the commissioner that the amount exceeds the remaining cost of post-closure care.
  - (ix) Following a determination, pursuant to section 373-2.7 of this Subpart, that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, the commissioner may draw on the letter of credit.
  - (x) If the owner or operator does not establish alternate financial assurance as specified in this subdivision, and obtain written approval of such alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the commissioner will draw on the letter of credit. The commissioner may delay the drawings if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension, the commissioner will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this subdivision and obtain written approval of such assurance from the commissioner.
  - (xi) The commissioner will return the letter of credit to the issuing institution for termination when:
    - ('a') an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
    - ('b') the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.
- (4) Post-closure insurance.
- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the commissioner. An owner or operator of a new facility must submit the certificate of insurance to the commissioner at least 60 days before the date on which hazardous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be authorized by the superintendent of the New York State Insurance Department to conduct the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in New York State.
  - (ii) The wording of the certificate of insurance must be identical to the wording specified in

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paragraph (j)(4) of this section.

- (iii) The post-closure insurance policy must be issued for a limit of liability at least equal to the current post-closure cost estimate, except as provided in paragraph (6) of this subdivision. The term limits of liability means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the limits of liability, although the insurer's future liability will be lowered by the amount of the payments.
- (iv) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. This policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the limits of liability of the policy, upon the direction of the commissioner, to such party or parties as the commissioner specifies.
- (v) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the commissioner. Within 60 days after receiving bills for post-closure care activities, the commissioner will instruct the insurer to make reimbursements in such amounts as the commissioner specifies in writing, if the commissioner determines that the post-closure care expenditures are in accordance with the approved post-closure plan, or otherwise justified. If the commissioner does not instruct the insurer to make such reimbursements, the commissioner will provide the owner or operator with a detailed written statement of reasons.
- (vi) The owner or operator must maintain the policy in full force and effect until the commissioner consents to termination of the policy by the owner or operator as specified in subparagraph (xi) of this paragraph. Failure to pay the premium, without substitution of alternate financial assurance as specified in this subdivision, will constitute a significant violation of these regulations, warranting such remedy as the commissioner deems necessary. Such violation will be deemed to begin upon receipt by the commissioner of a notice of future cancellation, termination or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.
- (vii) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.
- (viii) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the limits of liability of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail, return receipt requested, to the owner or operator and the commissioner. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the commissioner and the owner or operator, as evidenced by the

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return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

- (a) the commissioner deems the facility abandoned;
  - (b) the permit is terminated or revoked or a new permit is denied;
  - (c) closure is ordered by the commissioner or a United States district court or other court of competent jurisdiction;
  - (d) the owner or operator is named as debtor in a voluntary or involuntary proceeding under 11 USCA (Bankruptcy); or
  - (e) the premium due is paid.
- (ix) Whenever the current post-closure cost estimate increases to an amount greater than the limits of liability of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the limits of liability to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the commissioner, or obtain other financial assurance as specified in this subdivision to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the limits of liability may be reduced to the amount of the current post-closure cost estimate following written approval by the commissioner.
- (x) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the limits of liability of the policy. Such increase must be equivalent to the limits of liability of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the United States Treasury for 26-week treasury securities.
- (xi) The commissioner will give written consent to the owner or operator that the insurance policy may be terminated when:
- (a) an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
  - (b) the commissioner releases the owner or operator from the requirements of this subdivision in accordance with paragraph (8) of this subdivision.
- (5) Financial test and guarantee for post-closure care.
- (i) An owner or operator of a facility which is not a revenue-oriented facility may satisfy the requirements of this subdivision by demonstrating that the owner or operator passes a financial test as specified in this paragraph. No revenue-oriented facilities will be allowed to use this financial assurance mechanism. To pass this test, the owner or operator must meet the criteria of either clause ('a') or ('b') of this subparagraph:
    - (a) The owner or operator must have:

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- (1') two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion and amortization to the total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;
  - (2') net working capital and tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates;
  - (3') tangible net worth of at least \$10 million; and
  - (4') assets in the United States amounting to at least 90 percent of the total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.
- (b') The owner or operator must have:
- (1') a current rating for their most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa, A or Baa as issued by Moody's;
  - (2') tangible net worth at least six times the sum of the current closure and post-closure estimates and the current plugging and abandonment costs;
  - (3') tangible net worth of at least \$10 million; and
  - (4') assets located in the United States amounting to at least 90 percent of the total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment costs.
- (ii) The phrases, "current closure and post-closure cost estimates" and "current plugging and abandonment cost estimates," as used in subparagraph (I) of this paragraph refer to the cost estimates required to be shown in paragraph 1-4 of the letter from the owner's or operator's chief financial officer.
- (iii) To demonstrate that he or she meets this test, the owner or operator must submit the following items to the commissioner:
- (a') a letter signed by the owner's or operator's chief financial officer and worded as specified in paragraph (j)(5) of this section;
  - (b') a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and
  - (c') a special report from the owner's or operator's independent certified public accountant to the owner or operator, stating that:
    - (1') the accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end

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financial statements for the latest fiscal year with the amounts in such financial statements; and

- (2) in connection with that procedure, no matters came to the accountant's attention which caused the accountant to believe that the specified data should be adjusted.
- (iv) An owner or operator of a new facility must submit the items specified in subparagraph (iii) of this paragraph to the commissioner at least 60 days before the date on which hazardous waste is first received for disposal.
  - (v) After the initial submission of items specified in subparagraph (iii) of this paragraph, the owner or operator must send updated information to the commissioner within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subparagraph (iii) of this paragraph.
  - (vi) If the owner or operator no longer meets the requirements of subparagraph (I) of this paragraph, the owner or operator must send notice to the commissioner of intent to establish alternate financial assurance as specified in this subdivision. The notice must be sent by certified mail, return receipt requested, within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meet the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.
  - (vii) The commissioner may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subparagraph (I) of this paragraph, require reports of financial condition at any time from the owner or operator in addition to those specified in subparagraph (iii) of this paragraph. If the commissioner finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of subparagraph (I) of this paragraph, the owner or operator must provide alternate financial assurance as specified in this subdivision within 30 days after notification of such a finding.
  - (viii) The commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements (see clause (iii)(b) of this paragraph). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this subdivision within 30 days after notification of the disallowance.
  - (ix) During the period of post-closure care, the commissioner may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the commissioner that the amount of the cost exceeds the remaining cost of post-closure care.
  - (x) The owner or operator is no longer required to submit the items specified in subparagraph (iii) of this paragraph when:

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- (a) an owner or operator substitutes alternate financial assurance as specified in this subdivision; or
  - (b) the commissioner releases the owner or operator from the requirements of this section in accordance with paragraph (8) of this subdivision.
- (xi) An owner or operator of a facility which is not a revenue-oriented facility may meet the requirements of this subdivision by obtaining a written guarantee, hereinafter referred to as “guarantee.” If the firm which is providing the guarantee does not meet the definition of revenue-oriented in this section or section 373-3.8 of this Part, it may provide the guarantee on behalf of the owner or operator even if the owner or operator is a revenue-oriented facility. For a revenue-oriented facility, the financial statement of the owner or operator cannot be consolidated with the financial statement of the guarantor. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a substantial business relationship with the owner or operator. The guarantor must meet the requirements for owners or operators in subparagraphs (i) through (ix) of this paragraph and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in paragraph (j)(6) of this section. A certified copy of the guarantee must accompany the items sent to the commissioner as specified in subparagraph (iii) of this paragraph. One of these items must be the letter from the guarantor’s chief financial officer. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a substantial business relationship with the owner or operator, this letter must describe this substantial business relationship and the value received in consideration of the guarantee. The terms of the guarantee must provide that:
- (a) If the owner or operator fails to perform post-closure care of a facility covered by the guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor will do so or make payment as the commissioner shall direct, in writing.
  - (b) The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail, return receipt requested, to the owner or operator and to the commissioner. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the commissioner, as evidenced by the return receipts.
  - (c) If the owner or operator fails to provide alternate financial assurance as specified in this subdivision and obtain the written approval of such alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the guarantee from the guarantor, the guarantor will provide such financial assurance in the name of the owner or operator.



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- (6) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this subdivision by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (1), (2), (3), and (4), respectively, of this subdivision, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the trust fund may be used as the standby trust fund for the other mechanisms. A single standby trust fund, if required, may be established for two or more mechanisms. The commissioner may use any or all of the mechanisms to provide for post-closure care of the facility.
- (7) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this subdivision to meet the requirements of this subdivision for more than one facility. Evidence of financial assurance submitted to the commissioner must include a list showing, for each facility, the EPA identification number, name, address and the amount of funds for post-closure care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the commissioner may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.
- (8) Release of the owner or operator from the requirements of this subdivision. Within 60 days after receiving certifications from the owner or operator and an independent professional engineer registered in New York that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved post-closure plan, the commissioner will notify the owner or operator in writing that the owner or operator is no longer required by this subdivision to maintain financial assurance for post-closure care of the unit unless the commissioner has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The commissioner shall provide the owner or operator of a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

**(g) Use of a mechanism for financial assurance of both closure and post-closure care.**

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both subdivisions (d) and (f) of this section. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and post-closure care.

**(h) Liability requirements.**

- (1) Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment, storage or disposal facility, or a group of such facilities, must demonstrate financial responsibility

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for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subparagraphs (i), (ii), (iii), (iv), (v) and (vi) of this paragraph.

- (i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subparagraph.
  - ('a') Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in paragraph (j)(7) of this section. The wording of the certificate of insurance must be identical to the wording specified in paragraph (j)(8). The owner or operator must submit a signed duplicate original of the endorsement or certificate of insurance to the commissioner. If requested by the commissioner, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance must be effective before this initial receipt of hazardous waste.
  - ('b') Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer within New York State, by the Superintendent of the New York State Department of Financial Services.
- (ii) An owner or operator of a facility which is not a revenue-oriented facility may meet the requirements of this paragraph by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (6) and (7) of this subdivision. If the firm which is providing the guarantee does not meet the definition of revenue-oriented in this section or section 373-3.8 of this Part, it may provide the guarantee on behalf of the owner or operator even if the owner or operator is a revenue-oriented facility. For a revenue-oriented facility, the financial statement of the owner or operator cannot be consolidated with the financial statement of the guarantor.
- (iii) An owner or operator may meet the requirements of this paragraph by obtaining a letter of credit for liability coverage as specified in paragraph (8) of this subdivision.
- (iv) An owner or operator may meet the requirements of this paragraph by obtaining a surety bond for liability coverage as specified in paragraph (9) of this subdivision.
- (v) An owner or operator may meet the requirements of this paragraph by obtaining a trust fund for liability coverage as specified in paragraph (10) of this subdivision.

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- (vi) An owner or operator may demonstrate the required liability coverage through use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as “primary” coverage and shall specify other assurances as “excess” coverage. An owner or operator of a revenue-oriented facility may use all of the above- mentioned financial mechanisms except the financial test and/or guarantee.
- (vii) An owner or operator shall notify the commissioner in writing within 30 days whenever:
  - ('a') a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subparagraphs (1)(i) through (vi) of this subdivision;
  - ('b') a certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and a third-party-claimant for liability coverage under subparagraphs (1)(i) through (vi) of this subdivision; or
  - ('c') a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparagraphs (1)(i) through (vi) of this subdivision.
- (2) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, land treatment facility, or disposal miscellaneous unit that is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least \$4.5 million per occurrence, with an annual aggregate of at least \$9 million, exclusive of legal defense costs, for each separate facility in New York State. An owner or operator who must meet the requirements of this paragraph may combine the required per occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per- occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least \$5.5 million per occurrence and \$11 million annual aggregate. This liability coverage may be demonstrated as

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specified in subparagraph (i), (ii), (iii), (iv), (v) or (vi) of this paragraph:

- (i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subparagraph.
  - ('a') Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in paragraph (j)(7) of this section. The wording of the certificate of insurance must be identical to the wording specified in paragraph (j)(8). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the commissioner. If requested by the commissioner, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance must be effective before this initial receipt of hazardous waste.
  - ('b') Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or authorized to provide insurance as an excess or surplus lines insurer, within New York State, by superintendent of the New York State Insurance Department.
- (ii) An owner or operator of a facility which is not a revenue-oriented facility may meet the requirements of this paragraph by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (6) and (7) of this subdivision. If the firm which is providing the guarantee does not meet the definition of revenue-oriented in this section or section 373-3.8 of this Part, it may provide the guarantee on behalf of the owner or operator even if the owner or operator is a revenue-oriented facility. For a revenue-oriented facility, the financial statement of the owner or operator cannot be consolidated with the financial statement of the guarantor.
- (iii) An owner or operator may meet the requirements of this paragraph by obtaining a letter of credit for liability coverage as specified in paragraph (8) of this subdivision.
- (iv) An owner or operator may meet the requirements of this paragraph by obtaining a surety bond for liability coverage as specified in paragraph (9) of this subdivision.
- (v) An owner or operator may meet the requirements of this paragraph by obtaining a trust fund for liability coverage as specified in paragraph (10) of this subdivision.
- (vi) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of

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coverage demonstrated must total at least the minimum amount required by this paragraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as “primary” coverage and shall specify other assurances as “excess” coverage. An owner or operator of a revenue-oriented facility may use all of the above-mentioned financial mechanisms except the financial test and/or guarantee.

- (vii) An owner or operator shall notify the commissioner in writing within 30 days whenever:
  - ('a') a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subparagraphs (2)(i) through (vi) of this subdivision;
  - ('b') a certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subparagraphs (2)(i) through (vi) of this subdivision; or
  - ('c') a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparagraphs (2)(i) through (vi) of this subdivision.
- (3) Request for variance. If an owner or operator can demonstrate to the satisfaction of the commissioner that the levels of financial responsibility required by paragraph (1) or (2) of this subdivision are not consistent with the degree and duration of risk associated with treatment, storage or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the commissioner. The request for a variance must be submitted to the commissioner as part of the application under section 373-1.5(a) of this Part for a facility that does not have a permit, or pursuant to the procedures for permit modification under section 373-1.7 for a facility that has a permit. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the commissioner’s assessment of the degree and duration of risk associated with ownership or operation of the facility or group of facilities. The commissioner may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the commissioner to determine a level of financial responsibility other than that required by paragraph (1) or (2) of this subdivision. Any request for a variance for a permitted facility will be treated as a request for a permit modification under section 373-1.7.
- (4) Adjustments by the commissioner. If the commissioner determines that the levels of financial responsibility required by paragraph (1) or (2) of this subdivision are not consistent with the degree and duration of risk associated with treatment, storage or disposal at the facility or group of facilities, the commissioner may adjust the level of financial responsibility required under paragraph

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- (1) or (2) of this subdivision as may be necessary to protect human health and the environment. This adjusted level will be based on the commissioner's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the commissioner determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill or land treatment facility, the commissioner may require that an owner or operator of the facility comply with paragraph (2) of this subdivision. An owner or operator must furnish to the commissioner, within a reasonable time, any information which the commissioner requests to determine whether cause exists for such adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under section 373-1.7 of this Part.
- (5) Period of coverage. Within 60 days after receiving certifications from the owner or operator and an independent professional engineer registered in New York that final closure has been completed in accordance with the approved closure plan, the commissioner will notify the owner or operator in writing that the owner or operator is no longer required by this subdivision to maintain liability coverage for that facility, unless the commissioner has reason to believe that closure has not been in accordance with the approved closure plan.
- (6) Financial test for liability coverage. An owner or operator of a facility which is not a revenue-oriented facility may satisfy the requirements of this subdivision by demonstrating that the owner or operator passes a financial test as specified in this paragraph. To pass this test, the owner or operator must meet the criteria of subparagraph (I) or (ii) of this paragraph.
- (i) The owner or operator must have:
- ('a') net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test;
  - ('b') tangible net worth of at least \$10 million; and
  - ('c') assets in the United States amounting to either:
    - ('1') at least 90 percent of the total assets; or
    - ('2') at least six times the amount of liability coverage to be demonstrated by this test.
- (ii) The owner or operator must have:
- ('a') a current rating for their most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa or Baa as issued by Moody's;
  - ('b') tangible net worth of at least \$10 million;
  - ('c') tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and
  - ('d') assets in the United States amounting to either:

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- (1') at least 90 percent of his total assets; or
  - (2') tangible net worth of at least \$10 million; and
  - (3') tangible net worth at least six times the amount of liability coverage to be demonstrated by this test.
- (iii) The phrase “amount of liability coverage” as used in this paragraph refers to the annual aggregate amounts for which coverage is required under paragraphs (1) and (2) of this subdivision.
- (iv) To demonstrate that he or she meets this test, the owner or operator must submit the following three items to the commissioner:
- (a) a letter signed by the owner’s or operator’s chief financial officer and worded as specified in paragraph (j)(9) of this section. If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by paragraphs (d)(5) and (f)(5) of this section and paragraphs (d)(5) and (f)(5) of section 373-3.8 of this Part, and liability coverage, the letter specified in paragraph (j)(9) of this section must be submitted to cover both forms of financial responsibility; a separate letter as specified in paragraph (j)(5) of this section is not required;
  - (b) a copy of the independent certified public accountant’s report on examination of the owner’s or operator’s financial statements for the latest completed fiscal year; and
  - (c) a special report from the owner’s or operator’s independent certified public accountant to the owner or operator, stating that:
    - (1') the accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and
    - (2') in connection with that procedure, no matters came to the accountant’s attention which caused the accountant to believe that the specified data should be adjusted.
- (v) An owner or operator of a new facility which is not a revenue-oriented facility must submit the items specified in subparagraph (iv) of this paragraph to the commissioner at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal.
- (vi) After the initial submission of items in subparagraph (iv) of this paragraph, the owner or operator must send updated information to the commissioner within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subparagraph (iv) of this paragraph.
- (vii) If the owner or operator no longer meets the requirements of subparagraph (I) of this paragraph, the owner or operator must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in

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this subdivision. Evidence of liability coverage must be submitted to the commissioner within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

- (viii) The commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements (see clause (iv)(b) of this paragraph). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this subdivision within 30 days after notification of the disallowance.
- (7) Guarantee for liability coverage.
- (i) An owner or operator may meet the requirements of this subdivision by obtaining a written guarantee, herein after referred to as "guarantee." The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraph (6) of this subdivision. The wording of the guarantee must be identical to the wording specified in subparagraph (j)(6)(ii) of this section. A certified copy of the guarantee must accompany the items sent to the commissioner as specified in subparagraph (6)(iv) of this subdivision. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of this guarantee. The terms of the guarantee must provide that:
    - ('a') if the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both, as the case may be), arising from the operation of facilities covered by this guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage; and
    - ('b') the guarantee will remain in force unless the guarantor sends notice of cancellation by "certified mail, return receipt requested" to the owner or operator and to the commissioner. This guarantee may not be terminated unless and until the commissioner approves alternate liability coverage complying with this subdivision.
- (8) Letter of credit for liability coverage.



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- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining an irrevocable standby letter of credit that conforms to the requirements of this paragraph and submitting a copy of the letter of credit to the commissioner.
  - (ii) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.
  - (iii) The wording of the letter of credit must be identical to the wording specified in paragraph (j)(10) of this section.
  - (iv) An owner or operator who uses a letter of credit to satisfy the requirements of this subdivision may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
  - (v) The wording of the standby trust fund agreement must be identical to the wording specified in paragraph (j)(13) of this section.
- (9) Surety bond for liability coverage.
- (i) An owner or operator may satisfy the requirements of this subdivision by obtaining a surety bond that conforms to the requirements of this paragraph and submitting a copy of the bond to the commissioner.
  - (ii) The surety company issuing the bond must be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.
  - (iii) The wording of the surety bond must be identical to the wording specified in paragraph (j)(11) of this section.
  - (iv) A surety bond may be used to satisfy the requirements of this subdivision only if the Attorneys General or Insurance Commissioners of
    - ('a') the State in which the surety is incorporated; and
    - ('b') each State in which a facility covered by the surety bond is located have submitted a written statement to the Commissioner that a surety bond executed as described in this subdivision and paragraph (j)(11) of this section is a legally valid and enforceable obligation in that State.
- (10) Trust fund for liability coverage.
- (i) An owner or operator may satisfy the requirements of this subdivision by establishing a trust fund that conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the commissioner.

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- (ii) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
- (iii) The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this subdivision. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this subdivision to cover the difference. For purposes of this paragraph, the *'full amount of liability coverage to be provided'* means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by this subdivision, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.
- (iv) The wording of the trust fund must be identical to the wording specified in paragraph (j)(12) of this section.

**(i) Incapacity of owners or operators, guarantors or financial institutions.**

- (1) An owner or operator must notify the commissioner by certified mail, return receipt requested, of the commencement of a voluntary or involuntary proceeding under 11 USCA (Bankruptcy), naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a guarantee as specified in paragraphs (d)(5) and (f)(5) of this section must make such a notification if the guarantor is named as debtor, as required under the terms of the guarantee (see paragraph (j)(6) of this section).
- (2) An owner or operator who fulfills the requirements of subdivision (d), (f) or (h) of this section by obtaining a trust fund, surety bond, letter of credit or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

**(j) Wording of the instruments. (Send to: NYSDEC, 625 Broadway, Albany, NY 12233-1011)**

- (1) A trust agreement for a trust fund, as specified in paragraph (d)(1) or (f)(1) of this section, or paragraph (d)(1) or (f)(1) of section 373-3.8 of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**TRUST AGREEMENT**

TRUST AGREEMENT, the "Agreement," entered into as of (enter date) by and between (name

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of the owner or operator), a (name of State) (insert “corporation,” “partnership,” “association” or “proprietorship”), the “Settlor,” and (name of a corporate trustee), (insert “incorporated in the State of \_\_\_\_\_” or “a national bank”), the “Trustee.”

WHEREAS, the New York State Department of Environmental Conservation (hereinafter referred to as “NYSDEC”) has established certain regulations applicable to the Settlor, requiring that an owner or operator of a hazardous waste management facility shall provide financial assurance that funds will be available when needed (insert “for facility closure, and post-closure facility monitoring and maintenance,” or other language upon written approval of the Commissioner of NYSDEC which limits or reduces the extent of the activities funded by this trust) (hereinafter referred to as “Closure and Post-Closure”), and

WHEREAS, the Settlor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein, and

WHEREAS, the Settlor acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Settlor and the Trustee agree as follows:

Section 1. *‘Definitions.’* As used in this Agreement:

(a) The term “Settlor” means the owner or operator who enters into this Agreement and any successors or assigns of the Settlor.

(b) The term “Trustee” means the Trustee who enters into this Agreement and any successor Trustee.

(c) The term “Commissioner” means the Commissioner of the New York State Department of Environmental Conservation, or the commissioner’s duly appointed designee.

Section 2. *‘Identification of Facilities and Cost Estimates.’* This Agreement pertains to the facilities and cost estimates identified on attached Schedule A (on Schedule A, for each facility, list the NYSDEC and EPA identification numbers, names, addresses, and the costs, as established or approved by the Commissioner, per facility for Closure and Post-Closure, or portions thereof, for which financial assurance is demonstrated by this Agreement).

Section 3. *‘Establishment of Fund.’* The Settlor and the Trustee hereby establish a trust fund (hereinafter referred to as the “Fund”) for the benefit of NYSDEC. The Settlor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B annexed hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible, nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Settlor, any payments necessary to discharge any liabilities of the Settlor established by NYSDEC.

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Section 4. *'Payment for Closure, Post-Closure.'* The Trustee shall make payment from the Fund as the Commissioner shall direct, in writing, to provide for the payment of the costs of Closure and Post-Closure of the facilities covered by this Agreement. The Trustee shall reimburse the Settlor or other persons as specified by the Commissioner from the Fund for the expenditures of such covered activities in such amounts as the Commissioner shall direct in writing. In addition, the Trustee shall refund to the Settlers such amounts as the Commissioner specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. *'Payments Comprising the Fund.'* Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. *'Trustee Management.'* The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Settlor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Settlor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, 15 USCA 80a-2(a) (see section 370.1(e)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. *'Commingling and Investment.'* The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 USCA 80a-1et seq. (see 6 NYCRR 370.1(e)), including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. *'Express Powers of Trustee.'* Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is

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expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government;

(e) To accept additions to the Fund from sources other than the Settlor of the Trust; and

(f) To contest, compromise, or otherwise settle any claim in favor of the Fund or Trustee, or in favor of third persons and against the Fund or Trustee.

Section 9. *'Taxes and Expenses.'* All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Settlor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. *'Annual Valuation.'* The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish, to the Settlor and to the Commissioner, a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of the establishment of the Fund. The failure of the Settlor to object in writing to the Trustee within 90 days after the statement has been furnished to the Settlor and to the Commissioner shall constitute a conclusively binding assent by the Settlor, barring the Settlor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. *'Advice of Counsel.'* The Trustee may from time to time consult with counsel, who may

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be counsel to the Settlor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. *'Trustee Compensation.'* The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Settlor.

Section 13. *'Successor Trustee.'* The Trustee may resign or the Settlor may replace the Trustee, but such resignation or replacement shall not be effective until the Settlor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Settlor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instruction. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Settlor, the Commissioner, and the present Trustee by certified mail, return receipt requested, 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. *'Instructions to the Trustee.'* All orders, requests and instructions by the Settlor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Settlor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Settlor's orders, requests and instructions. All orders, requests and instructions by the Commissioner to the Trustee shall be in writing, signed by the Commissioner, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Settlor or NYSDEC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests and instructions from the Settlor and/or NYSDEC except as provided for herein.

Section 15. *'Notice of Nonpayment.'* The Trustee shall notify the Settlor and the Commissioner, by certified mail, return receipt requested, within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Settlor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. *'Amendment of Agreement.'* This Agreement may be amended by an instrument in writing executed by the Settlor, the Trustee and the Commissioner, or by the Trustee and the Commissioner if the Settlor ceases to exist.

Section 17. *'Irrevocability and Termination.'* Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Settlor, the Trustee and the Commissioner, or by the

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Trustee and the Commissioner if the Settlor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Settlor.

Section 18. *'Immunity and Indemnification.'* The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in the carrying out of any directions by the Settlor or the Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Settlor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Settlor fails to provide such defense.

Section 19. *'Choice of Law.'* This Agreement shall be administered, construed and enforced according to the laws of the State of New York.

Section 20. *'Interpretation.'* As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 6 NYCRR 373-2.8(j)(1) as such regulations were constituted on the date first above written.

\_\_\_\_\_  
Settlor

\_\_\_\_\_  
Trustee

(ACKNOWLEDGEMENT BY TRUSTEE, IF A BANK)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the banking institution described in and which executed the within Trust Fund Agreement; and that (s)he signed his/her name thereto by authority of such banking institution.

\_\_\_\_\_  
Notary Public

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(ACKNOWLEDGEMENT BY TRUSTEE, IF A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Agreement; that (s)he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

(ACKNOWLEDGEMENT BY SETTLER/OWNER OPERATOR, UNLESS IT BE A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known and known to me to be the person(s) described in and who executed the within Trust Fund Agreement and acknowledged that (s)he executed the same.

\_\_\_\_\_  
Notary Public

(ACKNOWLEDGEMENT BY SETTLER/OWNER OPERATOR, IF A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Agreement; that (s)he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the board of directors of said



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corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

- (2) A surety bond, as specified in paragraph (d)(2) or (f)(2) of this section, or paragraph (d)(2) or (f)(2) of section 373-3.8 of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**SURETY BOND**

Bond Number: \_\_\_\_\_

Date bond executed: \_\_\_\_\_

(If more than one Surety, identify bond number with respective surety)

Effective date: \_\_\_\_\_

Principal: \_\_\_\_\_

(Legal name and business address of owner or operator)

Type of organization: \_\_\_\_\_

(Insert "individual," "joint venture," "partnership" or "corporation")

State of Incorporation: \_\_\_\_\_

Surety(ies): \_\_\_\_\_

(Name(s) and business address(es) of Surety(ies))

Obligee: New York State Department of  
Environmental  
Conservation

EPA identification numbers, name, address, and closure and/or post-closure amount(s) for each facility guaranteed by this bond (indicate facility and closure and/or post-closure amounts separately):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total penal sum of bond: \$\_\_\_\_\_ (payable in good and lawful money of the United States of America)

NOW, THEREFORE, know All Persons By These Presents, that we, the Principal and Surety(ies) hereto are held and firmly bound to NYSDEC in the above penal sum for the payment of which we

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bind ourselves, our heirs, executors, administrators, successors and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum “jointly and severally” only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS said Principal is required, under ECL art. 27, to have a permit or interim status in order to own or operate each hazardous waste management facility identified above; and

WHEREAS said principal is required to provide financial assurance for closure, or closure and post-closure care, as referred to above, as a condition of the permit(s) or interim status; and

WHEREAS said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility.

OR, if the Principal shall fund the standby trust fund in such amounts(s) within 15 days after an order to begin closure is issued by the Commissioner or a United States district court or other court of competent jurisdiction.

OR, if the Principal shall provide alternate financial assurance, as specified in ECL section 27-0917 or 6 NYCRR section 373-2.8 or 373-3.8, as applicable, and obtain the Commissioner’s written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Commissioner from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions set forth above. Upon notification by the Commissioner that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Commissioner.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail, return receipt requested, to the Principal and the Commissioner, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Commissioner, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies) provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Commissioner.

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(The following paragraph is an optional rider that may be included, but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Commissioner.

IN WITNESS WHEREOF, the Principal and Surety(ies) have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 6 NYCRR 373-2.8(j)(2), as such regulations were constituted on the date this bond was executed.

**PRINCIPAL**

(Signature(s)) \_\_\_\_\_

(Name(s)) \_\_\_\_\_

(Title(s)) \_\_\_\_\_

(Corporate Seal) \_\_\_\_\_

**CORPORATE SURETY(IES)**

(Name and Address)

State of incorporation: \_\_\_\_\_

Liability limit: (For each facility, and in the aggregate)

\$ \_\_\_\_\_

(Signature(s)) \_\_\_\_\_

(Name(s) and Title(s)) \_\_\_\_\_

(Corporate Seal) \_\_\_\_\_

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above).

Bond Premium: \$ \_\_\_\_\_

**(ACKNOWLEDGEMENT BY PRINCIPLE, UNLESS IT BE A CORPORATION)**

STATE OF \_\_\_\_\_ :

: SS.:

COUNTY OF \_\_\_\_\_ :

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On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known and known to me to be the person(s) described in and who executed the foregoing instrument and acknowledged that (s)he executed the same.

\_\_\_\_\_  
Notary Public

**(ACKNOWLEDGEMENT BY PRINCIPLE, IF A CORPORATION)**

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within instrument; that (s)he knows the seal of said corporation; that seal affixed to said instrument was such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

**(ACKNOWLEDGEMENT BY SURETY COMPANY; PREPARE SEPARATE  
ACKNOWLEDGEMENT FOR EACH SURETY)**

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, being duly sworn, did depose sand say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of (insert name of Surety), the corporation described in and which executed the within instrument; that (s)he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by like order; and that the liabilities of said company do not exceed its asserts as ascertained in the manner provided by the laws of the State of New York.

\_\_\_\_\_  
Notary Public

- (3) A letter of credit, as specified in paragraph (d)(3) or (f)(3) of this section, or paragraph (d)(3) or (f)(3) of section 373-3.8 of this Part, must be worded as follows, except that instructions in brackets

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are to be replaced with the relevant information and the brackets deleted:

**Irrevocable Standby Letter of Credit**

Name and address of banking establishment

Commissioner

New York State Department of Environmental Conservation

625 Broadway

Albany, NY 12233-1011

Re: Letter of Credit No. \_\_\_\_\_

Dear Sir or Madam,

We hereby establish and open our Irrevocable Standby Letter of Credit No. \_\_\_ in your favor, at the request and for the account of (owner's or operator's name and address), up to the aggregate amount of (insert amount of dollars in words) U.S. dollars (\$ \_\_\_), available upon presentation of:

(1) your sight draft, bearing reference to this Letter of Credit No. \_\_\_\_\_, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the New York State Environmental Conservation Law."

This letter of credit is effective as of (date) and shall expire on (date at least one year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date) and on each successive expiration date thereafter, unless at least 120 days before the current expiration date, we notify both you and (owner's or operator's name) by certified mail, return receipt requested, that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft and the above-referred-to signed statement for 120 days after the date of receipt by both you and (owner's or operator's name), as shown on the signed return receipts.

The (insert name of bank issuing letter of credit) agrees that whenever this letter of credit is drawn on, under and in compliance with the terms of this letter of credit, that (insert name of bank issuing letter of credit) shall duly honor such draft upon presentation to (insert name of bank issuing letter of credit) and the (insert name of bank issuing letter of credit) shall deposit the amount of the draft into the standby trust fund of (owner's or operator's name) in accordance with the Commissioner's instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 6 NYCRR 373-2.8(j)(3), as such regulations were constituted on the date shown immediately below.

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Very truly yours,

(insert name of bank issuing credit)

By: \_\_\_\_\_

(insert name and title of authorized employee or officer of bank issuing letter of credit.)

Date: \_\_\_\_\_

This credit is subject to (insert “the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce,” or “the Uniform Commercial Code of the State of New York”).

- (4) A certificate of insurance, as specified in paragraph (d)(4) or (f)(4) of this section, or (d)(4) or (f)(4) of section 373-3.8 of this Part, must be worded as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

CERTIFICATE OF INSURANCE FOR CLOSURE AND/OR POST-CLOSURE CARE

Name and Address of Insurer

(hereinafter called the “Insurer”): \_\_\_\_\_

Name and Address of Insured

(hereinafter called the “Insured”): \_\_\_\_\_

Facilities Covered: (List for each facility: EPA identification Numbers, names, addresses, and the amount of insurance for facility closure, and for post-closure monitoring and maintenance (these amounts for all facilities covered must total the face amount shown below.))

Face Amount: \_\_\_\_\_

Policy Number: \_\_\_\_\_

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

The insurer certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance (insert “for facility closure and for post-closure monitoring and maintenance,” or such other language, upon written approval of the Commissioner, which limits or reduces the extent of the activities covered) for the facilities identified above. The Insurer further warrants that the policy conforms in all respects to the requirements of 6 NYCRR Part 370 et seq., as applicable and as such regulations were constituted on the date shown immediately below. It is agreed

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that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the Commissioner of the New York State Department of Environmental Conservation (hereinafter referred to as the “Commissioner”), the Insurer agrees to furnish to the Commissioner a duplicate original of the policy listed above including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in 6 NYCRR 373-2.8(j)(4), as such regulations were constituted on the date shown immediately below.

(Insert Authorized Signature for Insurer)

\_\_\_\_\_  
(Insert Name of Person Signing)

(Insert Title of Person Signing)

Sworn to before me this \_\_\_\_ day of \_\_\_\_.

\_\_\_\_\_  
Notary Public

- (5) A letter from the chief financial officer, as specified in paragraph (d)(5) or (f)(5) of this section, or (d)(5) or (f)(5) of section 373-3.8 of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter from Chief Financial Officer

(Address to Commissioner of DEC)

I am the chief financial officer of (name and address of firm). This letter is in support of this firm’s use of the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in 6 NYCRR 373-2.8 and 373-3.8.

(Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write “None” in the space indicated. For each facility, include its EPA identification number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

1. This firm is the owner or operator of the following facilities for which financial assurance for closure and/or post-closure care is demonstrated through the financial test specified in 6 NYCRR 373-2.8 and 373-3.8. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: \_\_\_\_\_.

2. This firm guarantees, through the guarantee specified in 6 NYCRR 373-2.8 and 373-3.8, the closure and/or post-closure care of the following facilities owned and operated by the guaranteed party. The current cost estimates for the closure and/or post-closure care so guaranteed are shown for each facility: \_\_\_\_\_.

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The firm identified above is (insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee; or (3) engaged in the following substantial business relationship with the owner or operator, and receiving the following value in consideration of this guarantee)). (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.)

3. For facilities not located in New York, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure, and/or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: \_\_\_\_\_.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or New York or other states through the financial test or any other financial assurance mechanism specified in subpart H of 40 CFR parts 264 and 265 or equivalent or substantially equivalent state mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: \_\_\_\_\_.

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144 (see 6 NYCRR 370.1(e)). The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: \_\_\_\_\_.

This firm (insert “is required” or “is not required”) to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm’s independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

(Fill in Alternative I if the criteria of clause (‘a’) of either 6 NYCRR 373-2.8(d)(5)(i) or (f)(5)(i), or 6 NYCRR 373-3.8(d)(5)(i) or (f)(5)(i) are used. Fill in Alternative II if the criteria of clause (‘b’) of either 6 NYCRR 373-2.8(d)(5)(i) or (f)(5)(i), or 6 NYCRR 373-3.8(d)(5)(i) or (f)(5)(i) are used).

**Alternative I**

1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the five paragraphs above) \$ \_\_\_\_\_

\*2. Total liabilities (if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4) \$ \_\_\_\_\_

\*3. Tangible net worth \$ \_\_\_\_\_



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- \*4. Net worth \$ \_\_\_\_\_
- \*5. Current assets \$ \_\_\_\_\_
- \*6. Current liabilities \$ \_\_\_\_\_
- \*7 Net working capital (line 5 minus line 6) \$ \_\_\_\_\_
- \*8. The sum of net income plus depreciation, depletion and amortization \$ \_\_\_\_\_
- \*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) \$ \_\_\_\_\_

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	Yes	No
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- 10. Is line 3 at least \$10 million? \_\_\_\_\_
- 11. Is line 3 at least 6 times line 1? \_\_\_\_\_
- 12. Is line 7 at least 6 times line 1? \_\_\_\_\_
- \*13. Are at least 90% of the firm's assets located in the U.S.?  
If not, complete line 14. \_\_\_\_\_
- 14. Is line 9 at least 6 times line 1? \_\_\_\_\_
- 15. Is line 2 divided by line 4 less than 2.0? \_\_\_\_\_
- 16. Is line 8 divided by line 2 greater than 0.1? \_\_\_\_\_
- 17. Is line 5 divided by line 6 greater than 1.5? \_\_\_\_\_

**Alternative II**

- 1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the five paragraphs above) \$ \_\_\_\_\_
- 2. Current bond rating of most recent issuance of this firm and name of rating service \_\_\_\_\_
- 3. Date of issuance of bond \_\_\_\_\_
- 4. Date of maturity of bond \_\_\_\_\_
- \*5. Tangible net worth (if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line) \$ \_\_\_\_\_

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- \*6. Total assets in U.S. (required only if less than 90% of firm’s assets are located in the U.S.) \$ \_\_\_\_\_
- 7. Is line 5 at least 10 million? \_\_\_\_\_
- 8. Is line 5 at least 6 times line 1? \_\_\_\_\_
- \*9. Are at least 90% of the firm’s assets located in the U.S.?  
If not, complete line 10. \_\_\_\_\_
- 10. Is line 6 at least 6 times line 1? \_\_\_\_\_

I hereby certify that the wording of this letter is identical to the wording specified in 6 NYCRR 373-2.8(j)(5), as such regulations were constituted on the date shown immediately below.

(Signature)

(Name)

(Title)

(Date)

(6)

- (i) A guarantee, as specified in paragraph (d)(5) or (f)(5) of this section, or section 373-3.8(d)(5) or (f)(5) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

(Date)

(City and State)

**GUARANTEE FOR CLOSURE AND/OR POST-CLOSURE CARE**

Guarantee made this (date) by (name of guaranteeing entity), a business corporation organized under the laws of the State of (insert name of state of incorporation), (hereafter referred to as “Guarantor”). This Guarantee is made on behalf of (insert name of owner or operator) of (business address), which is (one of the following: “our subsidiary”; “a subsidiary of (name and address of common parent corporation), of which Guarantor is a subsidiary” or “an entity with which Guarantor has a substantial business relationship, as defined in 6 NYCRR 373-2.8(b) or 373-3.8(b)”) to the New York State Department of Environmental Conservation; and

WHEREAS, the New York State Department of Environmental Conservation (hereinafter referred to as “Obligee” or “NYSDEC”) is unwilling to issue a permit to, or otherwise authorize or approve the operation or continued operation by, (insert name of owner or operator) of certain hazardous waste management facilities or facility, referred to in paragraph 2 below (hereinafter referred to as the “Facility(ies)”), unless NYSDEC receives a guarantee of the undersigned covering the obligations and liabilities of (insert name of owner or operator) to NYSDEC arising out of the performance of (insert “facility closure and post-closure facility monitoring and maintenance,” or other language

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upon written approval of the Commissioner which limits or reduces the activity guaranteed) (hereinafter referred to as “closure and post-closure care”) by (insert name of owner or operator) of the hazardous waste management facility(ies);

NOW, THEREFORE, in consideration of these premises and of other good and valuable consideration, and in order to induce NYSDEC now, and from time to time, in its discretion, to issue permits to (insert name of owner or operator) for the ownership or operation of the hazardous waste management facility(ies) or to allow or authorize (insert name of owner or operator) to continue to conduct the operation or ownership of the hazardous waste management facility(ies), the undersigned hereby guarantees, absolutely and unconditionally, to NYSDEC the payment of all liabilities of (insert name of owner or operator) of whatever nature, whether now existing or hereinafter incurred, and whether absolute or contingent, arising out of the obligation of (insert name of owner or operator) to NYSDEC to perform the required closure and post-closure care, as hereinbefore stated, to or for the facility(ies) in accordance with the plans and permits submitted or issued to (insert name of owner or operator) in accordance with New York State Environmental Conservation Law, article 27, and 6 NYCRR Part 370 *et seq.*, (all of which are hereinafter collectively referred to as the “Liabilities of the (insert name of owner or operator)”).

#### Recitals

The guarantor further states as follows:

1. Guarantor meets or exceeds the financial test criteria of New York State Environmental Conservation Law, article 27 (hereinafter referred to as “ECL art. 27”) and 6 NYCRR Part 370 *et seq.*, and agrees to comply with the reporting requirements for Guarantors as specified in 6 NYCRR Part 370 *et seq.*

2. (Insert name of owner or operator) owns or operates the following hazardous waste management facility(ies) covered by this Guarantee: (List for each facility: EPA identification numbers, names and addresses. Indicate for each facility whether

Guarantee is for facility closure and post-closure facility monitoring and maintenance, or both).

3. “Closure plans” and “post-closure plans” (such plans include, where applicable, those agreements between the owner and operator of the subject facility(ies) and NYS DEC as to closure and post-closure care), as used below, refer to the plans prepared, submitted and maintained as required by ECL art. 27 and 6 NYCRR Part 370 *et seq.*, for the closure and post-closure care of the facilities as identified in paragraph 2 above.

4. For value received from (owner or operator), Guarantor guarantees to NYSDEC that in the event that (insert name of owner or operator) fails to perform closure or post-closure care of the above facility(ies), as referred to in paragraph 2 above, in accordance with the closure or post-closure plans and other permit or interim status requirements, whenever required to do so by the Commissioner of NYSDEC (hereinafter referred to as the “Commissioner”), the Guarantor shall do so or establish a trust fund as specified in 6 NYCRR Part 370 *et seq.*, as applicable, in the name of (owner or operator)

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in the amount of the current closure and post-closure cost estimates or as specified by the Commissioner.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this Guarantee, the Guarantor fails to meet the financial test criteria, Guarantor shall send, within ninety (90) days, by certified mail, return receipt requested, notice to the Commissioner and to (insert name or owner or operator) that the guarantor intends to provide alternate financial assurance as specified in 6 NYCRR Part 370 *et seq.*, as applicable, in the name of (insert name of owner or operator). Within 120 days after the end of such fiscal year, the Guarantor shall establish such financial assurance unless (insert name of owner or operator) has done so.

6. The Guarantor agrees to notify the Commissioner, by certified mail, return receipt requested, of a voluntary or involuntary case or proceeding under 11 USCA (Bankruptcy) naming Guarantor as Debtor, within ten (10) days after commencement of the case of proceeding.

7. Guarantor agrees that within thirty (30) days after being notified by the Commissioner, of a determination that Guarantor no longer meets the financial test criteria, or that the Guarantor is disallowed from continuing as a Guarantor of closure or post-closure care, the Guarantor shall establish alternate financial assurance as specified in 6 NYCRR Part 370 *et seq.*, as applicable, in the name of (insert name of owner or operator) unless (insert name of owner or operator) has done so.

8. Guarantor agrees to remain bound under this Guarantee notwithstanding any or all of the following:

- (a) amendment or modification of the closure or post-closure plan;
- (b) amendment of modification of the permit;
- (c) the extension or reduction of the time of performance of closure or post-closure care; or
- (d) any other modification or alteration of an obligation of the owner or operator pursuant to 6 NYCRR Part 370 *et seq.*

9. Guarantor agrees to remain bound under this Guarantee for so long as (insert name of owner or operator) must comply with the applicable financial assurance requirements of 6 NYCRR Part 370 *et seq.*, for the above-listed facility(ies), except as provided in paragraph 10 of this agreement.

10. (Insert the following language if the Guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator):

Guarantor may terminate this guarantee by sending notice by certified mail, return receipt requested, to the Commissioner and to (insert name of owner or operator), provided that this guarantee may not be terminated unless and until (insert name of owner or operator) obtains, and the Commissioner approves alternate closure and/or post- closure care coverage complying with 6 NYCRR Part 370 *et seq.*

(Insert the following language if the Guarantor is a firm qualifying as a Guarantor due to its “substantial business relationship” with the owner or operator).

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Guarantor may terminate this Guarantee 120 days following the receipt of notification, through certified mail, return receipt requested, by the Commissioner and by (insert name of owner or operator).

11. Guarantor agrees that if (insert name of owner or operator) fails to provide alternate financial assurance as specified in 6 NYCRR Part 370 *et seq.*, as applicable, and obtain written approval of such assurance from the Commissioner, or the Commissioner's designee, within 90 days after a notice of cancellation by the Guarantor is received by the Commissioner from the Guarantor, Guarantor shall provide such alternate financial assurance in the name of (insert name of owner or operator).

12. Guarantor expressly waives any or all of the following:

(a) notice of acceptance of this Guarantee by the Commissioner or by (insert name of owner or operator);

(b) notice of amendments or modification of the closure and/or post-closure plan;

(c) amendments or modifications of the facility(ies) permit(s); and

(d) any demand to (insert name of owner or operator) for payments which this instrument guarantees.

13. All monies available to NYSDEC for application in payment or reduction of the liabilities of (insert name of owner or operator) may be applied by NYSDEC in such manner and in such amounts and at such time or times as NYSDEC may see fit to the payment or reduction of such of the liabilities of (insert name of owner or operator) as NYSDEC may elect.

14. This is a guarantee of payment and not of collection, and the undersigned further waives any right to require that any action be brought against (insert name of owner or operator) or any other person, or to require that resort be had to any security or to any balance of any trust account, letter of credit, insurance policy or surety bond, to the benefit of NYSDEC.

15. Each reference herein to NYSDEC shall be deemed to include its successors and assigns, in whose favor the provisions of this Guarantee shall also ensure. Each reference herein to the undersigned shall be deemed to include the heirs, executors, administrators, legal representatives, successors and assigns to the undersigned, all of whom shall be bound by the provisions of this Guarantee.

16. If any party hereto shall be in partnership, the agreements and obligations on the part of the undersigned herein contained shall remain in force and applicable, notwithstanding any changes in the individuals composing the partnership, and the term '*undersigned*' shall include any altered or successive partnership, but the predecessor partnerships and their partners shall not thereby be released from any obligation or liability.

17. No delay on the part of NYSDEC in exercising any right hereunder, or failure to exercise the same, shall operate as a waiver of such right; no notice to or demand on the undersigned shall be deemed to be a waiver of the obligation of the undersigned or of the right of NYSDEC to take further

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action without notice or demand as provided herein, nor in any event shall any modification or waiver of the provisions of this Guarantee be effective unless in writing, nor shall any such waiver be applicable, except in the specific instance for which given.

18. This guarantee is, and shall be deemed, a contract entered into under and pursuant to the laws of the State of New York, and shall be in all respects governed, construed, applied and enforced in accordance with the laws of said State; and no defense given or allowed by the laws of any other state or country shall be interposed in any action hereon unless such defense is also given or allowed by the laws of the State of New York.

19. I hereby certify that the wording of this Guarantee is identical to the wording specified in 6 NYCRR 373-2.8(j)(6)(i) as such regulations were constituted on the day first above written.

Effective date: \_\_\_\_\_

\_\_\_\_\_

Name of Guarantor

\_\_\_\_\_

Authorized Signature for Guarantor

\_\_\_\_\_

Name of person signing

\_\_\_\_\_

Address

\_\_\_\_\_

Title of person signing

STATE OF \_\_\_\_\_ :

: SS.:

COUNTY OF \_\_\_\_\_ :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that (s)he is \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the above instrument; that (s)he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that (s)he signed his/he name thereto by like order.

\_\_\_\_\_

Notary Public

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- (ii) A guarantee, as specified in section 373-2.8(h)(7) or 373-3.8(h)(7) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

**GUARANTEE FOR LIABILITY COVERAGE**

(Date)

(City and State)

Guarantee made this (date) by (name of guaranteeing entity), a business corporation organized under the laws of the State of (insert name of state of incorporation), (hereinafter referred to as “Guarantor”). This guarantee is made on behalf of (insert name of owner or operator) of (business address), which is (one of the following: “our subsidiary”; “a subsidiary of (name and address of common parent corporation), of which Guarantor is a subsidiary;” or “an entity with which Guarantor has a substantial business relationship, as defined in 6 NYCRR 373-2.8(b) or 373-3.8(b),”) to any and all third parties who have sustained or may sustain bodily injury or property damage caused by (sudden and/or non- sudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee; and

WHEREAS, the New York State Department of Environmental Conservation (hereinafter referred to as “NYSDEC”) is unwilling to issue a permit to, or otherwise authorize or approve the operation or continued operation by (insert name of owner or operator) of certain hazardous waste management facilities or facility referred to in paragraph 2 below (hereinafter referred to as “facility(ies)”), unless NYSDEC receives a guarantee of the undersigned covering the obligations and liabilities of (insert name of owner or operator) to any and all third parties who have sustained or may sustain bodily injury or property damage caused by (sudden and/or non-sudden) accidental occurrences arising from the operation of the facilities covered by this guarantee.

NOW, THEREFORE, in consideration of these premises and of other good and valuable consideration, and in order to induce NYSDEC now, and from time to time, in its discretion, to issue permits to (insert name of owner or operator) for the ownership or operation of the hazardous waste management facility(ies) or to allow or authorize (insert name of owner or operator) to continue to conduct the operation or ownership of the hazardous waste management facility(ies) or to allow or authorize (insert name of owner or operator) to continue to conduct the operation or ownership of the hazardous waste management facility(ies), the undersigned hereby guarantees, absolutely and unconditionally, to such third parties payment of all liabilities of (insert name of owner or operator) of whatever nature, whether now existing or hereinafter incurred, and whether absolute or contingent, caused by (sudden and/or non-sudden) accidental occurrences arising from the operation of the facilities covered by this guarantee.

Recitals

The Guarantor further states as follows:

1. Guarantor meets or exceeds the financial test criteria of New York State Environmental Conservation Law, article 27 (hereinafter referred to as “ECL article 27”) and 6 NYCRR Part 370 *et*

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*seq.* and agrees to comply with the reporting requirements for Guarantors as specified in 6 NYCRR Part 370 *et seq.*

2. (Owner or operator) owns or operates the following hazardous waste management facility(ies) covered by this guarantee: (List for each facility: EPA identification number, name and address). This guarantee satisfies NYSDEC third-party liability requirements for (insert “sudden” or “non-sudden” or “both sudden and non-sudden”) accidental occurrences in above-named owner or operator facilities for coverage in the amount of (insert dollar amount)for each occurrence and (insert dollar amount) annual aggregate.

3. For value received from (owner or operator) Guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by (sudden and/or non-sudden) accidental occurrences, arising from operations of the facility(ies) covered by this guarantee that in the event that (owner or operator) fails to satisfy a judgment ow award based on a determination of liability for bodily injury or property damage to third parties caused by (sudden and/or non-sudden) accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the Guarantor will satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which (insert owner or operator) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert owner or operator) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert owner or operator) under a worker’s compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of (insert owner or operator) arising from, and in the course of, employment by (insert owner or operator); or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert owner or operator). This exclusion applies:

(i) whether (insert owner or operator) may be liable as an employer or in any other capacity; and

(ii) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.



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(e) Property damage to:

- (1) any property owned, rented, or occupied by (insert owner or operator);
- (2) premises that are sold, given away or abandoned by (insert owner or operator) if the property damage arises out of any part of those premises;
- (3) property loaned to (insert owner or operator);
- (4) personal property in the care, custody or control of (insert owner or operator); and
- (5) that particular part of real property on which (insert owner or operator) or any contractors or subcontractors working directly on behalf of (insert owner or operator) are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this Guarantee, the Guarantor fails to meet the financial test criteria, Guarantor shall send within 90 days, by certified mail, return receipt requested, notice to the Commissioner and to (owner or operator) that the Guarantor intends to provide alternate liability coverage as specified in 6 NYCRR Part 370 *et seq.*, as applicable, in the name of (owner or operator). Within 120 days after the end of such fiscal year, the Guarantor shall establish such liability coverage unless (owner or operator) has done so.

6. The Guarantor agrees to notify the Commissioner, by certified mail, return receipt requested, of a voluntary or involuntary proceeding under title 11 (Bankruptcy), U.S. Code, naming Guarantor as Debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Commissioner, of a determination that Guarantor no longer meets the financial test criteria or that Guarantor is disallowed from continuing as a Guarantor, the Guarantor shall establish alternate liability coverage as specified in 6 NYCRR Part 370 *et seq.* in the name of (owner or operator), unless (owner or operator) has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by 6 NYCRR Part 370 *et seq.*, provided that such modification shall become effective only if the Commissioner does not disapprove the modification within 30 days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this Guarantee for so long as (owner or operator) must comply with the applicable requirements of 6 NYCRR Part 370 *et seq.* for the above-listed facility(ies) except as provided in paragraph 10 of this agreement.

10. (Insert the following language if the Guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator):

Guarantor may terminate this guarantee by sending notice, by certified mail, return receipt requested, to the commissioner and to (owner or operator), provided that this guarantee may not be terminated unless and until (the owner or operator) obtains, and the Commissioner approves alternate liability coverage complying with 6 NYCRR Part 370 *et seq.*

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(Insert the following language if the guarantor is a firm qualifying as a guarantor due to its “substantial business relationship” with the owner or operator):

Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, return receipt requested by the Commissioner and by (the owner or operator).

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. This guarantee is, and shall be deemed to be, a contract entered into under and pursuant to the laws of the State of New York and shall be in all respects governed, construed, applied and enforced in accordance with the laws of said State; and no defense given or allowed by the laws of any other state or country shall be interposed in any action hereon unless such defense is also given or allowed by the laws of the State of New York.

13. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the Guarantor with respect to the covered facilities.

14. This is a guarantee of payment and not of collection and the undersigned further waives any right to require that any action be brought against (insert name of owner or operator) or any other person, or to require that resort be had to any security or to any balance of any trust account, letter of credit, insurance policy, or surety bond, to the benefits of such third party.

15. Each reference herein to such third parties shall be deemed to include their respective successors and assigns, in whose favor the provisions of this Guarantee shall also ensure. Each reference herein to the undersigned shall be deemed to include the heirs, executors, administrators, legal representatives, successors and assigns of the undersigned, all of whom shall be bound by the provisions of this Guarantee.

16. If any party hereto shall be in partnership, the agreements and obligations on the part of the undersigned herein contained shall remain in force and applicable notwithstanding any changes in the individuals composing the partnership, and the term ‘*undersigned*’ shall include any altered or successive partnership, but the predecessor partnerships and their partners shall not thereby be released from any obligation or liability.

17. No delay on the part of such third parties in exercising any right hereunder, or failure to exercise the same, shall operate as a waiver of such right; no notice to or demand on the undersigned shall be deemed to be a waiver of the obligation of the undersigned or the right of such third parties to take further action without notice or demand as provided herein, nor in any event shall any modification or waiver of the provisions of this Guarantee be effective unless in writing, nor shall any such waiver be applicable, except in the specific instances for which given.

18. The Guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:

(a) Certification from the Principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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**Certification of Valid Claim**

The undersigned, as parties, (Insert Principal) and (insert name and address of third-party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of \$( ).

\_\_\_\_\_  
(Signatures)  
Principal

(Notary) Date

\_\_\_\_\_  
(Signatures)  
Claimant(s)

(Notary) Date

(b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

19. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered (insert "primary" or "excess") coverage.

20. I hereby certify that the wording of this guarantee is identical to the wording specified in 6 NYCRR 373-2.8(j)(6)(ii) as such regulations were constituted on the day shown immediately below.

Effective date: \_\_\_\_\_

\_\_\_\_\_  
(Name of Guarantor)  
(Authorized signature for Guarantor)  
(Name of person signing)  
(Address of person signing)  
(Title of person signing)

STATE OF :  
: SS.:  
COUNTY OF :

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On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came to me known, who, being by me duly sworn, did depose and say that (s)he is \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the above instrument; that (s)he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

- (7) A hazardous waste facility liability endorsement, as required in subdivision (h) of this section or section 373-3.8(h) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT**

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the Insured's obligation to demonstrate financial responsibility under 6 NYCRR Part 370 *et seq.* The coverage applies at (list EPA identification numbers, names and addresses for each facility) for (insert "sudden accidental occurrences," "non-sudden accidental occurrences" or "sudden and non-sudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for "sudden accidental occurrences," which are insured for "non-sudden accidental occurrences," and which are insured for both). The limits of liability are (insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability), exclusive of legal defense costs.\*

2. The insurance afforded with respect to such occurrences is subject to all the terms and conditions of the policy; provided, however, that any provision of the policy inconsistent with subsections (a) through (f) of this paragraph 2 are hereby amended to conform with such subsections (a) through (f):

(a) Bankruptcy or insolvency of the Insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with the right of reimbursement from the Insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated by virtue of the insured satisfying the financial test for liability coverage as established by the New York State Department of Environmental Conservation (hereinafter "NYSDEC") or by the Commissioner of NYSDEC (hereinafter referred to as the "Commissioner"), and as specified in 6 NYCRR Part 370 *et seq.*

**Footnote**

\*If the endorsement is for an excess insurance policy, insert the following sentence: "\$ each occurrence and \$ annual aggregate in excess of the underlying limits of \$ each occurrence and \$ annual aggregate."

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(c) Whenever requested by the Commissioner, the Insurer agrees to furnish to the Commissioner a signed duplicate original of the policy and all endorsements.

(d) Cancellation of this endorsement, whether by the Insurer or the Insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of sixty (60) days after a copy of such written notice is received by the Commissioner.

(e) Any other termination of this endorsement will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of thirty (30) days after a copy of such written notice is received by the Commissioner.

(f) This endorsement shall be attached to and form a part of Policy No. \_\_\_\_\_, issued by (name of Insurer) to (name of Insured) of (address) this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_. The effective date of the policy is the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

I hereby certify that the wording of this endorsement is identical to the wording specified in 6 NYCRR 373-2.8(j)(7), as such regulation was constituted on the date first above written, and that the Insurer is authorized by the Superintendent of the New York State Insurance Department to conduct the business of insurance within the State of New York or is eligible to provide insurance, where applicable, as an excess or surplus lines insurer within the State of New York.

\_\_\_\_\_  
(Signature of Authorized Representative of Insurer)  
  
(Type name)  
  
(Title), Authorized Representative of (Name of Insurer)  
  
(Address of Representative)

Date:

If (name of Insurer) issues this endorsement after the date that the policy takes effect, the (name of Insurer) must complete these spaces and the representative of (name of Insurer) must sign below.

Policy issued to (owner or operator of a hazardous waste management facility); Endorsement takes effect on (date); Policy No. (\_\_\_\_\_); Endorsement number: (\_\_\_\_\_)

\_\_\_\_\_  
(Signature of Authorized Representative of Insurer)

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(Type name)

(Title), Authorized Representative  
of (Name of Insurer)

(Address of Representative)

- (8) A certificate of liability insurance, as required by subdivision (h) of either this section or section 373-3.8 of this Part, must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information with the brackets deleted:

**HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE**

1. (Name of Insurer) (the “Insurer”), of (address of Insurer), hereby certifies that it has issued a policy of liability insurance (the “Policy”), covering bodily injury and property damage, to (name of Insured) (the “Insured”), of (address of Insured), in connection with the Insured’s obligation to demonstrate financial responsibility under 6 NYCRR Part 370 *et seq.* The coverage applies at (list EPA identification numbers, names and addresses for each facility) for (insert “sudden accidental occurrences,” “non-sudden accidental occurrences” or “sudden and non-sudden accidental occurrences”; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for “sudden accidental occurrences,” which are insured for “nonsudden accidental occurrences,” and which are insured for both). The limits of liability are (insert the dollar amount of “each occurrence” and “annual aggregate” limits of the Insurer’s liability), exclusive of legal defense costs.\* The coverage is provided under Policy number \_\_, issued on (date), and the expiration date of the policy is \_\_\_\_\_ (date).

2. The Insurer further certifies the following with respect to the insurance described in paragraph 1:

(a) Bankruptcy or insolvency of the Insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the Policy, with the right of reimbursement from the Insured for any payment made by the Insurer. This provision does not apply with respect to the amount of any deductible for which coverage is demonstrated by virtue of the Insured’s satisfying the financial test for liability coverage as established by the New York State Department of Environmental Conservation (hereinafter “NYSDEC”) or by the Commissioner of NYSDEC (hereinafter referred to as the “Commissioner”), and as specified in 6 NYCRR Part 370 *et seq.*

(c) Whenever requested by the Commissioner, the Insurer agrees to furnish to the Commissioner a signed duplicate original of the policy and all endorsements.

**Footnote**

\*If the certificate of liability insurance is for an excess insurance policy, insert the following sentence: “\$ each occurrence and \$ annual aggregate in excess of the underlying limits of \$ each occurrence and \$ annual aggregate.”

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(d) Cancellation of the insurance, whether by the Insurer or the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of sixty (60) days after a copy of such written notice is received by the Commissioner.

(e) Any other termination of this insurance will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of thirty (30) days after a copy of such written notice is received by the Commissioner.

I hereby certify that the wording of this instrument is identical to the wording specified in 6 NYCRR 373-2.8(j)(8), a such regulation was constituted on the date first above written, and that the Insurer is authorized by the Superintendent of the New York State Insurance Department to conduct the business of an Insurer or is eligible to provide insurance as an excess or surplus lines insurer in the State of New York.

---

(Signature of Authorized  
Representative of Insurer)

(Type name)

(Title), Authorized Representative  
of (Name of Insurer)

(Address of Representative)

Date:

- (9) A letter from the chief financial officer, as specified in paragraph (h)(6) of this section or section 373-3.8(h)(6) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter from Chief Financial Officer.

(Address to Commissioner of DEC.)

I am the chief financial officer of (firm's name and address). This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage (insert "and closure and/or post-closure care" if applicable) as specified in 6 NYCRR 373-2.8 and 373-3.8.

(Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility include its EPA identification number, name and address.)

The firm identified above is the owner or operator of the following facilities for which liability coverage for (insert "sudden" or "non-sudden" or "both sudden and non-sudden") accidental

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occurrences is being demonstrated through the financial test specified in 6 NYCRR 373-2.8 and 373-3.8: \_\_\_\_\_.

The firm identified above guarantees, through the guarantee specified in 6 NYCRR 373-2.8 and 373-3.8, liability coverage for (insert “sudden” or “non-sudden” or “both sudden and non-sudden”) accidental occurrences at the following facilities owned or operated by the following: \_\_\_\_\_. The firm identified above is (insert one or more):

(1) the direct or higher-tier parent corporation of the owner or operator;

(2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee (\$ \_\_\_\_\_); or

(3) engaged in the following substantial business relationship with the owner or operator \_\_\_\_\_, and receiving the following value in consideration of this guarantee (\$ \_\_\_\_\_).

(Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter).

For facilities not located in New York, this firm is demonstrating liability coverage for (insert “sudden” or “non-sudden” or “both sudden and non-sudden”) accidental occurrences at the following facilities through the use of a test equivalent or substantially equivalent to the test specified in Subpart H of 40 CFR parts 264 and 265 \_\_\_\_\_.

(If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following five paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write “None” in the space indicated. For each facility, include its EPA identification number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

1. The firm identified above owns or operates the following facilities for which financial assurance for closure or post-closure care or liability coverage is demonstrated through the financial test specified in 6 NYCRR 373-2.8 and 373-3.8. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: \_\_\_\_\_.

2. The firm identified above guarantees, through the guarantee specified in 6 NYCRR 373-2.8 and 373-3.8, the closure and post-closure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: \_\_\_\_\_.

3. For facilities not located in New York, this firm is demonstrating financial assurance for the closure or post-closure care or liability coverage of the following facilities through the use of a test equivalent or substantially equivalent to the test specified in Subpart H of 40 CFR parts 264 and 265. The current closure or post-closure cost estimates covered by such a test are shown for each facility: \_\_\_\_\_.



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4. The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to USEPA or New York or other states through the financial test or any other financial assurance mechanisms specified in Subpart H of 40 CFR parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: \_\_\_\_\_.

5. This firm is the owner or operator or guarantor of the following UIC facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144 (see 6 NYCRR 370.1(e)) and is assured through a financial test. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: \_\_\_\_\_.

This firm (insert “is required” or “is not required”) to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm’s independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

(Fill in part A if you are using the financial test to demonstrate coverage only for the liability requirements.)

**Part A. Liability Coverage for Accidental Occurrences.**

(Fill in Alternative I if the criteria of 6 NYCRR 373-2.8(h)(6)(i) or 373-3.8(h)(6)(i) are used. Fill in Alternative II if the criteria of 6 NYCRR 373-2.8(h)(6)(ii) or 373-3.8(h)(6)(ii) are used.)

**ALTERNATIVE I**

- |  |          |                         |
|--|----------|-------------------------|
| 1. Amount of annual aggregate liability coverage to be demonstrated            | \$ _____ |                         |
| *2. Current assets   | \$ _____ |                         |
| *3. Current liabilities  | \$ _____ |                         |
| 4. Net working capital (line 2 minus line 3)                                   | \$ _____ |                         |
| *5. Tangible net worth   | \$ _____ |                         |
| *6. If less than 90% of assets are located in the U.S., give total U.S. assets | \$ _____ |                         |
|  |          | Yes                  No |
| 7. Is line 5 at least \$10 million?  | _____    | _____                   |
| 8. Is line 4 at least 6 times line 1?  | _____    | _____                   |
| 9. Is line 5 at least 6 times line 1?  | _____    | _____                   |
| *10. Are at least 90% of firm’s assets located in the U.S.?                    | _____    | _____                   |

If not, complete line 11.

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11. Is line 6 at least 6 times line 1? \_\_\_\_\_

**ALTERNATIVE II**

\*1. Amount of annual aggregate liability coverage to be demonstrated \$ \_\_\_\_\_

2. Current bond rating of most recent issuance and name of rating service \$ \_\_\_\_\_

3. Date of issuance of bond \$ \_\_\_\_\_

4. Date of maturity of bond \$ \_\_\_\_\_

\*5. Tangible net worth \$ \_\_\_\_\_

\*6. Total assets in U.S. (required only if less than 90% of assets are located in the U.S.) \$ \_\_\_\_\_

Yes No

7. Is line 5 at least \$10 million? \_\_\_\_\_

8. Is line 5 at least 6 times line 1? \_\_\_\_\_

\*9. Are at least 90% of firm's assets located in the U.S.?  
If not, complete line 10. \_\_\_\_\_

10. Is line 6 at least 6 times line 1? \_\_\_\_\_

(Fill in part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.)

**Part B. Closure or Post-Closure Care and Liability Coverage.**

(Fill in Alternative I if the criteria of 6 NYCRR 373-2.8(d)(5)(i)(‘a’) or (f)(5)(i)(‘a’) and subparagraph (h)(6)(i) are used, or if the criteria of 6 NYCRR 373-3.8(d)(5)(i)(‘a’) or (f)(5)(i)(‘a’) and subparagraph (h)(6)(i) are used. Fill in Alternative II if the criteria of 6 NYCRR 373-2.8(d)(5)(i)(‘b’) or (f)(5)(i)(‘b’) and subparagraph (h)(6)(ii) are used, or if the criteria of 6 NYCRR 373-3.8(d)(5)(i)(‘b’) or (f)(5)(i)(‘b’) and subparagraph (h)(6)(ii) are used.)

**ALTERNATIVE I**

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) \$ \_\_\_\_\_

2. Amount of annual aggregate liability coverage to be demonstrated \$ \_\_\_\_\_

3. Sum of lines 1 and 2 \$ \_\_\_\_\_

\*4. Total liabilities (if any portion of your closure or post-closure cost estimate is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6) \$ \_\_\_\_\_

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- \*5. Tangible net worth \$ \_\_\_\_\_
  - \*6. Net worth \$ \_\_\_\_\_
  - \*7. Current assets \$ \_\_\_\_\_
  - \*8. Current liabilities \$ \_\_\_\_\_
  - 9. Net working capital (line 7 minus line 8) \$ \_\_\_\_\_
  - \*10. The sum of net income plus depreciation, depletion and amortization \$ \_\_\_\_\_
  - \*11. Total assets in U.S. (required only if less than  
90% of assets are located in the U.S.) \$ \_\_\_\_\_
- |   | Yes   | No    |
|---|-------|-------|
| 12. Is line 5 at least \$10 million?  | _____ | _____ |
| 13. Is line 5 at least 6 times line 3?  | _____ | _____ |
| 14. Is line 9 at least 6 times line 3?  | _____ | _____ |
| *15. Are at least 90% of assets located in the U.S.?<br>If not, complete line 16. | _____ | _____ |
| 16. Is line 11 at least 6 times line 3?   | _____ | _____ |
| 17. Is line 4 divided by line 6 less than 2.0                                     | _____ | _____ |
| 18. Is line 10 divided by line 4 greater than 0.1?                                | _____ | _____ |
| 19. Is line 7 divided by line 8 greater than 1.5?                                 | _____ | _____ |

**ALTERNATIVE II**

- 1. Sum or current closure and post-closure cost estimates  
(total of all cost estimates listed above) \$ \_\_\_\_\_
- 2. Amount of annual aggregate liability coverage to be demonstrated \$ \_\_\_\_\_
- 3. Sum of lines 1 and 2 \$ \_\_\_\_\_
- 4. Current bond rating of most recent issuance and name of rating service \$ \_\_\_\_\_
- 5. Date of issuance of bond \$ \_\_\_\_\_
- 6. Date of maturity of bond \$ \_\_\_\_\_
- \*7. Tangible net worth (if any portion of the closure or post-closure  
cost estimates is included in "total liabilities" on your financial statements,  
you may add that portion to this line) \$ \_\_\_\_\_

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\*8. Total assets in the U.S. (required only if less than 90% of assets are located in the U.S.)

\$ \_\_\_\_\_

Yes No

9. Is line 7 at least \$10 million?

\_\_\_\_\_

10. Is line 7 at least 6 times line 3?

\_\_\_\_\_

\*11. Are at least 90% of assets located in the U.S.?

If not, complete line 12.

\_\_\_\_\_

12. Is line 8 at least 6 times line 3?

\_\_\_\_\_

I hereby certify that the wording of this letter is identical to the wording specified in 6 NYCRR 373-2.8(j)(9), as such regulations were constituted on the date shown immediately below.

\_\_\_\_\_  
(Signature)

(Name)

(Title)

(Date)

- (10) A letter of credit, as specified in paragraph (h)(8) of this section or section 373-3.8(h) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit

Name and Address of Issuing Institution

Commissioner of NYSDEC

625 Broadway

Albany, NY 12233-1011

RE: Letter of Credit No. \_\_\_\_\_

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. \_\_\_\_\_ in the favor of (“any and all third-party liability claimants,” or insert name of trustee of the standby trust fund), at the request and for the account of (owner’s or operator’s name and address) for third-party liability awards or settlements up to (in words) U.S. dollars (\$ \_\_\_\_\_) per occurrence and the annual aggregate amount of (in words) U.S. dollars (\$ \_\_\_\_\_) for sudden accidental occurrences, exclusive of legal defense costs, and/or for third-party liability awards or settlements up to the amount of (in words) U.S. dollars (\$ \_\_\_\_\_) per occurrence and the annual aggregate amount of (in words) U.S. dollars (\$ \_\_\_\_\_) for

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non-sudden accidental occurrences, exclusive of legal defense costs, available upon presentation of a sight draft bearing reference to this Letter of Credit No. \_\_\_\_\_ and (insert the following language if the letter of credit is being used without a standby trust fund): “(1) a signed certificate reading as follows:

**Certification of Valid Claim**

The undersigned, as parties, (insert Principal) and (insert name and address of third- party claimant(s)), hereby certify that the claim of bodily injury (and/or) property damage caused by a (sudden or non-sudden) accidental occurrence arising from operations of (Principal’s) hazardous waste treatment, storage, or disposal facility should be paid in the amount of (\$ ). We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which (insert Principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Principal) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert Principal) under a workers’ compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of (insert Principal) arising from, and in the course of, employment by (insert Principal); or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Principal).

This exclusion applies:

(i) whether (insert Principal) may be liable as an employer or in any other capacity; and

(ii) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by (insert principal);

(2) Premises that are sold, given away or abandoned by (insert Principal) if the property damage arises out of any part of those premises;

(3) Property loaned to (insert Principal);

(4) Personal property in the care, custody or control of (insert Principal);

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(5) That particular part of real property on which (insert Principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert Principal) are performing operations, if the property damage arises out of these operations.

---

(Signature) Grantor

---

(Signature) Claimant(s)

or (2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor’s facility or group of facilities.”

This letter of credit is effective as of (date) and shall expire on (date at least one year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the Commissioner of NYS DEC and (owner’s or operator’s name) by certified mail, return receipt requested, that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

(Insert the following language if a standby trust fund is not being used: “In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered (insert “primary” or “excess” ) coverage.”)

We certify that the wording of this letter of credit is identical to the wording specified in 6 NYCRR 373-2.8(j)(10) as such regulations were constituted on the date shown immediately below.

This credit is subject to (insert “the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce” or “the Uniform Commercial Code”).

---

(Signature(s))

---

(Name(s) and Title(s) of official(s)  
of issuing institution)

---

(Date)

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- (11) A surety bond, as specified in paragraph (h)(9) of this section or section 373-3.8(h)(9) of this Part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**PAYMENT BOND**

Surety Bond No. (insert number)

Parties (insert name and address of owner or operator), Principal, incorporated in (insert State of incorporation) of (insert city and State of principal place of business) and (insert name and address of surety company(ies)), Surety Company(ies), of (insert surety(ies) place of business). EPA identification Number, name, and address for each facility guaranteed by this bond: \_\_\_\_\_

	Sudden accidental occurrences	Nonsudden accidental occurrences
Penal Sum Per Occurrence	(insert amount)	(insert amount)
Annual Aggregate	(insert amount)	(insert amount)

Purpose: This is an agreement between the Surety(ies) and the Principal under which the Surety(ies), its (their) successors and assignees, agree to be responsible for the payment of claims against the Principal for bodily injury and/or property damage to third parties caused by (“sudden” and/or “non-sudden” ) accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein, exclusive of legal defense costs; subject to the governing provisions and the following conditions.

Governing Provisions:

(1) Article 27 of the Environmental Conservation Law.

(2) Rules and regulations of the New York State Department of Environmental Conservation (DEC), particularly 6 NYCRR (“373-2.8(h)” or “373-3.8(h)”) (if applicable).

Conditions:

(1) The Principal is subject to the applicable governing provisions that require the Principal to have and maintain liability coverage for bodily injury and property damage to third parties caused by (“sudden” and/or “non-sudden”) accidental occurrences arising from operations of the facility or group of facilities. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert principal) under a worker’s compensation, disability benefits, or unemployment compensation law or similar law.

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(c) Bodily injury to:

(i) An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or

(ii) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal). This exclusion applies:

(‘a’) whether (insert principal) may be liable as an employer or in any other capacity; and

(‘b’) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (i) and (ii).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(i) any property owned, rented, or occupied by (insert principal);

(ii) premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;

(iii) property loaned to (insert principal);

(iv) personal property in the care, custody or control of (insert principal);

(v) that particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(2) This bond assures that the Principal will satisfy valid third party liability claims, as described in condition (1).

(3) If the principal fails to satisfy a valid third party liability claim, as described above, the Surety(ies) become liable on this bond obligation.

(4) The Surety(ies) shall satisfy a third party liability claim only upon the receipt of one of the following documents:

(a) Certification from the Principal and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

#### Certification of Valid Claim

The undersigned, as parties, (insert name of Principal) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or non-sudden) accidental occurrence arising from operating (Principal’s) hazardous waste



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treatment, storage, or disposal facility should be paid in the amount of \$ (\_\_\_\_\_).

\_\_\_\_\_  
(Signature)  
Principal

(Notary) Date

\_\_\_\_\_  
(Signature(s))  
Claimant(s)

(Notary) Date

or (b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or non-sudden accidental occurrences arising from the operation of the Principal’s facility or group of facilities.

(5) In the event of combination of this bond with another mechanism for liability coverage, this bond will be considered (insert “primary” or “excess”) coverage.

(6) The liability of the Surety(ies) shall not be discharged by any payment or succession of payments or payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum, provided that the Surety(ies) furnish(es) notice to the Commissioner forthwith of all claims and payments made by the Surety(ies) under this bond.

(7) The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail, return receipt requested, to the Principal and the Commissioner of NYS DEC provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal and the Commissioner, as evidenced by the return receipts.

(8) The Principal may terminate this bond by sending written notice, by certified mail, return receipt requested, to the Surety(ies) and to the Commissioner of NYSDEC.

(9) The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

(10) This bond is effective from (insert date) (12:01 A.M., standard time, at the address of the Principal as stated herein) and shall continue in force until terminated as described above.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

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The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 6 NYCRR 373-2.8(j)(11), as such regulations were constituted on the date this bond was executed.

**PRINCIPAL**

\_\_\_\_\_

(Signature(s))

(Name(s))

(Title(s))

(Corporate Seal)

**CORPORATE SURETY(IES)**

(Name and Address)

State of Incorporation:

Liability Limit: \$

\_\_\_\_\_

(Signature(s))

(Name(s) and title(s))

(Corporate Seal)

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above).

Bond premium: \$

- (12) A trust agreement, as specified in paragraph (h)(10) of this section or section 373-3.8(h)(10) of this part, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**TRUST AGREEMENT**

TRUST AGREEMENT, the “Agreement,” entered into as of (date) by and between (name of the owner or operator) a (name of State) (insert “corporation,” “partnership,” “association,” or “proprietorship”), the “Grantor,” and (name of corporate trustee), (insert, “incorporated in the State of” or “a national bank”), the “Trustee.”

WHEREAS, the New York State Department of Environmental Conservation hereinafter referred to as (“NYSDEC”) has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must

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demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

WHEREAS, the Grantor has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the trustee is willing to act as trustee.

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term “Grantor” means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term “Trustee” means the trustee who enters into this Agreement and any successor Trustee.

(c) The term “Commissioner” means the Commissioner of the New York State Department of Environmental Conservation, or the commissioner’s duly appointed designee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A (on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement).

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the “Fund,” for the benefit of any and all third parties injured or damaged by (sudden and/or non-sudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of ( \$ ) (up to \$1 million) per occurrence and ( \$ ) (up to \$2 million) annual aggregate for sudden accidental occurrences, exclusive of legal defense costs; and ( \$ ) (up to \$4.5 million for each separate facility in New York) per occurrence and ( \$ ) (up to \$9 million for each separate facility in New York) annual aggregate for non-sudden accidental occurrences, exclusive of legal defense costs, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which (insert Grantor) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Grantor) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert Grantor) under a workers’ compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

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(1) An employee of (insert Grantor) arising from, and in the course of employment by (insert Grantor); or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Grantor).

This exclusion applies:

(i) whether (insert Grantor) may be liable as an employer or in any other capacity; and

(ii) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented or occupied by (insert Grantor);

(2) Premises that are sold, given away or abandoned by (insert Grantor) if the property damage arises out of any part of those premises;

(3) Property loaned to (insert Grantor);

(4) Personal property in the care, custody or control of (insert Grantor);

(5) That particular part of real property on which (insert Grantor) or any contractors or subcontractors working directly or indirectly on behalf of (insert Grantor) are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the Fund shall be considered (insert “primary” or “excess”) coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by NYSDEC.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be

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replaced with the relevant information and the brackets deleted:

**Certification of Valid Claim**

The undersigned, as parties, (insert Grantor) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating {Grantor’s} hazardous waste treatment, storage, or disposal facility should be paid in the amount of (\$ ).

\_\_\_\_\_  
(Signatures)

Grantor

(Signatures)

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or non-sudden accidental occurrences arising from the operation of the Grantor’s facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal or a State government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common

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commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company, registered under the Investment Company Act of 1940, 15 U.S.C. 81-a-1 *et seq.*, including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all time show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual valuations. The Trustee shall annually, at least 30 days prior to the anniversary

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date of establishment of the Fund, furnish to the Grantor and to the Commissioner of NYSDEC a statement conforming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Commissioner of NYSDEC shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor, the Commissioner and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Commissioner to the Trustee shall be in writing, signed by the Commissioner or the Commissioner's designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or NYSDEC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests and instructions from the Grantor and/or NYSDEC, except as provided for herein.

Section 15. Notice of nonpayment. If a payment for a bodily injury or property damage is made under section 4 of this trust, the Trustee shall notify the Grantor of such payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the

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establishment of the Fund following such notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equaling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within 10 working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Commissioner.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Commissioner, or by the Trustee and the Commissioner if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Commissioner, or by the Trustee and the Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Commissioner will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in sections 373-2.8 and 373-3.8 of this Part.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 6 NYCRR 373-2.8(j)(12) as such regulations were constituted on the date first above written.

---

(Signature of Grantor)

(Title)



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Attest:

(Seal)

\_\_\_\_\_

(Signature of Trustee)

(Title)

Attest:

(Seal)

(ACKNOWLEDGEMENT BY TRUSTEE, IF A BANK)

STATE OF \_\_\_\_\_ :  
: SS.:

COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_, \_\_\_, before me personally came \_\_\_\_\_ to me known who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the banking institution described in and which executed the within Trust Fund Agreement; and that (s)he signed his/her name thereto by authority of such banking institution.

\_\_\_\_\_

Notary Public

(ACKNOWLEDGEMENT BY TRUSTEE, IF A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:

COUNTY OF \_\_\_\_\_ :

On this \_\_\_ day of \_\_\_, \_\_\_, before me personally came \_\_\_\_\_ to me known who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Agreement, that (s)he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_

Notary Public

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(ACKNOWLEDGEMENT BY GRANTOR/OWNER OPERATOR, UNLESS IT BE A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_ to me known and known to me to be the person(s) described in and who executed the within Trust Fund Agreement; and acknowledged that (s)he executed the same.

\_\_\_\_\_  
Notary Public

(ACKNOWLEDGEMENT BY GRANTOR/OWNER OPERATOR, IF A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_ to me known who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Agreement; that (s)he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

- (13) A standby trust agreement, as specified in section 373-2.8(h) or 373-3.8(h) of this Subpart, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**STANDBY TRUST AGREEMENT**

Trust Agreement, the "Agreement" entered into as of (date) by and between (name of the owner or operator) a (name of a State) (insert "corporation," "partnership," "association," or "proprietorship"), the "Grantor," and (name of corporate trustee), (insert "incorporated in the State of \_\_\_\_\_ " or "a national bank"), the "Trustee."

WHEREAS, the New York State Department of Environmental Conservation, an agency of the New York State government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must

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demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden and/or non-sudden accidental occurrences arising from operations of the facility or group of facilities.

WHEREAS, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. *Definitions.* As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

(c) The term "Commissioner" means the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's duly appointed designee.

Section 2. *Identification of Facilities.* This agreement pertains to the facilities identified on attached schedule A (on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement).

Section 3. *Establishment of Fund.* The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by (sudden and/or non-sudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of \_ (up to \$1 million) per occurrence and \_\_ (up to \$2 million) annual aggregate for sudden accidental occurrences arising, exclusive of legal defense costs, and \_\_ (up to \$4.5 million for each separate facility in New York) per occurrence and \_ (up to \$9 million for each separate facility in New York) annual aggregate for nonsudden accidental occurrences, exclusive of legal defense costs, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which (insert Grantor) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Grantor) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert Grantor) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

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(1) An employee of (insert Grantor) arising from, and in the course of, employment by (insert Grantor); or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Grantor).

This exclusion applies:

(i) whether (insert Grantor) may be liable as an employer or in any other capacity; and

(ii) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by (insert Grantor);

(2) Premises that are sold, given away or abandoned by (insert Grantor) if the property damage arises out of any part of those premises;

(3) Property loaned by (insert Grantor);

(4) Personal property in the care, custody or control of (insert Grantor);

(5) That particular part of real property on which (insert Grantor) or any contractors or subcontractors working directly or indirectly on behalf of (insert Grantor) are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered (insert "primary" or "excess") coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the New York State Department of Environmental Conservation.

Section 4. *'Payment for Bodily Injury or Property Damage.'* The Trustee shall satisfy a third-party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be

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replaced with the relevant information and the brackets deleted:

**Certification of Valid Claim**

The undersigned, as parties (insert Grantor) and (insert name and address of third- party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Grantor's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of \$( ).

---

(Signature)

Grantor

---

(Signatures)

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or non-sudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. *'Payments Comprising the Fund.'* Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of 6 NYCRR 373-2.8(j)(10) and section 4 of this Agreement.

Section 6. *'Trustee Management.'* The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a) (see section 370.1(e) of this Title), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

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Section 7. '*Commingling and Investment.*' The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 *et seq.* (see 370.1(e) of this Title), including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. '*Express Powers of Trustee.*' Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity of expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name, or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. '*Taxes and Expenses.*' All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the

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Trustee shall be paid from the Fund.

Section 10. *'Advice of Counsel.'* The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. *'Trustee Compensation.'* The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. *'Successor Trustee.'* The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Commissioner and the present Trustee by certified mail, return receipt requested, 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. *'Instructions to the Trustee.'* All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the Attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Commissioner hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Commissioner, except as provided for herein.

Section 14. *'Amendment of Agreement.'* This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Commissioner, or by the Trustee and the Commissioner if the Grantor ceases to exist.

Section 15. *'Irrevocability and Termination.'* Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Commissioner, or by the Trustee and the Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Commissioner will agree to termination of the Trust when the owner or operator substitutes and the Commissioner approves alternative financial assurance as specified in section 373-2.8 or 373-3.8 of this part.

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Section 16. *'Immunity and Indemnification.'* The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and the Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. *'Choice of Law.'* This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 18. *'Interpretation.'* As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 6 NYCRR 373-2.8(j)(13) as such regulations were constituted on the date first above written.

\_\_\_\_\_

(Signature of Grantor)

(Title)

Attest:

(Title)

(Seal)

\_\_\_\_\_

(Signature of Trustee)

Attest:

(Title)

(Seal)

The following are examples of the certification of acknowledgement which must accompany the trust agreement for a standby trust fund as specified in 6 NYCRR 373-2.8(h)(8) or 373-3.8(h)(8) of this part.

(ACKNOWLEDGEMENT BY TRUSTEE, IF A BANK)

STATE OF \_\_\_\_\_ :



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: SS.:

COUNTY OF :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_, to me known who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the banking institution described in and which executed the within Trust Fund Agreement; and that (s)he signed his/her name thereto by authority of such banking institution.

\_\_\_\_\_  
Notary Public

**(ACKNOWLEDGEMENT BY TRUSTEE, IF A CORPORATION)**

STATE OF :

: SS.:

COUNTY OF :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_, to me known who, by me duly sworn, did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Fund Agreement, that (s)he knows the seal of said corporation; that it was so affixed by order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by authority of such banking institution.

\_\_\_\_\_  
Notary Public

**(ACKNOWLEDGEMENT BY GRANTOR/OWNER OPERATOR, UNLESS IT BE A CORPORATION)**

STATE OF :

: SS.:

COUNTY OF :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_ to me known and known by me to be the person(s) described in and who executed the within Trust Fund Agreement; and acknowledged that (s)he executed the same.

\_\_\_\_\_  
Notary Public

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(ACKNOWLEDGEMENT BY GRANTOR/OWNER OPERATOR, IF A CORPORATION)

STATE OF \_\_\_\_\_ :  
: SS.:  
COUNTY OF \_\_\_\_\_ :

On this \_\_\_\_ day of \_\_\_\_, \_\_\_\_, before me personally came \_\_\_\_\_ to me known who, by me duly sworn did depose and say that (s)he resides in \_\_\_\_\_; that (s)he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the within Trust Fund Agreement; that (s)he knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that (s)he signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

**Section 373-2.9 Use and management of containers.**

**(a) Applicability.**

The regulations in this section apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as section 373-2.1(a) of this Subpart provides otherwise.

*Note:* Under sections 371.1(h) and 371.4(d)(3) of this Title, if a hazardous waste is emptied from a container, the residue remaining in the container is not considered hazardous waste if the container is “empty” as defined in section 371.1(h). In that event, management of the container is exempt from the requirements of this section.

**(b) Condition of containers.**

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must 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 Subpart.

**(c) Compatibility of waste with containers.**

The owner or operator must use a container made of or lined with materials which will 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.**

- (1) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.
- (2) A container holding hazardous waste must not be opened, handled or stored in a manner which may

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rupture the container or cause it to leak.

- (3) Containers holding hazardous waste must be marked with the words "Hazardous Waste" and with other words identifying their contents.

**Note:** The use of containers in transportation is governed by U.S. Department of Transportation regulations, including those set forth in 49 CFR 173.28 (see 6 NYCRR 370.1(e)).

#### (e) Inspections.

At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

**Note:** See section 373-2.2(g)(3) of this Subpart and subdivision (b) of this section for remedial action required if deterioration or leaks are detected.

#### (f) Containment.

- (1) Container storage areas, other than those described in paragraph (2) of this subdivision, must have a containment system that is designed and operated as follows:
  - (i) A base must underlie the containers, which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills and accumulated precipitation until the collected material is detected and removed.
  - (ii) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquid resulting from leaks, spills or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.
  - (iii) The containment system must have sufficient capacity to contain 10 percent of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination.
  - (iv) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in subparagraph (iii) of this paragraph to contain any run-on which might enter the system.
  - (v) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

**Note:** If the collected material is a hazardous waste under Part 371 of this Title, it must be managed as a hazardous waste in accordance with all applicable requirements of Parts 372 and 373. If the collected material is discharged through a point source to waters of New York State, it is subject to the requirements of title 17 of article 17 of the ECL.

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- (2) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by paragraph (1) of this subdivision, except as provided by paragraph (3) of this subdivision or provided that:
  - (i) the storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or
  - (ii) the containers are elevated or are otherwise protected from contact with accumulated liquid.
- (3) Storage areas that store containers holding the wastes listed in this paragraph that do not contain free liquids must have a containment system defined by paragraph (1) of this subdivision: F020, F021, F022, F023, F026 and F027.

#### (g) **Special requirements for ignitable or reactive waste.**

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

**Note:** See section 373-2.2(i)(1) of this Subpart for additional requirements.

#### (h) **Special requirements for incompatible wastes.**

- (1) Incompatible wastes, or incompatible wastes and materials (see Appendix 29, *infra*, for examples), must not be placed in the same container, unless section 373-2.2(i)(2) of this Subpart is complied with.
- (2) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

**Note:** As required by section 373-2.2(e) of this Subpart, the waste analysis plan must include analyses needed to comply with this subdivision. Also, section 373-2.2(i)(3) of this Subpart requires waste analyses, trial tests or other documentation to assure compliance with paragraph (i)(2) of such section. As required by section 373-2.5(c) of this Subpart, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

- (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 must be separated from other materials or protected from them by means of a dike, berm, wall or other device.

**Comment:** The purpose of this section is to prevent fires, explosions, gaseous emission, leaching or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.

#### (i) **Closure.**

At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or

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hazardous waste residues must be decontaminated or removed.

**Note:** At closure, as throughout the operation period, unless the owner or operator can demonstrate, in accordance with 6 NYCRR 371.1(d)(4), that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 372 and 373 of this Title.

#### **(j) Air emission standards.**

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of sections 373-2.27, 373-2.28 and 373-2.29 of this Subpart.

### **Section 373-2.10 Tank systems.**

#### **(a) Applicability.**

The requirements of this section apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in paragraphs (1), (2) and (3) of this subdivision or section 373-2.1(a) of this Subpart.

- (1) Tank systems that are used to store or treat hazardous waste which contain no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in subdivision (d) of this section. To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, as incorporated by reference in section 370.1(e) of this Title.
- (2) Tank systems, including sumps, as defined in section 370.2(b) of this Title, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements of paragraph (d)(1) of this section.
- (3) Tanks, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in section 370.2(b) of this Title and regulated under section 373-2.23 of this Part, must meet the requirements of this section.

#### **(b) Assessment of existing tank system's integrity.**

- (1) For each existing tank system that does not have secondary containment meeting the requirements of subdivision (d) of this section, the owner or operator must determine that the tank system that does not have secondary containment meeting the requirements of subdivision (d) of this section, is not leaking or is unfit for use. Except as provided in paragraph (3) of this subdivision, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified, professional engineer registered in New York that attests to the tank system's integrity by December 25, 1989. The certification must be consistent with the applicable provisions of section 373-1.4(a)(5)(iv) of this Part.

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- (2) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the wastes to be stored or treated, to ensure that it will not collapse, rupture or fail. At a minimum, this assessment must consider the following:
- (i) design standards, if available, according to which the tank and ancillary equipment were constructed;
  - (ii) hazardous characteristics of the wastes that have been and will be handled;
  - (iii) existing corrosion protection measures;
  - (iv) documented age of the tank system, if available (otherwise, an estimate of the age); and
  - (v) results of a leak test, internal inspection, or other tank integrity examination such that:
    - ('a') for nonenterable underground tanks, the assessment must include 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; and
    - ('b') for other than nonenterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other tank integrity examination, that is certified by an independent, qualified, professional engineer registered in New York, that addresses cracks, leaks, corrosion and erosion. The certification must be consistent with the applicable provisions of section 373-1.4(a)(5)(iv) of this Part.

**Note:** The practices described in the American Petroleum Institute (API) Publication, *'Guide for Inspection of Refinery Equipment,'* chapter XIII, "atmospheric and low-pressure storage tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting an integrity examination.

- (3) Tank systems that store or treat materials that become hazardous wastes after December 25, 1988, must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.
- (4) If, as a result of the assessment conducted in accordance with paragraph (1) of this subdivision, a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of subdivision (g) of this section.

#### (c) **Design and installation of new tank systems or components.**

- (1) Owners or operators of new tank systems or components must obtain and submit to the commissioner at time of submittal of the Part 373 permit application, a written assessment, reviewed and certified by an independent, qualified, professional engineer registered in New York attesting that the tank system has sufficient structural integrity and is acceptable for storing and treating of hazardous waste. The certification must be consistent with the applicable provisions of section 373-1.4(a)(5)(iv) of this Part. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that

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the tank system has sufficient structural strength, compatibility with the wastes to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture or fail. This assessment, which will be used by the commissioner to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

- (i) design standards according to which tanks and/or the ancillary equipment are constructed;
- (ii) hazardous characteristics of the wastes to be handled;
- (iii) for new tank systems or components in which the external shell of a metal tank or any other external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:
  - ('a') factors affecting the potential for corrosion, including but not limited to:
    - ('1') soil moisture content;
    - ('2') soil pH;
    - ('3') soil sulfides level;
    - ('4') soil resistivity;
    - ('5') structure to soil potential;
    - ('6') influence of nearby underground metal structures (e.g., piping);
    - ('7') existence of stray electric current; and
    - ('8') existing corrosion protection measures (e.g., coating, cathodic protection); and
  - ('b') the type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:
    - ('1') corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;
    - ('2') corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes);
    - ('3') electrical isolation devices such as insulating joints, flanges, etc.;

**Note:** The practices described in the National Association of Corrosion Engineers (NACE) standard, “recommended practice (RP-02-85) control of external corrosion on metallic buried, partially buried, or submerged liquid storage systems,” and the American Petroleum Institute (API) publication 1632, ‘*Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems,*’ may be used, where applicable, as guidelines in providing corrosion protection for tank systems.

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- (iv) 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;
- (v) design considerations to ensure that:
  - ('a') tank foundations will maintain the load of a full tank;
  - ('b') tank systems will be anchored to prevent flotation or dislodgement where the tank system is placed in a saturated zone or is located within a seismic fault zone; and
  - ('c') tank systems will withstand the effects of frost heave.
- (2) The owner or operator of a new tank system must ensure that proper handling procedures are followed to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified, installation inspector or an independent, qualified, professional engineer registered in New York, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system 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/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.
- (3) New tank systems or components that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.
- (4) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system must be performed prior to the tank system being covered, enclosed or placed into use.
- (5) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

**Note:** The piping system installation procedures described in American Petroleum Institute (API) publication 1615 (November 1979), *Installation of Underground Petroleum Storage Systems,* or ANSI standard B31.3, "petroleum refinery piping," and ANSI standard B31.4, "liquid petroleum



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transportation piping system,” may be used, where applicable, as guidelines for proper installation of piping systems.

- (6) The owner or operator must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under subparagraph (1)(iii) of this subdivision, or other corrosion protection if the commissioner believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field-fabricated must be supervised by an independent corrosion expert to ensure proper installation.
- (7) The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of paragraphs (2)-(6) of this subdivision that attest that the tank system was properly designed and installed and that repairs, pursuant to paragraphs (2) and (4) of this subdivision were performed. These written statements must also include the certification statement as required in section 373-1.4(a)(5)(iv) of this Part.

#### **(d) Containment and detection of releases.**

- (1) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this subdivision must be provided (except as provided in paragraphs (6) and (7) of this subdivision):
  - (i) for all new tank systems or components, prior to their being put into service and for existing tank systems;
  - (ii) for tank systems that store or treat materials that become hazardous wastes, within two years of the hazardous waste listing.
- (2) Secondary containment systems must be:
  - (i) 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; and
  - (ii) capable of detecting and collecting releases and accumulated liquids until the collected material is removed.
- (3) To meet the requirements of paragraph (2) of this subdivision, secondary containment systems must be at a minimum:
  - (i) constructed of or lined with materials that are compatible with the wastes to be placed in the tank system and must 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);

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- (ii) placed on a foundation or base capable of providing support to the secondary containment system, providing resistance to pressure gradients above and below the system, and preventing failure due to settlement, compression, or uplift;
- (iii) 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 commissioner that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and
- (iv) sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the commissioner that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

**Note:** If the collected material is a hazardous waste under Part 371 of this Title, it is subject to management as a hazardous waste in accordance with all applicable requirements of Parts 370 through 373 of this Title. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of Parts 701, 702 and 750 of this Title. If discharged to a publicly owned treatment works (POTW), it is subject to the requirements of section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302.

- (4) Secondary containment for tanks must include one or more of the following devices:
  - (i) a liner (external to the tank);
  - (ii) a vault;
  - (iii) a double-walled tank; or
  - (iv) an equivalent device as approved by the department.
- (5) In addition to the requirements of paragraphs (2)-(4) of this subdivision, secondary containment systems must satisfy the following requirements:
  - (i) external liner systems must be:
    - ('a') designed or operated to contain 100 percent of the capacity of the largest tank or the volume of all interconnected tanks, whichever is greater, within its boundary;
    - ('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

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contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

- (c) free of cracks or gaps;
  - (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 (i.e., capable of preventing lateral as well as vertical migration of the waste. For onground and inground tanks, the external liner system must also encompass the bottom of the tank);
  - (e) external concrete liners must be constructed with chemical-resistant water stops in place at all joints (if any); and
  - (f) external concrete liners must be provided with an impermeable coating that is compatible with the stored waste and that will prevent migration of waste into the concrete.
- (ii) vault systems must be:
- (a) designed or operated to contain 100 percent of the capacity of the largest tank or the volume of all interconnected tanks, whichever is greater, within its boundary;
  - (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. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;
  - (c) constructed with chemical-resistant water stops in place at all joints (if any);
  - (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 concrete;
  - (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:
    - (1) meets the definition of ignitable waste under section 371.3(b) of this Title; or
    - (2) meets the definition of reactive waste under section 371.3(d) of this Title and may form an ignitable or explosive vapor; and
  - (f) provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure;
- (iii) double-walled tanks must be:
- (a) designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell;

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- (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 commissioner, and the commissioner concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

*Note:* The provisions outlined in the steel tank institute's (STI) '*standard for dual wall underground steel storage tanks*' may be used as guidelines for aspects of the design of underground steel double-walled tanks.

- (6) Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of paragraphs (2) and (3) of this subdivision except for:
  - (i) aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;
  - (ii) welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;
  - (iii) sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and
  - (iv) pressurized aboveground piping systems with automatic shutoff devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure activated shutoff devices) that are visually inspected for leaks on a daily basis.
- (7) The owner or operator may obtain a variance from the requirements of this subdivision if the commissioner finds as a result of a demonstration by the owner or operator, that alternative design and operating practices together with location characteristics will prevent the migration of any hazardous waste or hazardous constituents into the ground water or surface water at least as effectively as secondary containment during the active life of the tank system; or if the commissioner finds that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with subparagraph (ii) of this paragraph, be exempted from the secondary containment requirements of this subdivision.
  - (i) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the commissioner will consider:
    - (a) the nature and quantity of the wastes;
    - (b) the proposed alternate design and operation;
    - (c) the hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water; and

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- (d) 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.
- (ii) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the commissioner will consider:
  - (a) the potential adverse effects on ground water, surface water, and land quality taking into account:
    - (1) the physical and chemical characteristics of the waste in the tank system, including its potential for migration;
    - (2) the hydrogeological characteristics of the facility and surrounding land;
    - (3) the potential for health risks caused by human exposure to waste constituents;
    - (4) the potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
    - (5) the persistence and permanence of the potential adverse effects;
  - (b) the potential adverse effects of a release on ground water quality, taking into account:
    - (1) the quantity and quality of ground water and the direction of ground water flow;
    - (2) the proximity and withdrawal rates of ground water users;
    - (3) the current and future uses of ground water in the area; and
    - (4) the existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;
  - (c) the potential adverse effects of a release on surface water quality, taking into account:
    - (1) the quantity and quality of ground water and the direction of ground water flow;
    - (2) the patterns of rainfall in the region;
    - (3) the proximity of the tank system to surface waters;
    - (4) the current and future uses of surface waters in the area and any water quality standards established for those surface waters; and
    - (5) the existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality; and
  - (d) the potential adverse effects of a release on the land surrounding the tank system, taking into account:
    - (1) the patterns of rainfall in the region; and
    - (2) the current and future uses of the surrounding land.

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- (iii) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subparagraph (i) of this paragraph, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:
  - ('a') comply with the requirements of subdivision (g) of this section, except paragraph (g)(4); and
  - ('b') decontaminate or remove contaminated soil to the extent necessary to:
    - ('1') enable the tank system for which the variance was granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release; and
    - ('2') prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and
  - ('c') if contaminated soil cannot be removed or decontaminated in accordance with clause ('b') of this subparagraph, comply with the requirement of paragraph (h)(2) of this section.
- (iv) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subparagraph (i) of this paragraph, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:
  - ('a') comply with the requirements of paragraphs (g)(1), (2), (3) and (4) of this section;
  - ('b') prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if ground water has been contaminated, the owner or operator must comply with the requirements of paragraph (h)(2) of this section; and
  - ('c') provide secondary containment in accordance with the requirements of paragraphs (1)-(6) of this subdivision if repairing, replacing, or reinstalling the tank system, or reapply for a variance from secondary containment and meet the requirements for new tank systems in subdivision (c) of this section if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed and ground water or surface water has not been contaminated.
- (8) The following procedures must be followed in order to request a variance from secondary containment:
  - (i) The commissioner must be notified in writing by the owner or operator that he or she intends to conduct and submit a demonstration for a variance from secondary containment as allowed

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in paragraph (7) of this subdivision according to the following schedule:

- (a) for existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with paragraph (1) of this subdivision;
  - (b) for new tank systems, at least 30 days prior to entering into a contract for installation.
- (ii) As part of the notification, the owner or operator must also submit to the commissioner a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in subparagraph (7)(i) or (ii) of this subdivision.
  - (iii) The demonstration for a variance must be completed within 180 days after notifying the commissioner of an intent to conduct the demonstration.
  - (iv) If a variance is granted under this paragraph, the commissioner will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.
- (9) All tank systems, until such time as secondary containment that meets the requirements of this section is provided, must comply with the following:
- (i) for nonenterable underground tanks, a leak test that meets the requirements of subparagraph (b)(2)(v) of this section or other tank integrity method, as approved or required by the commissioner, must be conducted at least annually;
  - (ii) for other than nonenterable underground tanks, the owner or operator must either conduct a leak test as in subparagraph (i) of this paragraph or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified professional engineer registered in New York. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments must be 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;
  - (iii) for ancillary equipment, a leak test or other integrity assessment as approved by the commissioner must be conducted at least annually;
- Note:* The practices described in the American Petroleum Institute (API) publication ‘*Guide for Inspection of Refinery Equipment*,’ chapter XIII, “atmospheric and low-pressure storage tanks,” 4th edition, 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.
- (iv) the owner or operator must maintain on file at the facility a record of the results of the

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assessments conducted in accordance with subparagraphs (i)-(iii) of this paragraph;

- (v) if a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in subparagraphs (i)-(iii) of this paragraph, the owner or operator must comply with the requirements of subdivision (g) of this section.

#### (e) General operating requirements.

- (1) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode or otherwise fail.
- (2) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:
  - (i) spill prevention controls (e.g., check valves, dry disconnect couplings);
  - (ii) overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and
  - (iii) maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.
- (3) The owner or operator must comply with the requirements of subdivision (g) if a leak or spill occurs in the tank system.
- (4) The owner or operator must mark all tanks with the words “Hazardous Waste” and with other words that identify the contents of the tanks. For underground tanks, the markings must be placed on a sign in the area above the tank.

#### (f) Inspections.

- (1) The owner or operator must develop and follow a schedule and procedure for inspecting overfill controls.
- (2) The owner or operator must inspect at least once each operating day data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

**Note:** Section 373-2.2(g)(3) of this Part requires the owner or operator to remedy any deterioration or malfunction the owner or operator finds. Subdivision (g) of this section requires the owner or operator to notify the department within 24 hours of confirming a leak. Also, 40 CFR Part 302 (see section 370.1(e) of this Title) may require the owner or operator to notify the National Response Center of a release.

- (3) In addition, except as noted under paragraph (4) of this subdivision, the owner or operator must inspect at least once each operating day:
  - (i) aboveground portions of the tank system, if any, to detect corrosion or releases of waste; and



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- (ii) the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).
- (4) Owners or operators of tank systems that either use leak detection systems to alert facility personnel to leaks, or implement other established workplace practices to ensure leaks are promptly identified within 24 hours, must inspect at least weekly those areas described in subparagraphs (3)(i) and (ii) of this subdivision. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.
- (5) Ancillary equipment that is not otherwise secondarily contained, as described in subparagraphs (d)(6)(i) through (iv) of this section, must be inspected at least once each operating day.
- (6) The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:
  - (i) the proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and
  - (ii) all sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

*Note:* The practices described in the National Association of Corrosion Engineers (NACE) standard, "recommended practice (RP-02-85) control of external corrosion on metallic buried, partially buried, or submerged liquid storage systems", (see section 370.1(e) of this Title) and the American Petroleum Institute (API) publication 1632, '*Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*' (see section 370.1(e) of this Title) may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.

- (7) The owner or operator must document in the operating record of the facility an inspection of those items in paragraphs (1)-(6) of this subdivision.

#### **(g) Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.**

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

- (1) Cessation of use; prevent flow or addition of wastes. The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.
- (2) Removal of waste from tank system or secondary containment system.
  - (i) If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator, demonstrates that it is not possible, at the

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earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system.

- (ii) If material was released to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.
- (3) Containment of visible releases to the environment. The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:
- (i) prevent further migration of the leak or spill to soils or surface water; and
  - (ii) remove, and properly dispose of, any visible contamination of the soil or surface water.
- (4) Notifications, reports.
- (i) Any release to the environment, except as provided in subparagraph (ii) of this paragraph, must be reported to the commissioner within 24 hours of its detection. If the release has been reported to 6 NYCRR Part 595, that report will satisfy this requirement.
- Note:* The DEC spill hotline number is (800) 457-7362; outside of New York State (518) 457-7362.
- (ii) A leak or spill of hazardous waste is exempted from the requirements of this paragraph if it is:
    - ('a') less than or equal to a quantity of one pound; and
    - ('b') immediately contained and cleaned-up.
  - (iii) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the commissioner:
    - ('a') likely route of migration of the release;
    - ('b') characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);
    - ('c') results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the commissioner as soon as they become available;
    - ('d') proximity to downgradient drinking water, surface water, and populated areas; and
    - ('e') description of response actions taken or planned.
- (5) Provision of secondary containment, repair or closure.
- (i) Unless the owner or operator satisfies the requirements of subparagraphs (ii)-(iv) of this paragraph, the tank system must be closed in accordance with subdivision (h) of this section.

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- (ii) If the cause of the release was a spill that has not damaged the integrity of the system, the owner or operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.
  - (iii) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.
  - (iv) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner or operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of subdivision (d) of this section before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of paragraph (6) of this subdivision are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in subdivisions (c) and (d) of this section. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with subdivision (d) of this section prior to being returned to use.
- (6) Certification of major repairs. If the owner or operator has repaired a tank system in accordance with paragraph (5) of this subdivision, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by an independent, qualified, professional engineer registered in New York in accordance with section 373-1.4(a)(5)(iv) of this Part that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the department within seven days after returning the tank system to use. This certification must be placed in the operating record and maintained until closure of the facility.

**Note:** The commissioner may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under ECL Article 71 requiring corrective action or such other response as deemed necessary to protect human health or the environment.

**Note:** See section 373-2.2(g)(3) of this Part for the requirements necessary to remedy a failure. Also, 40 CFR part 302 may require the owner or operator to notify the National Response Center of certain releases.

#### (h) Closure and post-closure care.

- (1) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and

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structures and equipment contaminated with waste, and manage them as hazardous waste, unless section 371.1(d)(4) of this Title applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in sections 373-2.7 and 373-2.8 of this Subpart.

- (2) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in paragraph (1) of this subdivision, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (see section 373-2.14(g) of this Subpart). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in sections 373-2.7 and 373-2.8 of this Subpart.
- (3) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of paragraphs (d)(2)-(6) of this section and has not been granted a variance from the secondary containment requirements in accordance with paragraph (d)(7) of this section, then:
  - (i) the closure plan for the tank system must include both a plan for complying with paragraph (1) of this subdivision and a contingent plan for complying with paragraph (2) of this subdivision;
  - (ii) a contingent post-closure plan for complying with paragraph (2) of this subdivision must be prepared and submitted as part of the permit application;
  - (iii) the cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under paragraph (1) of this subdivision;
  - (iv) financial assurance must be based on the cost estimates in subparagraph (iii) of this paragraph; and
  - (v) for the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under sections 373-2.7 and 373-2.8 of this Subpart.

**(i) Special requirements for ignitable or reactive wastes.**

- (1) Ignitable or reactive waste must not be placed in tank systems, unless:
  - (i) the waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:
    - ('a') the resulting waste, mixture, or dissolved material no longer meets the definition of *'ignitable'* or *'reactive waste'* under section 371.3(b) or (d) of this Title; and
    - ('b') section 373-2.2(i)(2) of this Subpart is complied with;

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- (ii) 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
- (iii) the tank system is used solely for emergencies.

- (2) The owner or operator of a facility where ignitable or reactive wastes are stored or treated in a tank must 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" (see section 370.1(e) of this Title).

#### **(j) Special requirements for incompatible wastes.**

- (1) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless section 373-2.2(i)(2) of this Subpart is complied with.
- (2) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless section 373-2.2(i)(2) of this Subpart is complied with.

#### **(k) Air emission standards.**

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of sections 373-2.27, 373-2.28 and 373-2.29 of this Subpart.

### **Section 373-2.11 Surface impoundments.**

#### **(a) Applicability.**

The regulations in this section apply to owners and operators of facilities that use surface impoundments to treat, store or dispose of hazardous waste, except as section 373-2.1(a) of this Subpart provides otherwise.

#### **(b) Design and operating requirements.**

- (1) Any surface impoundment that is not covered by paragraph (3) of this subdivision or section 373-3.11(i) of this Part must have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner must be designed, constructed and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with subparagraph (f)(1)(i) of this section. For impoundments that will be closed in accordance with subparagraph (f)(1)(ii) of this section, the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:
  - (i) constructed of materials that have appropriate chemical properties and sufficient strength and

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thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the wastes or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operations;

- (ii) placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and
  - (iii) installed to cover all surrounding earth likely to be in contact with the waste or leachate.
- (2) The owner or operator will be exempted from the requirements of paragraph (1) of this subdivision if the commissioner finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see section 373-2.6(d) of this Subpart) into the ground water or surface water at any future time. In deciding whether to grant an exception, the commissioner will consider:
- (i) the nature and quantity of the wastes;
  - (ii) the proposed alternate design and operation;
  - (iii) the hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and ground water or surface water; and
  - (iv) all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.
- (3) The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992, and each replacement of an existing surface impoundment unit that is to commence reuse after July 29, 1992, must install two or more liners and a leachate collection and removal system between such liners. Construction commences is defined in section 370.2(b) of this Title under “existing facility.”
- (i)
    - (a) The liner system must include:
      - (1) a top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and
      - (2) a composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be

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constructed of at least three feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.

- (b) The liners must comply with subparagraphs (1)(i)-(iii) of this subdivision.
- (ii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:
- (a) constructed with a bottom slope of one percent or more;
- (b) constructed of granular drainage materials with a hydraulic conductivity of  $1 \times 10^{-1}$  cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-4}$  m<sup>2</sup>/sec or more;
- (c) constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment;
- (d) designed and operated to minimize clogging during the active life and post-closure care period; and
- (e) constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.
- (iii) The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.
- (iv) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- (4) The commissioner may approve alternative design or operating practices to those specified in paragraph (3) of this subdivision if the owner or operator demonstrates to the commissioner that such design and operating practices, together with location characteristics:
- (i) will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal system specified in paragraph (3) of this subdivision; and

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- (ii) will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- (5) The double liner requirement set forth in paragraph (3) of this subdivision may be waived by the commissioner for any monofill, if:
- (i) the monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristics in section 371.3(e) of this Title with EPA hazardous waste numbers D004 through D017; and
    - ('a')
      - ('1') the monofill has at least one liner for which there is no evidence of leaking. For the purposes of this paragraph, the term liner means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water or surface water at any time during the active life of the facility. At the closure of any surface impoundment which has been exempted from the requirements of paragraph (3) of this subdivision on the basis of a liner designed, constructed, installed and operated to prevent hazardous waste from passing beyond the liner, owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment will comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;
      - ('2') the monofill is located more than one-quarter mile from an *'underground source of drinking water'* (as that term is defined in section 370.2(b) of this Title); and
      - ('3') the monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with Part 373 permits; or
    - ('b') the owner or operator demonstrates that the monofill is located, designed and operated to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.
- (6) The owner or operator of any replacement surface impoundment unit is exempt from paragraph (3) of this subdivision if:
- (i) the existing unit was constructed in compliance with the design standards of section 3004(0)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act (see section 370.1(e) of this Title); and
  - (ii) there is no reason to believe that the liner is not functioning as designed.



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- (7) A surface impoundment must be designed, constructed, maintained and operated to prevent overtopping resulting from normal or abnormal operations, overfilling, wind and wave action, rainfall, run-on, malfunctions of level controllers, alarms, other equipment and human error.
  - (8) A surface impoundment must have dikes that are designed, constructed and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.
  - (9) The commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subdivision are satisfied.
- (c) **double-lined surface impoundments are not exempt from section 373-2.6, ground water protection requirements.**
- (d) **Monitoring and inspection.**
- (1) During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from paragraph (b)(1) of this section) and cover systems (e.g., membranes, sheets or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Immediately after construction or installation:
    - (i) synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters; and
    - (ii) soil-based and admixed liners and covers must be inspected for imperfections, including lenses, cracks, channels, root holes or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.
  - (2) While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
    - (i) deterioration, malfunctions, or improper operation of overtopping control systems;
    - (ii) sudden drops in the level of the impoundment's contents; and
    - (iii) severe erosion or other signs of deterioration in dikes or other containment devices.
  - (3) Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a professional engineer, registered in New York State, that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:
    - (i) will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and
    - (ii) will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

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(4)

- (i) An owner or operator required to have a leak detection system under paragraphs (b)(3) or (4) of this section must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.
- (ii) After the final cover is installed, the amount of liquid removed from each leak detection system sump must be recorded at least monthly. If the liquid level in any sump stays below its pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below its pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of the amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.
- (iii) Pump operating level is a liquid level proposed by the owner or operator and approved by the commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

**(e) Emergency repairs; contingency plans.**

- (1) A surface impoundment must be removed from service in accordance with paragraph (2) of this subdivision when:
  - (i) the level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flow into or out of the impoundment; or
  - (ii) the dike leaks.
- (2) When a surface impoundment must be removed from service as required by paragraph (1) of this subdivision, the owner or operator must:
  - (i) immediately shut off the flow or stop the addition of wastes into the impoundment;
  - (ii) immediately contain any surface leakage which has occurred or is occurring;
  - (iii) immediately stop the leak;
  - (iv) take any other necessary steps to stop or prevent catastrophic failure;
  - (v) if a leak cannot be stopped by any other means, empty the impoundment; and
  - (vi) notify the commissioner of the problem, in writing, within seven days after detecting the problem.
- (3) As part of the contingency plan required in section 373-2.4 of this Subpart, the owner or operator must specify a procedure for complying with the requirements of paragraph (2) of this subdivision.

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- (4) No surface impoundment that has been removed from service in accordance with the requirements of this subdivision may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:
- (i) If the impoundment was removed from service as a result of the actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with paragraph (d)(3) of this section.
  - (ii) If the impoundment was removed from service as a result of sudden drop in the liquid level, then:
    - ('a') for any existing portion of the impoundment, a liner must be installed in compliance with paragraph (b)(1) of this section; and
    - ('b') for any other portion of the impoundment, the repaired liner system must be certified by a professional engineer, registered in New York State, as meeting the design specifications approved in the permit.
- (5) A surface impoundment that has been removed from service in accordance with the requirements of this subdivision, and that is not being repaired, must be closed in accordance with the provisions of subdivision (f) of this section.

**(f) Closure and post-closure care.**

- (1) At closure, the owner or operator must:
- (i) remove or decontaminate all waste residues, contaminated system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 371.1(d)(4) of this Title applies; or
  - (ii)
    - ('a') eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;
    - ('b') stabilize remaining wastes to a bearing capacity sufficient to support final cover; and
    - ('c') cover the surface impoundment with a final cover designed and constructed to:
      - ('1') provide long-term minimization of the migration of liquids through the impoundment;
      - ('2') function with minimum maintenance;
      - ('3') promote drainage and minimize erosion or abrasion of the final cover;
      - ('4') accommodate settling and subsidence so that the cover's integrity is maintained; and
      - ('5') have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

### 373-2.11(f)

- (2) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in section 373-2.7(g)-(j) of this Subpart, including maintenance and monitoring throughout the post-closure care period (specified in the permit under section 373-2.7(g)). The owner or operator must:
- (i) maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events;
  - (ii) maintain and monitor the leak detection system in accordance with clause (b)(3)(ii)(‘d’), subparagraph (iii), and paragraph (d)(4) of this section, and comply with all other applicable leak detection system requirements of this Subpart;
  - (iii) maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of section 373-2.6 of this Subpart; and
  - (iv) prevent run-on and runoff from eroding or otherwise damaging the final cover.
- (3)
- (i) If an owner or operator plans to close a surface impoundment in accordance with subparagraph (1)(I) of this subdivision, and the impoundment does not comply with the liner requirements of paragraph (b)(1) of this section and is not exempt from them in accordance with paragraph (b)(2), then:
    - (‘a’) the closure plan for the impoundment under section 373-2.7(c) of this Subpart must include both a plan for complying with subparagraph (1)(i) of this subdivision and a contingency plan for complying with subparagraph (1)(ii) in case not all contaminated subsoils can be practicably removed at closure; and
    - (‘b’) the owner or operator must prepare a contingent post-closure plan under section 373-2.7(h) of this Subpart for complying with paragraph (2) of this subdivision in case not all contaminated subsoils can be practicably removed at closure.
  - (ii) The cost estimates calculated under section 373-2.8(c) and (e) of this Subpart for closure and post-closure care of an impoundment subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under subparagraph (1)(i) of this subdivision.

**(g) Special requirements for ignitable or reactive waste.**

Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of Part 376 of this Title and:

- (1) the waste is treated, rendered or mixed before or immediately after placement in the impoundment so that:
  - (i) the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 371.3(b) or (d) of this Title; and

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- (ii) section 373-2.2(i)(2) of this Subpart is complied with; or
- (2) the waste is managed in such a way that is protected from any material or conditions which may cause it to ignite or react; or
- (3) the surface impoundment is used solely for emergencies.

#### **(h) Special requirements for incompatible wastes.**

Incompatible wastes, or incompatible wastes and materials (see Appendix 29 of this Title for examples), must not be placed in the same surface impoundment, unless section 373-2.2(i)(2) of this Subpart is complied with.

#### **(i) Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027.**

- (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this Subpart. The factors to be considered are:
  - (i) the volume, physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
  - (ii) the attenuative properties of underlying and surrounding soils or other materials;
  - (iii) the mobilizing properties of other materials codisposed with these wastes; and
  - (iv) the effectiveness of additional treatment, design or monitoring techniques.
- (2) The commissioner may determine that additional design, operating and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022, F023, F026 and F027 to reduce the possibility of migration of these wastes to ground water, surface water or air to protect human health and the environment.

#### **(j) Action leakage rate.**

- (1) The commissioner shall approve an action leakage rate for surface impoundment units subject to paragraph (b)(3) or (4) of this section. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must allow for decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).
- (2) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under paragraph (d)(4) of this

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section to an average daily flow rate (gallons per acre per day) for each sump. Unless the commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit is closed in accordance with paragraph (f)(2) of this section, monthly during the post-closure care period when monthly monitoring is required under paragraph (d)(4) of this section.

#### (k) Response actions.

- (1) The owner or operator of surface impoundment units subject to paragraph (b)(3) or (4) of this section must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (2) of this subdivision.
- (2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
  - (i) notify the commissioner in writing of the exceedance within seven days of the determination;
  - (ii) submit a preliminary written assessment to the commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
  - (iii) determine to the extent practicable the location, size, and cause of any leak;
  - (iv) determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs or controls, and whether or not the unit should be closed;
  - (v) determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
  - (vi) within 30 days after the notification that the action leakage rate has been exceeded, submit to the commissioner the results of the analyses specified in subparagraphs (iii), (iv), and (v) of this paragraph, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the commissioner a report summarizing the results of any remedial actions taken and actions planned.
- (3) To make the leak and/or remediation determinations in subparagraphs (2)(iii), (iv), and (v) of this subdivision, the owner or operator must:
  - (i)
    - ('a') assess the source of liquids and amounts of liquids by source;
    - ('b') conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and

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the hazard and mobility of the liquid; and

(c) assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(ii) document why such assessments are not needed.

#### (l) **Air emission standards.**

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of sections 373-2.28 and 373-2.29 of this Subpart.

### **Section 373-2.12 Waste piles.**

#### (a) **Applicability.**

- (1) The regulations in this section apply to owners and operators of facilities that place, store or treat hazardous waste in piles, except as section 373-2.1(a) of this Subpart provides otherwise.
- (2) The regulations in this section do not apply to owners and operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under 373-2.14 of this Subpart (secure landburial facilities).
- (3) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation, so that neither runoff nor leachate is generated, is not subject to regulation under subdivision (b) of this section or under section 373-2.6 of this Subpart, provided that:
  - (i) liquids or materials containing free liquids are not placed in the pile;
  - (ii) the pile is protected from surface water run-on by the structure or in some other manner;
  - (iii) the pile is designed and operated to control dispersal of waste by wind, where necessary, by means other than wetting; and
  - (iv) the pile will not generate leachate through decomposition or other reactions.

*Note:* Operation of a waste pile may be subject to Part 376, Land Disposal Restrictions of this Title.

#### (b) **Design and operating requirements.**

- (1) A waste pile (except for an existing portion of a waste pile) must have:
  - (i) a liner that is designed, constructed and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be:

**373-2.12(b)**

- (a) constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operations;
  - (b) placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and
  - (c) installed to cover all surrounding earth likely to be in contact with the waste or leachate; and
- (ii) a leachate collection and removal system immediately above the liner that is designed, constructed, maintained and operated to collect and remove leachate from the pile. The commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:
- (a) constructed of materials that are:
    - (1) chemically resistant to the waste managed in the pile and the leachate expected to be generated; and
    - (2) of sufficient strength and thickness to prevent collapse under the pressure exerted by overlying wastes, waste cover materials, and by any equipment used at the pile; and
  - (b) designed and operated to function without clogging through the scheduled closure of the waste pile.
- (2) The owner or operator will be exempt from the requirements of paragraph (1) of this subdivision if the commissioner finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics will prevent the migration of any hazardous constituents (see section 373-2.6(d) of this Subpart) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the commissioner will consider:
- (i) the nature and quantity of the wastes;
  - (ii) the proposed alternate design and operation;
  - (iii) the hydrogeologic setting of the facility, including alternative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and
  - (iv) all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.



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- (3) The owner or operator of each new waste pile unit, each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit must install two or more liners and a leachate collection and removal system above and between such liners.
- (i)
- (a) The liner system must include:
- (1) a top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and
- (2) a composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least three feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.
- (b) The liners must comply with clauses (1)(i)(a), (b), and (c) of this subdivision.
- (ii) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and post-closure care period. The commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with clauses (3)(iii)(c) and (d) of this subdivision.
- (iii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:
- (a) constructed with a bottom slope of one percent or more;
- (b) constructed of granular drainage materials with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more;
- (c) constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness

**373-2.12(b)**

to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;

- (d) designed and operated to minimize clogging during the active life and post-closure care period; and
  - (e) constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.
- (iv) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.
  - (v) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- (4) The commissioner may approve alternative design or operating practices to those specified in paragraph (3) of this subdivision if the owner or operator demonstrates to the commissioner that such design and operating practices, together with location characteristics:
- (i) will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in paragraph (3) of this subdivision; and
  - (ii) will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- (5) Paragraph (3) of this subdivision does not apply to monofills that are granted a waiver by the commissioner in accordance with section 373-2.11(b)(5) of this Subpart.
- (6) The owner or operator of any replacement waste pile unit is exempt from paragraph (3) of this subdivision if:
- (i) the existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act (see section 370.1(e) of this Title); and
  - (ii) there is no reason to believe that the liner is not functioning as designed.
- (7) The owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.
- (8) The owner or operator must design, operate and maintain a runoff management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

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- (9) Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.
  - (10) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.
  - (11) The commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subdivision are satisfied.
- (c) Double-lined piles which are not applicable to paragraph (a)(3) of this section are not exempt from section 373-2.6 ground-water protection requirements.**
- (d) Reserved.**
- (e) Monitoring and inspection.**
- (1) During construction or installation, liners (except in the case of existing portions of piles exempt from paragraph (b)(1) of this section) and cover systems (e.g., membranes, sheets or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Immediately after construction or installation:
    - (i) synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures and blisters;
    - (ii) soil-based and admixed liners and covers must be inspected for imperfections, including lenses, cracks, channels, root holes or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.
  - (2) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
    - (i) deterioration, malfunctions, or improper operation of run-on and runoff control systems;
    - (ii) proper functioning of wind dispersal control systems, where present; and
    - (iii) the presence of leachate in and proper functioning of leachate collection and removal systems, where present.
  - (3) An owner or operator required to have a leak detection system under paragraph (b)(3) of this section must record the amounts of liquids removed from each leak detection system sump at least once each week during the active life and closure period.
- (f) Special requirements for ignitable or reactive waste.**

Ignitable or reactive waste must not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements in Part 376 of this Title and:

- (1) the waste is treated, rendered or mixed before or immediately after placement in the pile, so that:
  - (i) the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 371.3(b) or (d) of this Title; and

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(ii) section 373-2.2(i)(2) of this Subpart is complied with; or

(2) the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

**(g) Special requirements for incompatible wastes.**

(1) Incompatible wastes, or incompatible wastes and materials (see Appendix 29 of this Title for examples), must not be placed in the same pile, unless section 373-2.2(i)(2) if this Subpart is complied with.

(2) A pile of hazardous waste that is incompatible with any waste or other material placed nearby in containers, other piles, open tanks or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall or other device.

(3) Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with section 373-2.2(i)(2) of this Subpart.

**(h) Closure and post-closure care.**

(1) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 371.1(d)(4) of this Title applies.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoil, structures and equipment as required in paragraph (1) of this subdivision, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (see section 373-2.14(f) of this Subpart).

(3)

(i) The owner or operator of a waste pile that does not comply with the liner requirements of subparagraph (b)(1)(i) of this section, and is not exempt from them in accordance with paragraph (a)(3) or (b)(2) of this section must:

('a') include, in the closure plan for the pile under section 373-2.7(c) of this Subpart, both a plan for complying with paragraph (1) of this subdivision and a contingent plan for complying with paragraph (2) in case not all contaminated subsoils can be practicably removed at closure; and

('b') prepare a contingent post-closure plan under section 373-2.7(h) of this Subpart for complying with paragraph (2) of this subdivision in case not all contaminated subsoils can be practicably removed at closure.

### 373-2.12(h)

- (ii) The cost estimates calculated under section 373-2.8(c) and (e) of this Subpart for closure and post-closure care of a pile subject to this section must include the costs of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (1) of this subdivision.

**(i) Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027.**

- (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 must not be placed in waste piles that are not enclosed (the requirements for an enclosed waste pile are described in paragraph (a)(3) of this section) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this Subpart. The factors to be considered are:
  - (i) the volume and the physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
  - (ii) the attenuative properties of underlying and surrounding soils or other materials;
  - (iii) the mobilizing properties of other materials codisposed with these wastes; and
  - (iv) the effectiveness of additional treatment, design or monitoring techniques.
- (2) The commissioner may determine that additional design, operating and monitoring requirements are necessary for piles managing hazardous wastes F020, F021, F022, F023, F026, and F027 to reduce the possibility of migration of these wastes to ground water, surface water or air to protect human health and the environment.

**(j) Action leakage rate.**

- (1) The commissioner shall approve an action leakage rate for waste pile units subject to paragraph (b)(3) or (4) of this section. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must allow for decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).
- (2) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under paragraph (e)(3) of this section to an average daily flow rate (gallons per acre per day) for each sump. Unless the commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

**(k) Response actions.**

- (1) The owner or operator of waste pile units subject to paragraph (b)(3) or (4) of this section must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (2) of this subdivision:
- (2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
  - (i) notify the commissioner in writing of the exceedance within seven days of the determination;
  - (ii) submit a preliminary written assessment to the commissioner within 14 days of the determination, as to the amount of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
  - (iii) determine to the extent practicable the location, size, and cause of any leak;
  - (iv) determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
  - (v) determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and
  - (vi) within 30 days after the notification that the action leakage rate has been exceeded, submit to the commissioner the results of the analyses specified in subparagraphs (iii), (iv), and (v) of this paragraph, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the commissioner a report summarizing the results of any remedial actions taken and actions planned.
- (3) To make the leak and/or remediation determinations in subparagraphs (2)(iii), (iv) and (v) of this subdivision, the owner or operator must:
  - (i)
    - ('a') assess the source of liquids and amounts of liquids by source;
    - ('b') conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
    - ('c') assess the seriousness of any leaks in terms of potential for escaping into the environment; or
  - (ii) document why such assessments are not needed.

**Section 373-2.13 Land treatment.****(a) Applicability.**

The regulations in this section apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as section 373-2.1(a) of this Subpart provides otherwise.

**(b) Treatment program.**

- (1) An owner or operator subject to this section must establish a land treatment program that is designed to ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed or immobilized within the treatment zone. The commissioner will specify in the facility permit the elements of the treatment program, including:
  - (i) the wastes that are capable of being treated at the unit, based on a demonstration under subdivision (c) of this section;
  - (ii) design measures and operating practices necessary to maximize the success of degradation, transformation and immobilization processes in the treatment zone in accordance with paragraph (d)(1) of this section; and
  - (iii) unsaturated zone monitoring provisions meeting the requirements of subdivision (f) of this section.
- (2) The commissioner will specify in the facility permit the hazardous constituents that must be degraded, transformed or immobilized under this section. *'Hazardous constituents'* are constituents identified in Appendix 23 of this Title (see 6 NYCRR Part 371) that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.
- (3) The commissioner will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:
  - (i) no more than 1.5 meters (five feet) from the initial soil surface; and
  - (ii) more than one meter (three feet) above the seasonal high-water table.

**(c) Treatment demonstration.**

- (1) For each waste that will be applied to the treatment zone, the owner or operator must demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed or immobilized in the treatment zone.
- (2) In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data or, in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make this demonstration, a treatment or disposal permit must be obtained under section 373-1.9(b) of this Title. The commissioner will

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specify in this permit the testing, analytical, design and operating requirements (including the duration of the tests and analyses and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and clean-up activities) necessary to meet the requirements in paragraph (3) of this subdivision.

- (3) Any field test or laboratory analysis conducted in order to make a demonstration under paragraph (1) of this subdivision must:
- (i) accurately simulate the characteristics and operating conditions for the proposed land treatment unit, including:
    - ('a') the characteristics of the waste (including the presence of Appendix 23 (see Part 371 of this Title) constituents);
    - ('b') the climate in the area;
    - ('c') the topography of the surrounding area;
    - ('d') the characteristics of the soil in the treatment zone (including depth); and
    - ('e') the operating practices to be used at the unit;
  - (ii) be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed or immobilized in the treatment zone of the proposed land treatment unit; and
  - (iii) be conducted in a manner that protects human health and the environment, considering:
    - ('a') the characteristics of the waste to be tested;
    - ('b') the operating and monitoring measures taken during the course of the test;
    - ('c') the duration of the test;
    - ('d') the volume of waste used in the test; and
    - ('e') in the case of field tests, the potential for migration of hazardous constituents to ground water or surface water.

**(d) Design and operating requirements.**

The commissioner will specify in the facility's permit how the owner or operator will design, construct, operate and maintain the land treatment unit in compliance with this subdivision.

- (1) The owner or operator must design, construct, operate and maintain the unit to maximize the degradation, transformation and immobilization of hazardous constituents in the treatment zone. The owner or operator must design, construct, operate and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under subdivision (c) of this section. At a minimum, the commissioner will specify the following in the facility permit:
- (i) the rate and method of waste application to the treatment zone;



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- (ii) measures to control soil pH;
  - (iii) measures to enhance microbial or chemical reactions (e.g., fertilization, tilling); and
  - (iv) measures to control the moisture content of the treatment zone.
- (2) The owner or operator must design, construct, operate and maintain the treatment zone to minimize runoff of hazardous constituents during the active life of the land treatment unit.
  - (3) The owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year storm.
  - (4) The owner or operator must design, construct, operate and maintain a runoff management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.
  - (5) Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.
  - (6) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.
  - (7) The owner or operator must inspect the unit weekly and after storms to detect evidence of:
    - (i) deterioration, malfunctions, or improper operation of run-on and runoff control systems; and
    - (ii) improper functioning of wind dispersal control measures.

#### **(e) Food-chain crops and agricultural land.**

- (1) No land treatment facility shall be located on agricultural soil groups 1, 2, 3 and 4 (Land Classification System as certified by the commissioner of the Department of Agriculture and Markets).
- (2) No food chain crops may be grown on any facility that is or has been used as a land treatment facility for hazardous wastes.
- (3) Any person receiving a permit to operate a land treatment facility for hazardous waste shall, as a condition of such permit, place or cause to be placed a restrictive covenant, which shall run with the land to the deed or deeds to all real property subject to the permit, which prohibits the use of such real property for the growing of food-chain crops.

#### **(f) Unsaturated zone monitoring.**

An owner or operator subject to this section must establish an unsaturated zone monitoring program to discharge the following responsibilities:

- (1) The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

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- (i) The commissioner will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under paragraph (b)(2) of this section.
  - (ii) The commissioner may require monitoring for principal hazardous constituents (PHC's) in lieu of constituents specified under paragraph (b)(2) of this section. '*PHC's*' are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation and immobilization. The commissioner will establish PHC's if it is found, based on waste analyses, treatment demonstrations or other data, that effective degradation, transformation or immobilization of the PHC's will assure treatment at least equivalent to levels for the other hazardous constituents in the wastes.
- (2) The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores, and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:
- (i) represent the quality of background soil-pore liquid quality and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and
  - (ii) indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.
- (3) The owner or operator must establish a background value for each hazardous constituent to be monitored under paragraph (1) of this subdivision. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.
- (i) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.
  - (ii) Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.
  - (iii) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under paragraph (6) of this subdivision.
  - (iv) In taking samples used in the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with subparagraph (2)(i) of this subdivision.
- (4) The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The commissioner will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing and rate of waste application, and the soil permeability. The owner or operator must express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under paragraph (6) of this subdivision.

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- (5) The owner or operator must use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:
  - (i) sample collection;
  - (ii) sample preservation and shipment;
  - (iii) analytical procedures; and
  - (iv) chain of custody control.
- (6) The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored, under paragraph (1) of this subdivision, below the treatment zone each time soil monitoring is conducted under paragraph (4) of this subdivision.
  - (i) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each hazardous constituent, as determined under paragraph (4) of this subdivision, to the background value for that constituent according to the statistical procedure specified in the facility permit.
  - (ii) The owner or operator must determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The commissioner will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.
  - (iii) The owner or operator must determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The commissioner will specify a statistical procedure in the facility permit that the commissioner finds:
    - ('a') is appropriate for the distribution of the data used to establish background values; and
    - ('b') provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of failing to identify real migration from the treatment zone.
- (7) If the owner or operator determines, pursuant to paragraph (6) of this subdivision, that there is a statistically significant increase of hazardous constituents below the treatment zone, the owner or operator must:
  - (i) notify the commissioner of this finding, in writing, within seven days. The notification must indicate what constituents have shown statistically significant increases; and

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(ii) within 90 days, submit to the commissioner an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation or immobilization processes in the treatment zone.

(8) If the owner or operator determines, pursuant to paragraph (6) of this subdivision, that there is a statistically significant increase of hazardous constituents below the treatment zone, the owner or operator may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under subparagraph (7)(ii) of this subdivision, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subparagraph (7)(ii), unless the demonstration made under this paragraph successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the owner or operator must:

- (i) notify the commissioner, in writing, within seven days of determining a statistically significant increase below the treatment zone, that the owner or operator intends to make a determination under this paragraph;
- (ii) within 90 days, submit a report to the commissioner demonstrating that a source other than the regulated units caused the increase, or that the increase resulted from error in sampling, analysis or evaluation;
- (iii) within 90 days, submit to the commissioner an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program established; and
- (iv) continue to monitor in accordance with the unsaturated zone monitoring program established under this subdivision.

#### **(g) Recordkeeping.**

The owner or operator must include hazardous waste application dates and rates in the operating record required under section 373-2.5(c) of this Subpart.

#### **(h) Closure and post-closure care.**

- (1) During the closure period, the owner or operator must:
  - (i) continue all operations (including pH control) necessary to maximize degradation, transformation or immobilization of hazardous constituents within the treatment zone as required under paragraph (d)(1) of this section, except to the extent such measures are inconsistent with subparagraph (viii) of this paragraph;
  - (ii) continue all operations in the treatment zone to minimize runoff of hazardous constituents as required under paragraph (d)(2) of this section;
  - (iii) maintain the run-on control system required under paragraph (d)(3) of this section;

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- (iv) maintain the runoff management system required under paragraph (d)(4) of this section;
  - (v) control wind dispersal of hazardous waste if required under paragraph (d)(6) of this section;
  - (vi) continue to comply with any prohibitions or conditions concerning growth of food-chain crops under subdivision (e) of this section;
  - (vii) continue unsaturated zone monitoring in compliance with subdivision (f) of this section, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and
  - (viii) establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.
- (2) For the purpose of complying with section 373-2.7(f) of this Subpart, when closure is completed, the owner or operator may submit to the commissioner certification by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.
- (3) During the post-closure care period, the owner or operator must:
- (i) continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;
  - (ii) maintain a vegetative cover over closed portions of the facility;
  - (iii) maintain the run-on control system required under paragraph (d)(3) of this section;
  - (iv) maintain the runoff management system required under paragraph (d)(4) of this section;
  - (v) control wind dispersal of hazardous waste if required under paragraph (d)(6) of this section;
  - (vi) continue to comply with any prohibitions or conditions concerning growth of food-chain crops under subdivision (e) of this section; and
  - (vii) continue unsaturated zone monitoring in compliance with subdivision (f) of this section, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.
- (4) The owner or operator is not subject to regulation under subparagraph (1)(viii) and paragraph (3) of this subdivision if the commissioner finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in subparagraph (iii) of this paragraph. The owner or operator may submit such a demonstration to the commissioner at any time during the closure or post-closure care periods. For the purposes of this paragraph:

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- (i) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under paragraph (b)(2) of this section.
  - ('a') Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.
  - ('b') The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under subparagraph (iii) of this paragraph.
- (ii) In taking samples used in the determination of background and treatment zone values, the owner or operator must take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.
- (iii) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:
  - ('a') is appropriate for the distribution of the data used to establish background values; and
  - ('b') provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify real presence in the treatment zone.
- (5) The owner or operator is not subject to regulation under section 373-2.6 of this Subpart if the commissioner finds that the owner or operator satisfies paragraph (4) of this subdivision and if unsaturated zone monitoring under subdivision (f) of this section indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

**(i) Special requirements for ignitable or reactive waste.**

The owner or operator must not apply ignitable or reactive waste to the treatment zone, unless the waste and the treatment zone meet all applicable requirements of Part 376 of this Title and:

- (1) the waste is immediately incorporated into the soil so that:
  - (i) the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 371.3(b) or (d) of this Title; and
  - (ii) section 373-2.2(i)(2) of this Subpart is complied with; or
- (2) the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

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**(j) Special requirements for incompatible wastes.**

The owner or operator must not place incompatible wastes, or incompatible wastes and materials (see Appendix 29 of this Title for examples), in or on the same treatment zone, unless section 373-2.2(i)(2) of this Subpart is complied with.

**(k) Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027.**

- (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 must not be placed in a land treatment unit unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the commissioner pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this Subpart. The factors to be considered are:
  - (i) the volume and the physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
  - (ii) the attenuative properties of underlying and surrounding soils or other materials;
  - (iii) the mobilizing properties of other materials codisposed with these wastes; and
  - (iv) the effectiveness of additional treatment, design or monitoring techniques.
- (2) The commissioner may determine that additional design, operating and monitoring requirements are necessary for land treatment facilities managing hazardous wastes F020, F021, F022, F023, F026 and F027 to reduce the possibility of migration of these wastes to ground water, surface water or air to protect human health and the environment.

### **Section 373-2.14 Secure landburial facilities.**

**(a) Applicability.**

The regulations in this section apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as section 373-2.1(a) of this Subpart provides otherwise.

**(b) Site characteristics.**

- (1) The soil beneath the facility shall have a hydraulic conductivity of  $10^{-5}$  centimeter per second or less, as determined by in-situ hydraulic conductivity test methods, and shall be subject to the approval of the department.
- (2) No waste shall be closer than 10 feet to an aquifer or bedrock.
- (3) No facility shall be located over ground-water recharge areas serving public water supplies.
- (4) Facilities shall be located at an elevation not less than five feet above a flood plain, unless provisions have been made to prevent the encroachment of flood waters.
- (5) All fill areas or excavations shall terminate no closer than 50 feet from the boundary lines of the property on which the secure landburial facility is operated.

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- (6) The required horizontal separation between deposited hazardous waste and any surface waters shall be determined for each secure landburial facility by reference to soil attenuation characteristics, drainage and natural man-made barriers.

**(c) Design and operating requirements.**

- (1) Any landfill that is not covered by paragraph (3) of this subdivision or section 373-3.14(j)(1) of this Part must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

- (i) a liner that is designed, constructed and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The composition and thickness of the liner, and the hydraulic conductivity of any natural material required as part of the liner, shall be subject to the approval of the department. In no case shall the hydraulic conductivity of any approved liner consisting of natural material to be greater than  $10^{-7}$  centimeter per second. The liner must be:

('a') constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation;

('b') placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

('c') installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

- (ii) a leachate collection and removal system immediately above the liner that is designed, constructed, maintained and operated to collect and remove leachate from the landfill. The commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The liner may include an uppermost layer designed to protect against damage during construction of that part of the liner materials that prevent wastes from passing into the liner. The leachate collection and removal system must be:

('a') constructed of materials that are:

('1') chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and



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- (2') of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and
  - ('b') designed and operated to function without clogging through the scheduled closure of the landfill.
- (2) The owner or operator will be exempted from the requirements of paragraph (1) of this subdivision if the commissioner finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see section 373-2.6(d) of this Subpart) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the commissioner will consider:
  - (i) the nature and quantity of the wastes;
  - (ii) the proposed alternate design and operation;
  - (iii) the hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and
  - (iv) all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.
- (3) The owner or operator of each new landfill unit on which construction commences after January 29, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners. ***‘Construction commences’*** is as defined in section 370.2(b) of this Title under “existing facility.”
  - (i)
    - ('a') The liner system must include:
      - (1') a top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and
      - (2') a composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure period. The lower component must be designed and constructed if a breach in the upper component were to occur. The lower component must be constructed of at least three feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.
    - ('b') The liners must comply with clauses (1)(i)(‘a’), (‘b’), and (‘c’) of this subdivision.

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- (ii) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The commissioner will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with clauses (iii)(‘c’) and (‘d’) of this paragraph.
  - (iii) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:
    - (‘a’) constructed with a bottom slope of one percent or more;
    - (‘b’) constructed of granular drainage materials with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more;
    - (‘c’) constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the landfill;
    - (‘d’) designed and operated to minimize clogging during the active life and post-closure care period; and
    - (‘e’) constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sumps(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.
  - (iv) The owner or operator shall collect and remove pumpable liquids into the leak detection system sumps to minimize the head on the bottom liner.
  - (v) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- (4) The commissioner may approve alternate design or operating practices to those specified in paragraph (3) of this subdivision if the owner or operator demonstrates to the commissioner that such design and operating practices, together with location characteristics:

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- (i) will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in paragraph (3) of this subdivision; and
  - (ii) will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- (5) The double liner requirement set forth in paragraph (3) of this subdivision may be waived by the commissioner for any monofill, if:
- (i) the monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristic in section 371.3(e) of this Title, with EPA hazardous waste numbers D004 through D017; and
  - (ii)
    - ('a')
      - ('1') the monofill has at least one liner for which there is no evidence that such liner is leaking;
      - ('2') the monofill is located more than one-quarter mile from an *'underground source of drinking water'* (as that term is defined in section 370.2(b) of this Title); and
      - ('3') the monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with Part 373 permits; or
    - ('b') the owner or operator demonstrates that the monofill is located, designed and operated to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.
- (6) The owner or operator of any replacement landfill unit is exempt from paragraph (3) of this subdivision if:
- (i) the existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act (see section 370.1(e) of this Title); and
  - (ii) there is no reason to believe that the liner is not functioning as designed.
- (7) The owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.
- (8) The owner or operator must design, construct, operate and maintain a runoff management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

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- (9) Collection and holding facilities (e.g., tanks or basins) associated with run-on and runoff control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.
- (10) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.
- (11) The commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subdivision are satisfied.

**(d) Double-lined landfills are not exempt from section 373-2.6 ground-water protection requirements.**

**(e) Monitoring and inspection.**

- (1) During construction or installation, liners and cover systems (e.g., membranes, sheets or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Immediately after construction or installation:
  - (i) synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters; and
  - (ii) soil-based and admixed liners and covers must be inspected for imperfections, including lenses, cracks, channels, root holes or other structural nonuniformities, that may cause an increase in the permeability of the liner or cover.
- (2) While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
  - (i) deterioration, malfunctions or improper operation of run-on and runoff control systems;
  - (ii) proper functioning of wind dispersal control systems, where present; and
  - (iii) the presence of leachate in and proper functioning of leachate collection and removal systems, where present.
- (3)
  - (i) An owner or operator required to have a leak detection system under paragraph (c)(3) or (4) of this section must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.
  - (ii) After the final cover is installed, the amount of liquid removed from each leak detection system sump must be recorded at least monthly. If the liquid level in any sump stays below its pump operating level for two consecutive months, the amount of liquid in the sump must be recorded at least quarterly. If the liquid level in the sump stays below its pump operating level for two consecutive quarters, the amount of liquid in the sump must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of the amount of liquid removed from each sump until the liquid

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level again stays below the pump operating level for two consecutive months.

- (iii) ***'Pump operating level'*** is a liquid level proposed by the owner or operator and approved by the commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

#### **(f) Surveying and recordkeeping.**

The owner or operator of a landfill must maintain the following items in the operating record required under section 373-2.5(c) of this Subpart:

- (1) on a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed bench marks; and
- (2) the contents of each cell and the approximate location of each hazardous waste type within each cell.

#### **(g) Closure and post-closure care.**

- (1) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:
  - (i) provide long-term minimization of migration of liquids through the closed landfill;
  - (ii) function with minimum maintenance;
  - (iii) promote drainage and minimize erosion or abrasion of the cover;
  - (iv) accommodate settling and subsidence so that the cover's integrity is maintained; and
  - (v) have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
- (2) After final closure, the owner or operator must comply with all post-closure requirements contained in section 373-2.7(g)-(j) of this Subpart, including maintenance and monitoring throughout the post-closure care period (specified in the permit under section 373-2.7(g)). The owner or operator must:
  - (i) maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events;
  - (ii) maintain and monitor the leak detection system, in accordance with clause (c)(3)(iii)(‘d’) and subparagraph (iv), and paragraph (e)(3) of this section, and comply with all other applicable leak detection system requirements of this Subpart;
  - (iii) continue to operate the leachate collection and removal system until leachate is no longer detected;
  - (iv) maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of section 373-2.6 of this Subpart;
  - (v) prevent run-on and runoff from eroding or otherwise damaging the final cover; and

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(vi) protect and maintain surveyed bench marks used in complying with subdivision (f) of this section.

(3) During the post-closure care period, if liquid leaks into a leak detection system, the owner or operator must notify the commissioner of the leak, in writing, within seven days after detecting the leak. The commissioner will modify the permit to require compliance with the requirements of section 373-2.6 of this Subpart.

**(h) Special requirements for ignitable or reactive waste.**

(1) Except as provided in paragraph (2) of this subdivision, and in subdivision (l) of this section, ignitable or reactive waste must not be placed in a landfill, unless the waste and the landfill meet all applicable requirements of Part 376 of this Title, and:

(i) the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under section 371.3(b) or (d) of this Title; and

(ii) section 373-2.2(i)(2) of this Subpart is complied with.

(2) Except for prohibited wastes which remain subject to treatment standards in section 376.4 of this Title, ignitable wastes in containers may be landfilled without meeting the requirements of paragraph (1) of this subdivision, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

**(i) Special requirements for incompatible wastes.**

Incompatible wastes, or incompatible wastes and materials (see Appendix 29 of this Title for examples), must not be placed in the same landfill cell, unless section 373-2.2(i)(2) of this Subpart is complied with.

**(j) Special requirements for liquid waste.**

(1) Bulk or noncontainerized liquid waste or waste containing free liquids (whether or not sorbents have been added) must not be placed in a landfill.

(2) Containers holding free liquids must not be placed in a landfill unless:

(i) all free-standing liquid:

(a) has been removed by decanting, or other methods;

(b) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

(c) has been otherwise eliminated; or

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- (ii) the container is very small, such as an ampule; or
  - (iii) the container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or
  - (iv) the container is a lab pack, as defined in subdivision (l) of this section, and is disposed of in accordance with subdivision (l) of this section.
- (3) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in “Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods,” (EPA Publication No. SW-846 (see section 370.1(e) of this Title)).
- (4) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in subparagraph (i) of this paragraph; materials that pass one of the tests in subparagraph (ii) of this paragraph; or materials that are determined by the department to be nonbiodegradable through the Part 370 petition process.
- (i) Nonbiodegradable sorbents.
    - ('a') Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller’s earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or
    - ('b') High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or
    - ('c') Mixtures of these nonbiodegradable materials.
  - (ii) Tests for nonbiodegradable sorbents.
    - ('a') The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a) - Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi (see section 370.1(e) of this Title).
    - ('b') The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b) - Standard Practice for Determining Resistance of Plastics to Bacteria (see section 370.1(e) of this Title).

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- (c) The sorbent material is determined to be nonbiodegradable under OECD test 301B: (CO<sub>2</sub> Evolution (Modified Sturm Test)) as incorporated by reference in section 370.1(e) of this Title.

#### **(k) Special requirements for containers.**

Unless they are very small, such as an ampule, containers must be either:

- (1) at least 90 percent full when placed in the landfill; or
- (2) crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

#### **(l) Disposal of small containers of hazardous waste in overpacked drums (lab packs).**

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

- (1) Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by or be ignited by, the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Federal Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178 and 179; see 6 NYCRR 370.1(e)), if those regulations specify a particular inside container for the waste.
- (2) The inside containers must be overpacked in an open-head Federal DOT-specified metal shipping container (49 CFR parts 178 and 179; see 6 NYCRR 370.1(e)) of no more than 416-liter (110-gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with paragraph (j)(4) of this section to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.
- (3) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with section 373-2.2(i)(2) of this Subpart.
- (4) Incompatible wastes, as defined in 6 NYCRR 370.2(b), must not be placed in the same outside container.
- (5) Reactive wastes, other than cyanide or sulfide-bearing waste as defined in section 371.3(d)(1)(v) of this Title, must be treated or rendered nonreactive prior to packaging in accordance with paragraphs (1) through (4) of this subdivision. Cyanide and sulfide bearing reactive waste may be packed in accordance with paragraphs (1) through (4) of this subdivision without first being treated or rendered nonreactive.
- (6) Such disposal is in compliance with the requirements of Part 376 of this Title.
  - (i) Persons who incinerate lab packs according to the requirements in section 376.4(c)(3)(i) of



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this Title may use fiber drums in place of metal outer containers. Such fiber drums must meet all USDOT specifications and be overpacked according to the requirements in paragraph (2) of this subdivision.

#### **(m) Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027.**

- (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 must not be placed in a landfill unless the owner or operator operates the landfill in accordance with a management plan for these wastes that is approved by the commissioner pursuant to the standards set out in this paragraph, and in accordance with all other applicable requirements of this Subpart. The factors to be considered are:
  - (i) the volume and the physical and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere;
  - (ii) the attenuative properties of underlying and surrounding soils or other materials;
  - (iii) the mobilizing properties of other materials codisposed with these wastes; and
  - (iv) the effectiveness of additional treatment, design or monitoring requirements.
- (2) The commissioner may determine that additional design, operating and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022, F023, F026 and F027 to reduce the possibility of migration of these wastes to ground water, surface water or air to protect human health and the environment.

#### **(n) Action leakage rate.**

- (1) The commissioner shall approve an action leakage rate for landfill units subject to paragraph (c)(3) or (4) of this section. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must allow for decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).
- (2) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under paragraph (e)(3) of this section, to an average daily flow rate (gallons per acre per day) for each sump. Unless the commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under paragraph (e)(3) of this section.

#### **(o) Response actions.**

- (1) The owner or operator of landfill units subject to paragraph (c)(3) or (4) of this section must have an approved response action plan before receipt of waste. The response action plan must set forth the

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actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (2) of this subdivision.

- (2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
  - (i) notify the commissioner in writing of the exceedance within seven days of the determination;
  - (ii) submit a preliminary written assessment to the commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
  - (iii) determine to the extent practicable the location, size, and cause of any leak;
  - (iv) determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
  - (v) determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
  - (vi) within 30 days after the notification that the action leakage rate has been exceeded, submit to the commissioner the results of the analyses specified in subparagraphs (iii), (iv), and (v) of this paragraph, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the commissioner a report summarizing the results of any remedial actions taken and actions planned.
- (3) To make the leak and/or remediation determinations in subparagraphs (2)(iii), (iv), and (v) of this subdivision, the owner or operator must:
  - (i)
    - ('a') assess the source of liquids and amounts of liquids by source;
    - ('b') conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
    - ('c') assess the seriousness of any leaks in terms of potential for escaping into the environment; or
  - (ii) document why such assessments are not needed.

## Section 373-2.15 Incinerators.

### (a) Applicability.

- (1) The regulations of this section apply to owners and operators of hazardous waste incinerators (as defined in section 370.2(b) of this Title), except as section 373-2.1(a) of this Subpart provides otherwise.
- (2) Additional regulations governing construction and operation of incinerators for purposes of air pollution control are set forth in Parts 200, 201, 212, 219, 225, 227 and 257 of this Title.
- (3) *'Integration of the MACT standards.'*
  - (i) Except as provided by subparagraphs (ii) through (v) of this paragraph, the standards of this Subpart:
    - ('a') do not apply to a new hazardous waste incineration unit that becomes subject to Part 373 permit requirements after October 12, 2005; or
    - ('b') no longer apply when an owner or operator of an existing hazardous waste incineration unit demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR part 63, subpart EEE, as incorporated by reference and implemented by sections 200.10(a) and (d) of this Title, by conducting a comprehensive performance test and submitting to the department a Notification of Compliance under 40 CFR sections 63.1207(j) and 63.1210(d) of subpart EEE documenting compliance with the requirements of 40 CFR part 63, subpart EEE as incorporated by reference and implemented by sections 200.10(a) and (d) of this Title.
  - (ii) Part 373 permit conditions that were based on the standards of this Subpart will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.
  - (iii) The MACT standards do not replace the closure requirements of subdivision (h) of this section or the applicable requirements of sections 372-2.1 – 373-2.8, 373-2.28 and 373-2.29 of this Subpart.
  - (iv) The particulate matter standard of paragraph(d)(3) of this section remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard under 40 CFR section 63.1206(b)(14) and 63.1219(e) of subpart EEE, as incorporated by reference in and implemented by sections 200.10 (a) and (d) of this Title.
  - (v) The following requirements remain in effect for startup, shutdown, and malfunction events if the owner or operator elects to comply with section 373-1.12(a)(1)(i) of this Part to minimize emissions of toxic compounds from these events:
    - ('a') paragraph (f)(1) of this section requiring that an incinerator operate in accordance with operating requirements specified in the permit; and

### 373-2.15(a)

- (b') paragraph (f)(3) of this section requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.
- (4) After consideration of the waste analysis included with the permit application, the commissioner, in establishing the permit conditions, must exempt the applicant from all requirements of this section except subdivisions (b) (waste analysis) and (h) (closure):
  - (i) if the commissioner finds that the waste to be burned is:
    - ('a') listed as a hazardous waste in section 371.4 of this Title, solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or
    - ('b') listed as a hazardous waste in section 371.4 of this Title, solely because it is reactive (Hazard Code R) for characteristics other than those listed in section 371.3(d)(1)(iv) and (v) of this Title, and will not be burned when other hazardous wastes are present in the combustion zone; or
    - ('c') a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under section 371.3 of this Title; or
    - ('d') a hazardous waste solely because it possesses any of the reactivity characteristics described by section 371.3(d)(1)(i), (ii), (iii), (vi), (vii) and (viii) of this Title, and will not be burned when other hazardous wastes are present in the combustion zone; and
  - (ii) if the waste analysis shows that the waste contains none of the hazardous constituents listed in Appendix 23 (see Part 371) of this Title, which would reasonably be expected to be in the waste.
- (5) If the waste to be burned is one which is described by clause (3)(i)(‘a’), (‘b’), (‘c’) or (‘d’) of this subdivision and contains insignificant concentrations of the hazardous constituents listed in Appendix 23 of this Title, then the commissioner may, in establishing permit conditions, exempt the applicant from all requirements of this section, except subdivisions (b) (waste analysis) and (h) (closure), after consideration of the waste analysis included with the permit application, unless the commissioner finds that the waste will pose a threat to human health and the environment when burned in an incinerator.
- (6) The owner or operator of an incinerator may conduct trial burns, subject only to the requirements of section 373-1.9(a) of this Part.

#### **(b) Waste analysis.**

- (1) As a portion of the trial burn plan required by section 373-1.9(a) of this Part, or with the Part 373 permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by section 373-1.9(a)(2) or 373-1.5(f) of this Part. Owners or operators of new hazardous waste incinerators must provide the information required by

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section 373-1.9(a)(3) or 373-1.5(f) to the greatest extent possible.

- (2) Throughout normal operation, the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in the permit (under paragraph (f)(2) of this section).

#### (c) Principal organic hazardous constituents (POHC's).

- (1) Principal organic hazardous constituents (POHC's) in the waste feed must be treated to the extent required by the performance standard of subdivision (d) of this section.
- (2)
  - (i) One or more POHC's will be specified in the facility's permit, from among those constituents listed in Appendix 23 (see Part 371) of this Title, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with the facility's Part 373 permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHC's. Constituents are more likely to be designated as POHC's if they are present in large quantities or concentrations in the waste.
  - (ii) Trial POHC's will be designated for performance of trial burns in accordance with the procedure specified in section 373-1.9 of this Part for obtaining trial burn permits.

#### (d) Performance standards.

An incinerator burning hazardous waste must be designed, constructed and maintained so that, when operated in accordance with operating requirements specified under subdivision (f) of this section, it will meet the following performance standards:

- (1)
  - (i) Except as provided in subparagraph (ii) of this paragraph, an incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99 percent for each principal organic hazardous constituent (POHC) designated (under subdivision (c) of this section) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE = \frac{(W_{in} - W_{out}) \times 100\%}{W_{in}}$$

Where:

$W_{in}$  = Mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator; and

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$W_{out}$  = Mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

- (ii) An incinerator burning hazardous wastes F020, F021, F022, F023, F026 or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999 percent for each principal organic hazardous constituent (POHC) designated under subdivision (c) of this section in its permit. This performance must be demonstrated on POHC's that are more difficult to incinerate than tetra, penta, and hexachlorodibenzo-p dioxins and dibenzofurans. DRE is determined for each POHC from the equation in subparagraph (i) of this paragraph. In addition, the owner or operator of the incinerator must notify the department of the intent to incinerate hazardous wastes F020, F021, F022, F023, F026 or F027.
- (2) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (four pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or one percent of the HCl in the stack gas prior to entering any pollution control equipment.
- (3) An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = \frac{P_m \times 14}{21 - Y}$$

Where  $P_c$  is the corrected concentration of particulate matter,  $P_m$  is the measured concentration of particulate matter, and  $Y$  is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas. This method is presented in 40 CFR part 60, Appendix A (Method 3) (see 6 NYCRR 370.1(e)). This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the commissioner will select an appropriate correction procedure to be specified in the facility permit.

- (4) For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under subdivision (f) of this section) will be regarded as compliance with this subdivision. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation or reissuance of a permit under section 373-1.7(b) of this Part.

#### (e) Hazardous waste incinerator permits.

- (1) The owner or operator of a hazardous waste incinerator may burn only wastes specified in the permit, and only under operating conditions specified for those wastes under subdivision (f) of this section, except:
  - (i) in approved trial burns under section 373-1.9(a) of this Part; or
  - (ii) under exemptions in subdivision (a) of this section.

### 373-2.15(e)

- (2) Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with a permit application under section 373-1.5(f) of this Part.
- (3) The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this section, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of subdivision (f) of this section, sufficient to comply with the following standards:
  - (i) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in subparagraph (ii) of this paragraph, not to exceed a duration of 720 hours' operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of subdivision (d) of this section. The commissioner may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.
  - (ii) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of subdivision (d) of this section and must be in accordance with the approved trial burn plan.
  - (iii) For the period immediately following completion of the trial burn and only for the minimum period sufficient to allow sample analysis, data computation and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the commissioner, the operating requirements must be those most likely to ensure compliance with the performance standards of subdivision (d) of this section.
  - (iv) For the remaining duration of the permit, the operating requirements must be those demonstrated in a trial burn or by alternative data specified in section 373-1.5(f)(3) of this Part, as sufficient to ensure compliance with the performance standards of subdivision (d) of this section.

#### **(f) Operating requirements.**

- (1) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in paragraph (e)(2) of this section and included with a facility's permit application) to be sufficient to comply with the performance standards of subdivision (d) of this section.
- (2) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of subdivision (d) of this section) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits, including the following conditions:

**373-2.15(f)**

- (i) carbon monoxide (CO) level in the stack exhaust gas;
  - (ii) waste feed rate;
  - (iii) combustion temperature;
  - (iv) an appropriate indicator of combustion gas velocity;
  - (v) allowable variations in incinerator system design or operating procedures; and
  - (vi) such other operating requirements as are necessary to ensure that the performance standards of subdivision (d) of this section are met.
- (3) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with subdivision (a) of this section) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.
- (4) Fugitive emissions from the combustion zone must be controlled by:
- (i) keeping the combustion zone totally sealed against fugitive emissions;
  - (ii) maintaining a combustion zone pressure lower than atmospheric pressure; or
  - (iii) an alternate means of control demonstrated (with Part 373 permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.
- (5) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under paragraph (1) of this subdivision.
- (6) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

**(g) Monitoring and inspections.**

- (1) The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste:
- (i) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis.
  - (ii) Carbon monoxide must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.
  - (iii) Upon request by the commissioner, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of subdivision (d) of this section.



### 373-2.15(g)

- (2) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions and signs of tampering.
- (3) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the commissioner that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.
- (4) This monitoring and inspection data must be recorded and the records must be placed in the operating record required by section 373-2.5(c) of this Subpart.

#### (h) Closure.

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters and scrubber sludges) from the incinerator site.

*Note:* At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with 6 NYCRR 371.1(d)(4), that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of 6 NYCRR Parts 372 through 374.

### Section 373-2.16 — 373-2.18 Reserved.

### Section 373-2.19 Special provisions for cleanup.

#### (a) Applicability of corrective action management unit (CAMU) regulations.

- (1) Except as provided in paragraph (2) of this subdivision, CAMUs are subject to the requirements of subdivision (c) of this section.
- (2) CAMUs that were approved before April 22, 2002, or for which substantially complete applications (or equivalents) were submitted to the department on or before November 20, 2000, are subject to the requirements in subdivision (b) of this section for grandfathered CAMUs; CAMU waste, activities, and design will not be subject to the standards in subdivision (c) of this section, so long as the waste, activities, and design remain within the general scope of the CAMU as approved.

#### (b) Grandfathered corrective action management units (CAMUs).

- (1) To implement remedies under section 373-2.6(l) of this Subpart, ECL 71-2727(3), or RCRA section 3008(h), or to implement remedies at a permitted facility that is not subject to section 373-2.6(l) of this Subpart, the department may designate an area at the facility as a corrective action management unit, under the requirements of this subdivision. *'Corrective action management unit'* means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMU's may be designated at a facility.

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- (i) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes.
  - (ii) Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.
- (2)
- (i) The department may designate a regulated unit (as defined in section 373-2.6(a)(1)(ii) of this Subpart) as a CAMU, or may incorporate a regulated unit into a CAMU, if:
    - ('a') the regulated unit is closed or closing, meaning it has begun the closure process under section 373-2.7(d) or 373-3.7(d) of this Part; and
    - ('b') inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.
  - (ii) The section 373-2.6, 373-2.7, 373-2.8, 373-3.6, 373-3.7, and 373-3.8 requirements and the unit-specific requirements of this Subpart or Subpart 373-3 of this Title that applied to that regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.
- (3) The department shall designate a CAMU in accordance with the following:
- (i) the CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;
  - (ii) waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;
  - (iii) the CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;
  - (iv) areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;
  - (v) the CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;
  - (vi) the CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and
  - (vii) the CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

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- (4) The owner /operator shall provide sufficient information to enable the department to designate a CAMU in accordance with the criteria in subdivision (a) of this section.
- (5) The department shall specify, in the permit or order, requirements for CAMU's to include the following:
  - (i) The areal configuration of the CAMU.
  - (ii) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.
  - (iii) Requirements for ground water monitoring that are sufficient to:
    - ('a') continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU; and
    - ('b') Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.
  - (iv) Closure and post-closure requirements.
    - ('a') Closure of corrective action management units shall:
      - ('1') minimize the need for further maintenance; and
      - ('2') control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, of hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.
    - ('b') Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the department for a given CAMU:
      - ('1') requirements for excavation, removal, treatment or containment of wastes;
      - ('2') for areas in which wastes will remain after closure of the CAMU, requirements for capping of such areas; and
      - ('3') requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU.
    - ('c') In establishing specific closure requirements for CAMUs under paragraph (a)(5) of this section, the department shall consider the following factors:
      - ('1') CAMU characteristics;
      - ('2') volume of wastes which remain in place after closure;

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- (3') potential for releases from the CAMU;
- (4') physical and chemical characteristics of the waste;
- (5') hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and
- (6') potential for exposure of humans and environmental receptors if releases from the CAMU were to occur.

(d) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

- (6) The department shall document the rationale for designating CAMUs and shall make such documentation available to the public.
- (7) Incorporation of a CAMU into an existing permit must be approved by the department according to the procedures for department-initiated modifications under section 373-1.7(b) of this Part, or according to the permit modification procedures of section 373-1.7 of this Part.
- (8) The designation of a CAMU does not change the department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

**(c) Corrective action management units (CAMU).**

(1) To implement remedies under section 373-2.6(l) of this Subpart, ECL 71-2727(3), or RCRA section 3008(h), or to implement remedies at a permitted facility that is not subject to section 373-2.6(l) of this Subpart, the department may designate an area at the facility as a corrective action management unit under the requirements in this subdivision. ***'Corrective action management unit'*** means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(i) ***'CAMU-eligible waste'*** means:

(a) all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup. As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes;

(b) wastes that would otherwise meet the description in clause ('a') of this subparagraph are not "CAMU-eligible wastes" where:

(1) the wastes are hazardous wastes found during cleanup in intact or substantially

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intact containers, tanks, or other non-land-based units found above ground, unless the wastes are first placed in the tanks, containers or non-land-based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup; or

(2) the department exercises the discretion in subparagraph (ii) of this paragraph to prohibit the wastes from management in a CAMU;

(c) notwithstanding clause ('a') of this subparagraph, where appropriate, as-generated non-hazardous waste maybe placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.

(ii) The department may prohibit, where appropriate, the placement of waste in a CAMU where the department has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of Part 376 of this Title, or applicable unit design requirements of this Subpart, or applicable unit design requirements of Subpart 373-3 of this Part, or that non-compliance with other applicable requirements of this Title likely contributed to the release of the waste.

(iii) Prohibition against placing liquids in CAMUs.

(a) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

(b) The requirements in section 373-2.14(j)(2) of this Subpart for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

(c) The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste.

(d) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with section 373-2.14(j)(3) of this Subpart. Sorbents used to treat free liquids in CAMUs must meet the requirements of section 373-2.14(j)(4) of this Subpart.

(iv) Placement of CAMU-eligible wastes into or within, a CAMU does not constitute land disposal of hazardous wastes.

(v) Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(2)

(i) The department may designate a regulated unit (as defined in section 373-2.6(a)(1)(ii) of this Subpart) as a CAMU, or may incorporate a regulated unit into a CAMU. if:

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- (a) the regulated unit is closed or closing, meaning it has begun the closure process under section 373-2.7(d) of this Subpart or section 373-3.7(d) of this Part; and
  - (b) inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.
- (ii) The section 373-2.6, 373-2.7, 373-2.8, 373-3.6, 373-3.7, and 373-3.8 requirements and the unit-specific requirements of this Subpart or Subpart 373-3 of this Part that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.
- (3) The department shall designate a CAMU that will be used for storage and/or treatment only in accordance with paragraph (6) of this subdivision. The department shall designate all other CAMUs in accordance with the following:
- (i) the CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;
  - (ii) waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;
  - (iii) the CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility;
  - (iv) areas within the CAMU, where wastes remain in place after closure of the CAMU. shall be managed and contained so as to minimize future releases, to the extent practicable;
  - (v) the CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;
  - (vi) the CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and
  - (vii) the CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.
- (4) The owner/operator shall provide sufficient information to enable the department to designate a CAMU in accordance with the criteria in this subdivision. This must include, unless not reasonably available, information on:
- (i) the origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release);
  - (ii) whether the waste was listed or identified as hazardous at the time of disposal and/or release; and

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- (iii) whether the disposal and/or release of the waste occurred before or after the land disposal requirements of Part 376 of this Title were in effect for the waste listing or characteristic.
- (5) The department shall specify, in the permit or order, requirements for CAMUs to include the following:
- (i) the areal configuration of the CAMU;
  - (ii) except as provided in paragraph (7) of this subdivision, requirements for CAMU-eligible waste management to include the specification of applicable design, operation, treatment and closure requirements; and
  - (iii) minimum design requirements: CAMUs, except as provided in paragraph (6) of this subdivision, into which wastes are placed must be designed in accordance with the following:
    - ('a') Unless the department approves alternate requirements under clause ('b') of this subparagraph, CAMUs that consist of new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. For purposes of this section, '*composite liner*' means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.
    - ('b') Alternate requirements. The department may approve alternate requirements if:
      - ('1') the department finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in clause ('a') of this subparagraph; or
      - ('2') the CAMU is to be established in an area with existing significant levels of contamination, and the department finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.
  - (iv) Minimum treatment requirements. Unless the wastes will be placed in a CAMU for storage and/or treatment only in accordance with paragraph (6) of this subdivision, CAMU-eligible wastes that, absent this section, would be subject to the treatment requirements of Part 376 of this Title, and that the department determines contain principal hazardous constituents must be treated to the standards specified in clause ('c') of this subparagraph.

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- ('a') Principal hazardous constituents are those constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.
  - ('1') In general, the department will designate as principal hazardous constituents:
    - ('i') carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above  $10^{-3}$ ; and
    - ('ii') non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.
  - ('2') The department will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to ground water are substantially higher than cleanup levels or goals at the site: when making such a designation, the department may consider such factors as constituent concentrations, and fate and transport characteristics under site conditions.
  - ('3') The department may also designate other constituents as principal hazardous constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.
- ('b') In determining which constituents are “principal hazardous constituents,” the department must consider all constituents which, absent this section, would be subject to the treatment requirements in Part 376 of this Title.
- ('c') Waste that the department determines contains principal hazardous constituents must meet treatment standards determined in accordance with clause ('d') or ('e') of this subparagraph.
- ('d') Treatment standards for wastes placed in CAMUs.
  - ('1') For non-metals, treatment must achieve 90 percent reduction in total principal hazardous constituent concentrations, except as provided by subclause ('3') of this clause.
  - ('2') For metals, treatment must achieve 90 percent reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by subclause ('3') of this clause.
  - ('3') When treatment of any principal hazardous constituent to a 90 percent reduction standard would result in a concentration less than 10 times the universal treatment standard for that constituent, treatment to achieve constituent concentrations less



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than 10 times the universal treatment standard is not required. Universal treatment standards are identified in section 376.4(j) Table UTS of this Title.

- (4) For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must also be treated to eliminate these characteristics.
  - (5) For debris, the debris must be treated in accordance with section 376.4(g) of this Title, or by methods or to levels established under subclauses ('1') through ('4') or clause ('e') of this subparagraph, whichever the department determines is appropriate.
  - (6) Alternatives to TCLP. For metal bearing wastes for which metals removal treatment is not used, the department may specify a leaching test other than the TCLP (SW-846 Method 1311, as incorporated by reference in section 370.1(e) of this Title) to measure treatment effectiveness, provided the department determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.
- (e) Adjusted standards. The department may adjust the treatment level or method in clause ('d') of this subparagraph to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or method must be protective of human health and the environment:
- (1) the technical impracticability of treatment to the levels or by the methods in clause ('d') of this subparagraph;
  - (2) the levels or methods in clause ('d') of this subparagraph would result in concentrations of principal hazardous constituents (PHCs) that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under State or Federal law);
  - (3) the views of the affected local community on the treatment levels or methods in clause ('d') of this subparagraph as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;
  - (4) the short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in clause ('d') of this subparagraph;
  - (5) the long-term protection offered by the engineering design of the CAMU and related engineering controls:
    - (i) where the treatment standards in clause ('d') of this subparagraph are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility;
    - (ii) where cost-effective treatment has been used and the CAMU meets the liner and leachate collection requirements for new land disposal units at section

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373-2.14(c)(3) and (4) of this Subpart;

- (iii) where, after review of appropriate treatment technologies, the department determines that cost-effective treatment is not reasonably available, and the CAMU meets the liner and leachate collection requirements for new land disposal units at section 373-2.14(c)(3) and (4) of this Subpart;
  - (iv) where cost-effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility; or
  - (v) where, after review of appropriate treatment technologies, the department determines that cost-effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in clause (iii)(a) and (b) of this paragraph, or the CAMU provides substantially equivalent or greater protection.
- (f) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the CAMU.
- (g) For the purpose of determining whether wastes placed in CAMUs have met site-specific treatment standards, the department may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.
- (v) Except as provided in paragraph (6) of this subdivision, requirements for ground water monitoring and corrective action that are sufficient to:
- (a) continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU;
  - (b) detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU; and
  - (c) require notification to the department and corrective action as necessary to protect human health and the environment for releases to ground water from the CAMU.
- (vi) Except as provided in paragraph (6) of this subdivision, closure and post-closure requirements:
- (a) closure of corrective action management units shall:
    - (1) minimize the need for further maintenance; and

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- (2') control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere;
- ('b') requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the department for a given CAMU:
  - (1') requirements for excavation, removal, treatment or containment of wastes; and
  - (2') requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU;
- ('c') in establishing specific closure requirements for CAMUs under this paragraph, the department shall consider the following factors:
  - (1') CAMU characteristics;
  - (2') volume of wastes which remain in place after closure;
  - (3') potential for releases from the CAMU;
  - (4') physical and chemical characteristics of the waste;
  - (5') hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and
  - (6') potential for exposure of humans and environmental receptors if releases were to occur from the CAMU;
- ('d') cap requirements:
  - (1') at final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria, except as provided in subclause ('2') of this clause:
    - ('i') provide long-term minimization of migration of liquids through the closed unit;
    - ('ii') function with minimum maintenance;
    - ('iii') promote drainage and minimize erosion or abrasion of the cover;
    - ('iv') accommodate settling and subsidence so that the cover's integrity is maintained; and

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- (v') have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
  - (2') the department may determine that modifications to subclause ('1') of this clause are needed to facilitate treatment or the performance of the CAMU (e.g., to promote biodegradation);
  - ('e') post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.
- (6) CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all of the requirements of this section, except as follows:
  - (i) CAMUs that are used for storage and/or treatment only and that operate in accordance with the time limits established in the staging pile regulations at clause (e)(4)(i)('c') of this section, and paragraphs (e)(8) and (9) of this section are subject to the requirements for staging piles at clauses (e)(4)(i)('a') and ('b') of this section, subparagraph (e)(4)(ii) of this section, paragraphs (e)(5) and (6) of this section, and paragraphs (e)(10) and (11) of this section in lieu of the performance standards and requirements for CAMUs in this subdivision at paragraph (3) and subparagraphs (5)(iii) through (vi) of this subdivision.
  - (ii) CAMUs that are used for storage and/or treatment only and that do not operate in accordance with the time limits established in the staging pile regulations at clause (e)(4)(i)('c') of this section, and paragraphs (e)(8) and (9) of this section:
    - ('a') must operate in accordance with a time limit, established by the Department, that is no longer than necessary to achieve a timely remedy selected for the waste; and
    - ('b') are subject to the requirements for staging piles at clauses (e)(4)(i)('a') and ('b') of this section, subparagraph (e)(4)(ii) of this section, paragraphs (e)(5) and (6) of this section, and paragraphs (e)(10) and (11) of this section in lieu of the performance standards and requirements for CAMUs in this section at paragraph (3) and subparagraphs (5)(iv) and (vi) of this subdivision.
- (7) CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at clause (5)(iii)('a') of this subdivision, caps at clause (5)(vi)('d') of this subdivision, ground water monitoring requirements at subparagraph (5)(v) of this subdivision or, for treatment and/or storage-only CAMUs, the design standards at paragraph (6) of this subdivision.
- (8) The department shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under clause (5)(iv)('e') of this subdivision to the treatment standards in subparagraph (5)(iv) of this subdivision.

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- (9) Notwithstanding any other provision of this section, the department may impose additional requirements as necessary to protect human health and the environment.
- (10) Incorporation of a CAMU into an existing permit must be approved by the department according to the procedures for department-initiated permit modifications under section 373-1.7(b) of this Part and section 621.14 of this Title or according to the permit modification procedures of section 373-1.7(b) of this Part and section 621.13 of this Title.
- (11) The designation of a CAMU does not change the department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

**(d) Temporary units (TU).**

- (1) For temporary tanks and container storage areas used to treat or store hazardous remediation wastes during remedial activities required under section 373-2.6(l) of this Subpart, ECL 71-2727(3), or RCRA section 3008(h), or at a permitted facility that is not subject to section 373-2.6(l) of this Subpart, the department may designate a unit at the facility, as a temporary unit. A temporary unit must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the temporary unit originated. For temporary units, the department may replace the design, operating, or closure standard applicable to these units under this Subpart or Subpart 373-3 of this Part, with alternative requirements which are protective of human health and the environment.
- (2) Any temporary unit to which alternative requirements are applied in accordance with paragraph (1) of this subdivision shall be:
  - (i) located within the facility boundary; and
  - (ii) used only for treatment or storage of remediation wastes.
- (3) In establishing standards to be applied to a temporary unit, the department shall consider the following factors:
  - (i) length of time such unit will be in operation;
  - (ii) type of unit;
  - (iii) volumes of wastes to be managed;
  - (iv) physical and chemical characteristics of the wastes to be managed in the unit;
  - (v) potential for releases from the unit;
  - (vi) hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and
  - (vii) potential for exposure of humans and environmental receptors if releases were to occur from the unit.

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- (4) The department shall specify in the permit or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The department shall also specify the design, operating, and closing requirements for the unit.
- (5) The department may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the permit or order, if the department determines that:
  - (i) continued operation of the unit will not pose a threat to human health and the environment; and
  - (ii) continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.
- (6) Incorporation of a temporary unit or time extension for a temporary unit into an existing permit shall be:
  - (i) approved in accordance with the procedures for department-initiated permit modifications under section 373-1.7(b) of this Part; or
  - (ii) requested by the owner/operator as a modification according to the procedures under section 373-1.7 of this Part.
- (7) The department shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make such documentation available to the public.

**(e) Staging piles.**

This subdivision is written in a special format to make it easier to understand the regulatory requirements. Like other department regulations, this establishes enforceable legal requirements. “I” and “you” refer to the owner/operator.

- (1) What is a staging pile? A *‘staging pile’* is an accumulation of solid, non-flowing remediation waste (as defined in section 370.2 of this Title) that is not a containment building and is used only during remedial operations for temporary storage at a facility. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the department according to the requirements in this subdivision.
  - (i) For the purposes of this subdivision, *‘storage’* includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.
  - (ii) (Reserved)
- (2) When may I use a staging pile? You may use a staging pile to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if you follow the standards and design criteria the department has designated for that staging pile. The department must

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designate the staging pile in a permit or, at an interim status facility, in a closure plan or order (consistent with section 373-1.3(g)(1)(v) and (2)(v) of this Part). The department must establish conditions in the permit, closure plan, or order that comply with paragraphs (4) through (11) of this subdivision.

- (3) What information must I provide to get a staging pile designated? When seeking a staging pile designation, you must provide:
  - (i) sufficient and accurate information to enable the department to impose standards and design criteria for your staging pile according to paragraphs (4) through (11) of this subdivision;
  - (ii) certification by an independent, qualified professional engineer licensed in New York State, for technical data, such as design drawings and specifications, and engineering studies, unless the department determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment; and
  - (iii) any additional information the department determines is necessary to protect human health and the environment.
  
- (4) What performance criteria must a staging pile satisfy? The department must establish the standards and design criteria for the staging pile in the permit, closure plan, or order.
  - (i) The standards and design criteria must comply with the following:
    - ('a') the staging pile must facilitate a reliable, effective and protective remedy;
    - ('b') the staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate); and
    - ('c') the staging pile must not operate for more than two years, except when the department grants an operating term extension under paragraph (9) of this subdivision (entitled "May I receive an operating extension for a staging pile?"). You must measure the two-year limit, or other operating term specified by the department in the permit, closure plan, or order, from the first time you place remediation waste into a staging pile. You must maintain a record of the date when you first placed remediation waste into the staging pile for the life of the permit, closure plan, or order, or for three years, whichever is longer.
  - (ii) Establishing the standards and design criteria, the department must consider the following factors:
    - ('a') length of time the pile will be in operation;
    - ('b') volumes of wastes you intend to store in the pile;
    - ('c') physical and chemical characteristics of the wastes to be stored in the unit;

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- (d) potential for releases from the unit;
  - (e) hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and
  - (f) potential for human and environmental exposure to potential releases from the unit.
- (5) May a staging pile receive ignitable or reactive remediation waste? You must not place ignitable or reactive remediation waste in a staging pile unless:
- (i) you have treated, rendered or mixed the remediation waste before you placed it in the staging pile so that:
    - (a) the remediation waste no longer meets the definition of ignitable or reactive under section 371.3(b) or (d) of the Title; and
    - (b) you have complied with section 373-2.2(i)(2) of this Subpart; or
  - (ii) you manage the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.
- (6) How do I handle incompatible remediation wastes in a staging pile? The term incompatible waste is defined in section 370.2 of this Title. You must comply with the following requirements for incompatible wastes in staging piles:
- (i) you must not place incompatible remediation wastes in the same staging pile unless you have complied with section 373-2.2(i)(2) of this Subpart;
  - (ii) if remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks or land disposal units (for example, surface impoundments), you must separate the incompatible materials, or protect them from one another by using a dike, berm, wall or other device; and
  - (iii) you must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with section 373-2.2(i)(2) of this Subpart.
- (7) Are staging piles subject to land disposal restrictions (LDR) and minimum technological requirements (MTR)? No. Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements of RCRA 3004(o).
- (8) How long may I operate a staging pile? The department may allow a staging pile to operate for up to two years after hazardous remediation waste is first placed into the pile. You must use a staging pile no longer than the length of time designated by the department in the permit, closure plan, or order (the operating term), except as provided in paragraph (9) of this subdivision.
- (9) May I receive an operating extension for a staging pile?



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- (i) The department may grant one operating term extension of up to 180 days beyond the operating term limit contained in the permit, closure plan, or order (see paragraph (12) of this subdivision for modification procedures). To justify to the department the need for an extension, you must provide sufficient and accurate information to enable the department to determine that continued operation of the staging pile:
    - ('a') will not pose a threat to human health and the environment; and
    - ('b') is necessary to ensure timely and efficient implementation of remedial actions at the facility.
  - (ii) The department may, as a condition of the extension, specify further standards and design criteria in the permit, closure plan, or order, as necessary, to ensure protection of human health and the environment.
- (10) What is the closure requirement for a staging pile located in a previously contaminated area?
- (i) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in a previously contaminated area of the site by removing or decontaminating all:
    - ('a') remediation waste;
    - ('b') contaminated containment system components; and
    - ('c') structures and equipment contaminated with waste and leachate.
  - (ii) You must also decontaminate contaminated subsoils in a manner and according to a schedule that the department determines will protect human health and the environment.
  - (iii) The department must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.
- (11) What is the closure requirement for a staging pile located in an uncontaminated area?
- (i) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in an uncontaminated area of the site according to sections 373-2.12(h)(1) and 373-2.7(b) of this Subpart; or according to sections 373-3.12(g)(1) and 373-3.7(b) of this Part.
  - (ii) The department must include the above requirement in the permit, closure plan, or order in which the staging pile is designated.
- (12) How may my existing permit (for example, RAP), closure plan, or order be modified to allow me to use a staging pile?
- (i) To modify a permit, other than a RAP, to incorporate a staging pile or staging pile operating term extension, either:
    - ('a') the department must approve the modification under the procedures for department-initiated permit modifications in section 373-1.7 of this Part; or

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(b') you must request a major permit modification under the section 373-1.7(d) of this Part and Part 621 of this Title.

- (ii) To modify a RAP to incorporate a staging pile or staging pile operating term extension, you must comply with the RAP modification requirements under section 373-1.11(e)(1) of this Part.
- (iii) To modify a closure plan to incorporate a staging pile or staging pile operating term extension, you must follow the applicable requirements under section 373-2.7(c)(3) of this Subpart or 373-3.7(c)(3) of this Part.
- (iv) To modify an order to incorporate a staging pile or staging pile operating term extension, you must follow the terms of the order and the applicable provisions of section 373-1.3(g)(1)(v) or (2)(v) of this Part.

(13) Is information about the staging pile available to the public? The department must document the rationale for designating a staging pile or staging pile operating term extension and make this documentation available to the public.

**(f) Disposal of CAMU-eligible wastes in permitted hazardous waste landfills.**

(1) The department with regulatory oversight at the location where the cleanup is taking place may approve placement of CAMU-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of Part 376 of this Title, if the conditions in subparagraphs (i) through (iii) of this paragraph are met:

- (i) the waste meets the definition of CAMU-eligible waste in subparagraphs (c)(1)(i) and (ii) of this section;
- (ii) the department with regulatory oversight at the location where the cleanup is taking place identifies principal hazardous constituents in such waste, in accordance with clauses (c)(5)(iv)(‘a’) and (‘b’) of this section, and requires that such principal hazardous constituents are treated to any of the following standards specified for CAMU-eligible wastes:
  - (‘a’) the treatment standards under clause (c)(5)(iv)(‘d’) of this section; or
  - (‘b’) treatment standards adjusted in accordance with subclause (c)(5)(iv)(‘e’)(‘1’), (‘3’) or (‘4’) or item (c)(5)(iv)(‘e’)(‘5’)(‘i’) of this section; or
  - (‘c’) treatment standards adjusted in accordance with item (c)(5)(iv)(‘e’)(‘5’)(‘ii’) of this section, where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste, minimizing the short-term and long-term threat posed by the waste, including the threat at the remediation site;
- (iii) the landfill receiving the CAMU-eligible waste must have a RCRA hazardous waste permit, meet the requirements for new landfills in section 373-2.14 of this Subpart, and be authorized

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to accept CAMU-eligible wastes; for the purposes of this requirement, “permit” does not include interim status.

- (2) The person seeking approval shall provide sufficient information to enable the department with regulatory oversight at the location where the cleanup is taking place to approve placement of CAMU-eligible waste in accordance with paragraph (1) of this subdivision. Information required by subparagraphs (c)(4)(i) through (iii) of this section for CAMU applications must be provided, unless not reasonably available.
- (3) The department with regulatory oversight at the location where the cleanup is taking place shall provide public notice and a reasonable opportunity for public comment before approving CAMU eligible waste for placement in an off-site permitted hazardous waste landfill, consistent with the requirements for CAMU approval at paragraph (c)(8) of this section. The approval must be specific to a single remediation.
- (4) Applicable hazardous waste management requirements for CAMU-eligible waste in this Part, including recordkeeping requirements to demonstrate compliance with treatment standards approved under this section, must be incorporated into the receiving facility permit through permit issuance or a permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding section 373-1.6(e) of this Part, a landfill may not receive hazardous CAMU-eligible waste under this section unless its permit specifically authorizes receipt of such waste.
- (5) For each remediation, CAMU-eligible waste may not be placed in an off-site landfill authorized to receive CAMU-eligible waste in accordance with paragraph (4) of this subdivision until the following additional conditions have been met:
  - (i) The landfill owner/operator notifies the department responsible for oversight of the landfill and persons on the facility mailing list, maintained in accordance with section 621.6 of this Title, of his or her intent to receive CAMU-eligible waste in accordance with this subdivision; the notice must identify the source of the remediation waste, the principal hazardous constituents in the waste, and treatment requirements.
  - (ii) Persons on the facility mailing list may provide comments, including objections to the receipt of the CAMU-eligible waste, to the department within 15 days of notification.
  - (iii) The department may object to the placement of the CAMU-eligible waste in the landfill within 30 days of notification; the department may extend the review period an additional 30 days because of public concerns or insufficient information.
  - (iv) CAMU-eligible wastes may not be placed in the landfill until the department has notified the facility owner/operator that the department does not object to its placement.
  - (v) If the department objects to the placement or does not notify the facility owner/operator that the department has chosen not to object, the facility may not receive the waste, notwithstanding section 373-1.6(e) of this Part. until the objection has been resolved. or the owner/operator obtains a permit modification in accordance with the procedures of section

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373-1.7(b) of this Part and section 621.13 of this Title specifically authorizing receipt of the waste.

- (vi) As part of the permit issuance or permit modification process of paragraph (4) of this subdivision, the department may modify, reduce, or eliminate the notification requirements of this paragraph as they apply to specific categories of CAMU-eligible waste, based on minimal risk.
- (6) Generators of CAMU-eligible wastes sent off-site to a hazardous waste landfill under this subdivision must comply with the requirements of section 376.1(g)(1)(iv) of this Title; off-site facilities treating CAMU-eligible wastes to comply with this section must comply with the requirements of section 376.1(g)(2)(iv) of this Title, except that the certification must be with respect to the treatment requirements of subparagraph (1)(ii) of this subdivision.
- (7) For the purposes of this subdivision only, the *'design of the CAMU'* in subclause (c)(5)(iv)(e)(5) of this section means design of the permitted Part 373 landfill.

### Section 373-2.20 — 373-2.22 (Reserved)

### Section 373-2.23 Drip pads.

#### (a) Applicability.

- (1)
  - (i) Except as provided in subparagraph (1)(ii) of this subdivision, the requirements of this section apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before December 6, 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads. The requirement at subparagraph (d)(2)(iii) of this section to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.
  - (ii) For F034 and F035 wastes as defined in section 371.4(b)(1) of this Title, subparagraph (i) of this paragraph applies, except that the referenced dates are revised to January 17, 1995.
- (2) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither runoff nor run-on is generated is not subject to regulation under paragraph (d)(5) or (6) of this section, as appropriate.
- (3) The requirements of this section are not applicable to the management of infrequent and accidental drippage in storage yards provided that:
  - (i) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and

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incidental drippage. At a minimum, the contingency plan must describe how the owner or operator will do the following:

- (a) clean up the drippage;
- (b) document the cleanup of the drippage;
- (c) retain documents regarding cleanup for three years; and
- (d) manage the contaminated media in a manner consistent with Federal and New York State regulations.

#### **(b) Assessment of existing drip pad integrity.**

- (1) For each existing drip pad as defined in subdivision (a) of this section, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of this section, except the requirements for liners and leak detection systems of paragraph (d)(2) of this section. No later than the effective date of these regulations, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified professional engineer registered in New York State that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of subdivision (d) of this section are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards for liners and leak detection systems, specified in paragraph (d)(2) of this section.
- (2) The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of paragraph (d)(2) of this section, and submit the plan to the commissioner no later than two years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of subdivision (d) of this section. The plan must be reviewed and certified by an independent qualified professional engineer registered in New York State.
- (3) Upon completion of all upgrades, repairs, and modifications, the owner or operator must submit to the commissioner, the as-built drawings for the drip pad together with a certification by an independent qualified professional engineer registered in New York State attesting that the drip pad conforms to the drawings.
- (4) If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of paragraph (d)(13) of this section or close the drip pad in accordance with subdivision (f) of this section.

#### **(c) Design and installation of new drip pads.**

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

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- (1) all of the applicable requirements of subdivisions (d) (except subparagraph (d)(1)(iv)), (e) and (f) of this section; or
- (2) all of the applicable requirements of subdivisions (d) (except paragraph (d)(2)), (e) and (f) of this section.

**(d) Design and operating requirements.**

- (1) Drip pads must:
  - (i) be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;
  - (ii) be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;
  - (iii) have a curb or berm around the perimeter;
  - (iv)
    - ('a') have a hydraulic conductivity of less than or equal to  $1 \times 10^{-7}$  centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to  $1 \times 10^{-7}$  centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with paragraph (c)(2) instead of paragraph (c)(1) of this section;
    - ('b') the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified professional engineer registered in New York State that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this subdivision, except for paragraph (2) of this subdivision;
  - (v) be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

**Note:** DEC will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) or the American Society of Testing and Materials (ASTM) in judging the structural integrity requirement of this paragraph.

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- (2) If an owner/operator elects to comply with paragraph (c)(1) instead of paragraph (c)(2) of this section, the drip pad must have:
- (i) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner must be:
    - ('a') constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);
    - ('b') placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and
    - ('c') installed to cover all surrounding earth that could come in contact with the waste or leakage; and
  - (ii) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:
    - ('a') constructed of materials that are:
      - ('1') chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and
      - ('2') of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad;
    - ('b') designed and operated to function without clogging through the scheduled closure of the drip pad; and
    - ('c') designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.
  - (iii) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drippad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.
- (3) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

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**Note:** See paragraph (13) of this subdivision for remedial action required if deterioration or leakage is detected.

- (4) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.
- (5) Unless protected by a structure, as described in paragraph (a)(2) of this section, the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm, unless the system has sufficient excess capacity to contain any run-off that might enter the system.
- (6) Unless protected by a structure or cover as described in paragraph (a)(2) of this section, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.
- (7) The drip pad must be evaluated to determine that it meets the requirements of paragraphs (1) through (6) of this subdivision and the owner or operator must obtain a statement from an independent, qualified professional engineer registered in New York State certifying that the drip pad design meets the requirements of this section.
- (8) Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.
- (9) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials that are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hinderance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner/operator must determine if the residues are hazardous as per section 372.2(a)(2) of this Title and, if so, must manage them under Parts 370 through 374 and Part 376 of this Title and section 3010 of RCRA.
- (10) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.
- (11) After being removed from the treatment vessel, treated wood from pressure and non- pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.
- (12) Collection and holding units associated with run-on and runoff control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.
- (13) Throughout the active life of the drip pad and as specified in the permit, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:



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- (i) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage in the leak detection system), the owner or operator must:
  - ('a') enter a record of the discovery in the facility operating log;
  - ('b') immediately remove the portion of the drip pad affected by the condition from service;
  - ('c') determine what steps must be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs;
  - ('d') within 24 hours after discovery of the condition, notify the commissioner of the condition and, within 10 working days, provide written notice to the commissioner with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.
- (ii) The department will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and cleanup are complete and notify the owner or operator of the determination and the underlying rationale in writing.
- (iii) Upon completing all repairs and cleanup, the owner or operator must notify the department in writing and provide a certification signed by an independent, qualified professional engineer registered in New York State, that the repairs and cleanup have been completed according to the written plan approved by the department in accordance with clause (i)(‘d’) of this paragraph.

- (14) Should a permit be necessary, the commissioner will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this subdivision are satisfied.
- (15) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

#### (e) **Inspections.**

- (1) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of subdivision (d) of this section by an independent qualified professional engineer registered in New York State. This certification must be maintained at the facility as part of the facility operating record. After installation, liner and covers must be inspected to ensure tight seams and joints and the absence or tears, punctures, or blisters.
- (2) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

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- (i) deterioration, malfunctions or improper operation of run-on and runoff control systems;
- (ii) the presence of leakage in and proper functioning of leak detection system; and
- (iii) deterioration or cracking of the drip pad surface.

*Note:* See paragraph (d)(13) of this section for remedial action required if deterioration or leakage is detected.

**(f) Closure.**

- (1) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.
- (2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (1) of this subdivision, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (see section 373-2.14(g) of this Subpart). For permitted units, the requirement to have a permit continues throughout the post-closure period. In addition, for the purpose of closure, post-closure, and financial responsibility, such a drip pad is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in sections 373-2.7 and 373-2.8 of this Subpart.
- (3)
  - (i) The owner or operator of an existing drip pad, as defined in subdivision (a) of this section, that does not comply with the liner requirements of subparagraph (d)(2)(i) of this section must:
    - ('a') include in the closure plan for the drip pad under section 373-2.7(c) of this Subpart both a plan for complying with paragraph (2) of this subdivision in case not all contaminated subsoils can be practicably removed at closure; and
    - ('b') prepare a contingent post-closure plan under section 373-2.7(h) of this Subpart for complying with paragraph (2) of this subdivision in case not all contaminated subsoils can be practicably removed at closure.
  - (ii) The cost estimates calculated under sections 373-2.7(c) and 373-2.8(e) of this Subpart for closure and post-closure care of a drip pad subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (1) of this subdivision.

**Section 373-2.24 Miscellaneous units.****(a) Applicability.**

The requirements in this section apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as section 373-2.1(a) of this Subpart provides otherwise.

**(b) Environmental performance standards.**

A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions must include those requirements of sections 373-2.9 through 373-2.15 and sections 373-2.27 through 373-2.29 of this Subpart, Subpart 373-1 of this Part, and 40 CFR part 63, subpart EEE, as incorporated by reference in and implemented by sections 200.10(a) and (d) of this Title, that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

- (1) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering:
  - (i) the volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;
  - (ii) the hydrologic and geologic characteristics of the unit and the surrounding area;
  - (iii) the existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater;
  - (iv) the quantity and direction of groundwater flow;
  - (v) the proximity to and withdrawal rates of current and potential groundwater users;
  - (vi) the patterns of land use in the region;
  - (vii) the potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;
  - (viii) the potential for health risks caused by human exposure to waste constituents; and
  - (ix) the potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.
- (2) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:
  - (i) the volume and physical and chemical characteristics of the waste in the unit;

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- (ii) the effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;
  - (iii) the hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;
  - (iv) the patterns of precipitation in the region;
  - (v) the quantity, quality, and direction of groundwater flow;
  - (vi) the proximity of the unit to surface waters;
  - (vii) the current and potential uses of nearby surface waters and any water quality standards established for those surface waters;
  - (viii) the existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;
  - (ix) the patterns of land use in the region;
  - (x) the potential for health risks caused by human exposure to waste constituents; and
  - (xi) the potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.
- (3) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:
- (i) the volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;
  - (ii) the effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;
  - (iii) the operating characteristics of the unit;
  - (iv) the atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;
  - (v) the existing quality of the air, including other sources of contamination and their cumulative impact on the air;
  - (vi) the potential for health risks caused by human exposure to waste constituents; and
  - (vii) the potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

**(c) Monitoring, analysis, inspection, response, reporting and corrective action.**

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with sections 373-2.24(b), 373-2.2(g), 373-2.3(d), 373-2.5(e), (f) and (g) and 373-2.6(l)

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of this Subpart as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

#### (d) **Post-closure care.**

A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with subdivision (b) of this section during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils or groundwater that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of subdivision (b) of this section during post-closure care. The post-closure plan under section 373-2.7(h) of this Subpart must specify the procedures that will be used to satisfy this requirement.

### **Section 373-2.25 — 373-2.26 (Reserved)**

### **Section 373-2.27 Air emission standards for process vents.**

#### (a) **Applicability.**

- (1) The regulations in this section apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 373-2.1(a) of this Subpart).
- (2) Except for paragraphs (e)(4) and (5) of this section, this section applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:
  - (i) unit that is subject to the permitting requirements of Subpart 373-1 of this Title; or
  - (ii) a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of section 372.2(a)(8)(ii) of this Title (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Subpart 373-1 of this Part; or
  - (iii) a unit that is exempt from permitting under the provisions of section 372.2(a)(8)(ii) (i.e., a 90-day tank or container) of this Title and is not a recycling unit under the provisions of section 371.1(g) of this Title.
- (3) For the owner and operator of a facility subject to this section and who received a final permit under RCRA section 3005 (see section 370.1(e) of this Title) or Subpart 373-1 of this Part prior to December 6, 1996, the requirements of this section shall be incorporated into the permit when the permit is reissued in accordance with the requirements of section 621.11 of this Title or reviewed in accordance with the requirements of section 373-1.8 of this Part. Until such date when the owner and operator receive a final permit incorporating the requirements of this section, the owner and operator are subject to the requirements of section 373-3.27 of this Part.

**Note:** The requirements of subdivisions (c) through (g) of this section apply to process vents on hazardous waste recycling units previously exempt under section 371.1(g)(3)(i) of this Title. Other

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exemptions under sections 371.1(e) and 373-2.1(a)(6) of this Title are not affected by these requirements.

- (4) The requirements of this section do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this section are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63, as incorporated by reference in section 370.1(e) of this Title. The documentation of compliance under Federal regulations at 40 CFR part 60, part 61, or part 63, as incorporated by reference in section 370.1(e) of this Title, shall be kept with, or made readily available with, the facility operating record.

#### (b) Definitions.

As used in this section, all terms not defined herein shall have the meaning given them in RCRA, the ECL and Parts 370 through 374 of this Title.

- (1) ***'Air stripping operation'*** is a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Packed towers, spray towers, and bubble-cap, sieve, or valve-type plate towers are among the process configurations used for contacting the air and a liquid.
- (2) ***'Bottoms receiver'*** means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.
- (3) ***'Closed-vent system'*** means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.
- (4) ***'Condenser'*** means a heat transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.
- (5) ***'Connector'*** means the flanged, screwed, welded, or other jointed fittings used to connect two pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, ***'connector'*** means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.
- (6) ***'Continuous recorder'*** means a data-recording device recording an instantaneous data value at least once every 15 minutes.
- (7) ***'Control device'*** means an enclosed combustion device, vapor recovery system, or flare. Any device the primary function of which is the recovery or capture of solvents or other organics for use, reuse, or sale (e.g., a primary condenser on a solvent recovery unit) is not a control device.
- (8) ***'Control device shutdown'*** means the cessation of operation of a control device for any purpose.

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- (9) ***'Distillate receiver'*** means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.
- (10) ***'Distillation operation'*** means an operation, either batch or continuous, separating one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.
- (11) ***'Double block and bleed system'*** means two block valves connected in a series with a bleed valve or line that can vent the line between the two block valves.
- (12) ***'Equipment'*** means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this section.
- (13) ***'Flame zone'*** means the portion of the combustion chamber in a boiler occupied by the flame envelope.
- (14) ***'Flow indicator'*** means a device that indicates whether gas flow is present in a vent stream.
- (15) ***'First attempt at repair'*** means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.
- (16) ***'Fractionation operation'*** means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.
- (17) ***'Hazardous waste management unit shutdown'*** means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit.
- (18) ***'Hot well'*** means a container for collecting condensate as in a steam condenser serving a vacuum-jet or steam-jet ejector.
- (19) ***'In gas/vapor service'*** means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.
- (20) ***'In heavy liquid service'*** means that the piece of equipment is not in gas/vapor service or in light liquid service.
- (21) ***'In light liquid service'*** means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kilopascals (kPa) at 20°C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kilopascals (kPa) at 20°C is equal to or greater than 20 percent by weight, and the fluid is a liquid at operating conditions.
- (22) ***'In situ sampling systems'*** means nonextractive samplers or in-line samplers.

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- (23) ***'In vacuum service'*** means that equipment is operating at an internal pressure that is at least 5 kPa below ambient pressure.
- (24) ***'Malfunction'*** means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.
- (25) ***'Open-ended valve or line'*** means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping.
- (26) ***'Pressure release'*** means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.
- (27) ***'Process heater'*** means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.
- (28) ***'Process vent'*** means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.
- (29) ***'Repaired'*** means that equipment is adjusted, or otherwise altered, to eliminate a leak.
- (30) ***'Sampling connection system'*** means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.
- (31) ***'Sensor'*** means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.
- (32) ***'Separator tank'*** means a device used for separation of two immiscible liquids.
- (33) ***'Solvent extraction operation'*** means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.
- (34) ***'Startup'*** means the setting in operation of a hazardous waste management unit or control device for any purpose.
- (35) ***'Steam stripping operation'*** means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.
- (36) ***'Surge control tank'*** means a large-sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.



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- (37) ***‘Thin-film evaporation operation’*** means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.
- (38) ***‘Vapor incinerator’*** means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.
- (39) ***‘Vented’*** means discharged through an opening, typically an open-ended pipe or stack, allowing the passage of a stream of liquids, gases or fumes into the atmosphere. The passage of liquids, gases, or fumes is caused by mechanical means such as compressors or vacuum- producing systems or by process-related means such as evaporation produced by heating and not caused by tank loading and unloading (working losses) or by natural means such as diurnal temperature changes.

**(c) Standards: process vents.**

- (1) The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw shall either:
  - (i) reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr); or
  - (ii) reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.
- (2) If the owner or operator installs a closed-vent system and control device to comply with the provisions of paragraph (1) of this subdivision the closed-vent system and control device must meet the requirements of subdivision (d) of this section.
- (3) Determinations of vent emissions and emissions reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of paragraph (e)(3) of this section.
- (4) When an owner or operator and the commissioner do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the procedures in paragraph (e)(3) of this section shall be used to resolve the disagreement.

**(d) Standards: closed-vent systems and control devices.**

- (1)
  - (i) Owners or operators of closed-vent systems and control devices used to comply with provisions of this Subpart shall comply with the provisions of this subdivision.

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(ii)

- (a) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this section on the effective date that the facility becomes subject to the provisions of this section must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this section for installation and startup.
- (b) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this section when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.
- (c)
  - (1) If an existing facility is already subject to 40 CFR 264.1033(a)(2)(iii) at the time a State statutory or regulatory amendment renders the facility subject to this section, the requirements established under 40 CFR 264.1033(a)(2)(iii), as incorporated by reference in section 370.1(e) of this Title, will apply.
  - (2) If an existing facility is not subject to 40 CFR 264.1033(a)(2)(iii) at the time a State statutory or regulatory amendment renders the facility subject to this section, the owner or operator of the facility in existence on the effective date of the State statutory or regulatory amendment that renders the facility subject to this section, shall comply with all requirements of this section, as soon as practicable but no later than 30 months after the State amendment's effective date. When control equipment required by this section can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this section. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.
- (d) Owners and operators of facilities and units that become newly subject to the requirements of this section after December 8, 1997, due to an action other than those described in clause (c) of this subparagraph must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this section; the 30-month implementation schedule does not apply).

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- (2) A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of subparagraph (c)(1)(i) of this section for all affected process vents can be attained at an efficiency less than 95 weight percent.
- (3) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to three percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.
- (4)
  - (i) A flare shall be designed for and operated with no visible emissions, as determined by the methods specified in subparagraph (5)(i) of this subdivision, except for periods not to exceed a total of five minutes during any two consecutive hours.
  - (ii) A flare shall be operated with a flame present at all times, as determined by the methods specified in clause (6)(ii)(‘c’) of this subdivision.
  - (iii) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in subparagraph (5)(ii) of this subdivision.
  - (iv)
    - (‘a’) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in subparagraph (5)(iii) of this subdivision, less than 18.3 m/s (60 ft/s), except as provided in clauses (4)(iv)(‘b’) and (‘c’) of this subdivision.
    - (‘b’) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subparagraph (5)(iii) of this subdivision, equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
    - (‘c’) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subparagraph (5)(iii) of this subdivision, less than the velocity,  $V_{\max}$ , as determined by the method specified in subparagraph (5)(iv) of this subdivision and less than 122 m/s (400 ft/s) is allowed.

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- (v) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity,  $V_{\max}$ , as determined by the method specified in subparagraph (5)(v) of this subdivision.
- (vi) A flare used to comply with this subdivision shall be steam-assisted, air-assisted, or nonassisted.

(5)

- (i) Reference Method 22 in 40 CFR Part 60 (see section 370.1(e) of this Title) shall be used to determine the compliance of a flare with the visible emission provisions of this section. The observation period is two hours and shall be used according to Method 22.
- (ii) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_t = K \times (\text{summation}_{(i=1 \text{ to } n)}(C_i \times H_i))$$

where:

$H_t$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mol of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mol is 20°C;

$K$  = Constant,  $1.74 \times 10^{-7}$  (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20°C;

$C_i$  = Concentration of sample component  $i$  in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR part 60 (see section 370.1(e) of this Title) and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in section 370.1(e) of this Title); and

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/g mol at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (incorporated by reference as specified in section 370.1(e) of this Title) if published values are not available or cannot be calculated.

- (iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D in 40 CFR part 60 (see section 370.1(e) of this Title) as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.
- (iv) The maximum allowed velocity in m/s,  $V_{\max}$ , for a flare complying with clause (4)(iv)(‘c’) of this subdivision shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max}) = (H_t + 28.8) / 31.7$$

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where:

28.8 = Constant,

31.7 = Constant,

$H_t$  = The net heating value as determined in subparagraph (ii) of this paragraph.

- (v) The maximum allowed velocity in m/s,  $V_{max}$ , for an air-assisted flare shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084 (H_t)$$

where:

8.706 = Constant,

0.7084 = Constant,

$H_t$  = The net heating value as determined in subparagraph (ii) of this paragraph.

- (6) The owner or operator shall monitor and inspect each control device required to comply with this subdivision to ensure proper operation and maintenance of the control device by implementing the following requirements:
- (i) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet but before the point at which the vent streams are combined.
  - (ii) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device to continuously monitor control device operation as specified below:
    - ('a') For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in degrees Celsius or  $\pm 0.5^\circ\text{C}$ , whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.
    - ('b') For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of  $\pm 1$  percent of the temperature being monitored in degrees Celsius or  $\pm 0.5^\circ\text{C}$ , whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.
    - ('c') For a flare, a heat sensing monitoring device equipped with a continuous recorder that

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indicates the continuous ignition of the pilot flame.

- (d) For a boiler or a process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in degrees Celsius or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.
- (e) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.
- (f) For a condenser, either:
  - (1) a monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser; or
  - (2) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of  $\pm 1$  percent of the temperature being monitored in degrees Celsius ( $^{\circ}\text{C}$ ) or  $\pm 0.5^{\circ}\text{C}$ , whichever is greater. The one temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).
- (g) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:
  - (1) a monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed; or
  - (2) a monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.
- (iii) Inspect the readings from each monitoring device required by subparagraphs (i) and (ii) of this paragraph at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this subdivision.
- (7) An owner or operator using a carbon adsorption system, such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device, shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of subclause (f)(2)(iv)(c)(6) of this section.
- (8) An owner or operator using a carbon adsorption system, such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, shall replace the existing carbon in

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the control device with fresh carbon on a regular basis by using one of the following procedures:

- (i) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule, and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of subclause (f)(2)(iv)(‘c’)(‘7’) of this section, whichever is longer.
  - (ii) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of subclause (f)(2)(iv)(‘c’)(‘7’) of this section.
- (9) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device’s design specifications.
- (10) An owner or operator of an affected facility seeking to comply with the provisions of this Subpart by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.
- (11) A closed-vent system shall meet either of the following design requirements:
- (i) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in paragraph (e)(2) of this section, and by visual inspections.
  - (ii) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.
- (12) The owner or operator shall monitor and inspect each closed-vent system required to comply with this subdivision to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:
- (i) Each closed-vent system that is used to comply with subparagraph (11)(i) of this subdivision shall be inspected and monitored in accordance with the following requirements:
    - (‘a’) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this subdivision. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in paragraph (e)(2) of this section to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

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- (b) After initial leak detection monitoring required in clause ('a') of this subparagraph, the owner or operator shall inspect and monitor the closed-vent system as follows:
  - (1) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in paragraph (e)(2) of this section to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).
  - (2) Closed-vent system components or connections other than those specified in subclause ('1') of this clause shall be monitored annually and at other times as requested by the commissioner, except as provided for in paragraph (15) of this subdivision, using the procedures specified in paragraph (e)(2) of this section to demonstrate that the components or connections operate with no detectable emissions.
- (c) In event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of subparagraph (iii) of this paragraph.
- (d) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subdivision (f) of this section.
- (ii) Each closed-vent system that is used to comply with subparagraph (11)(ii) of this subdivision shall be inspected and monitored in accordance with the following requirements:
  - (a) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.
  - (b) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year.
  - (c) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of subparagraph (iii) of this paragraph.
  - (d) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subdivision (f) of this section.
- (iii) The owner or operator shall repair all detected defects as follows:
  - (a) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but



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not later than 15 calendar days after the emission is detected, except as provided for in clause ('c') of this subparagraph.

- (b) A first attempt at repair shall be made no later than five calendar days after the emission is detected.
  - (c) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.
  - (d) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in subdivision (f) of this section.
- (13) Closed-vent systems and control devices used to comply with provisions of this section shall be operated at all times when emissions may be vented to them.
- (14) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:
- (i) Regenerated or reactivated in a thermal treatment unit that meets one of the following:
    - (a) the owner or operator of the unit has been issued a final permit under Subpart 373-1 of this Part which implements the requirements of section 373-2.24 of this Subpart or for a unit not located in New York State, under authority from 40 CFR part 270 which implements the requirements of 40 CFR 264 subpart X, or equivalent authority; or
    - (b) the unit is equipped with and operating air emission controls in accordance with the applicable requirements of this section and section 373-2.29 of this Subpart or of sections 373-3.27 and 373-3.29 of this Part; or
    - (c) the unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63 as incorporated by reference in section 370.1(e) of this Title.
  - (ii) Incinerated in a hazardous waste incinerator for which the owner or operator either:
    - (a) has been issued a final permit under Subpart 373-1 of this Title which implements the requirements of section 373-2.15 of this Subpart or for a unit not located in New York State, under authority from 40 CFR part 270 which implements the requirements of 40 CFR 264 subpart X, or equivalent authority; or
    - (b) has designed and operates the incinerator in accordance with the interim status requirements of section 373-3.15 of this Title.

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- (iii) Burned in a boiler or industrial furnace for which the owner or operator either:
  - ('a') has been issued a final permit under Subpart 373-1 of this Title, which implements the requirements of section 374-1.8 of this Title or for a unit not located in New York State, under authority from 40 CFR part 270 which implements the requirements of 40 CFR 264 subpart X, or equivalent authority; or
  - ('b') has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of section 374-1.8 of this Title.

(15) Any components of a closed-vent system that are designated, as described in subparagraph (f)(3)(ix) of this section, as unsafe to monitor are exempt from the requirements of subclause (12)(i)(‘b’)(‘2’) of this subdivision if:

- (i) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with subclause (12)(i)(‘b’)(‘2’) of this subdivision.
- (ii) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in subclause (12)(i)(‘b’)(‘2’) of this subdivision as frequently as practicable during safe-to-monitor times.

**(e) Test methods and procedures.**

- (1) Each owner or operator subject to the provisions of this section shall comply with the test methods and procedures requirements provided in this subdivision.
- (2) When a closed-vent system is tested for compliance with no detectable emissions, as required in paragraph (d)(12) of this section, the test shall comply with the following requirements:
  - (i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60 (see section 370.1(e) of this Title).
  - (ii) The detection instrument shall meet the performance criteria of Reference Method 21.
  - (iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.
  - (iv) Calibration gases shall be:
    - ('a') zero air (less than 10 ppm of hydrocarbon in air);
    - ('b') a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
  - (v) The background level shall be determined as set forth in Reference Method 21.
  - (vi) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

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- (vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- (3) Performance tests to determine compliance with paragraph (c)(1) of this section and with the total organic compound concentration limit of paragraph (d)(3) of this section shall comply with the following:
- (i) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:
- (a) Method 2 in 40 CFR part 60 (see section 370.1(e) of this Title) for velocity and volumetric flow rate.
- (b) Method 18 or Method 25A in 40 CFR part 60 (see section 370.1(e) of this Title) for organic content. If Method 25A is used, the organic HAP used as the calibration gas must be the single organic HAP representing the largest percent by volume of the emissions. The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.
- (c) Each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.
- (d) Total organic mass flow rates shall be determined by the following equation:
- (1) For sources utilizing Method 18.

$$E_h = Q_{2sd} \times (\text{summation}_{\{i=1 \text{ to } n\}} (C_i MW_i)) \times (0.0416) \times (10^{-6}) \text{ where:}$$

$E_h$  = Total organic mass flow rate, kg/h;

$Q_{2sd}$  = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

$n$  = Number of organic compounds in the vent gas;

$C_i$  = Organic concentration in ppm, dry basis, of compound I in the vent gas, as determined by Method 18;

$MW_i$  = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kg-mol/m<sup>3</sup> (at 293 K and 760 mm Hg);

10<sup>-6</sup> = Conversion from ppm.

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(2') For sources utilizing Method 25A.

$$E_h = (Q)(C)(MW)(0.0416)(10^{-6})$$

where:

$E_h$  = Total organic mass flow rate, kg/h;

$Q$  = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

$C$  = Organic concentration in ppm, dry basis, as determined by Method 25A;

$MW$  = Molecular weight of propane, 44;

0.0416 = conversion factor for molar volume, kg-mol/m<sup>3</sup> (at 293 K and 760 mm Hg);

$10^{-6}$  = Conversion from ppm.

(e') The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h) (H)$$

where:

$E_A$  = Total organic mass emission rate, kg/y;

$E_h$  = Total organic mass flow rate for the process vent, kg/h;

$H$  = Total annual hours of operations for the affected unit, h.

(f') Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates ( $E_h$  as determined in clause (i)(d') of this paragraph) and by summing the annual total organic mass emission rates ( $E_A$ , as determined in clause (i)(e') of this paragraph) for all affected process vents at the facility.

(ii) The owner or operator of an affected facility shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(iii) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(a') Sampling ports adequate for the test methods specified in subparagraph (i) of this paragraph.

(b') Safe sampling platform(s).

(c') Safe access to sampling platform(s).

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- (d') Utilities for sampling and testing equipment.
- (iv) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner's or operator's control, compliance may, upon the commissioner's approval, be determined using the average of the results of the two other runs.
- (4) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or stream stripping operation is not subject to the requirements of this section, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:
- (i) Direct measurement of the organic concentration of the waste using the following procedures:
- (a') The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.
- (b') For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.
- (c') Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060A of SW-846 (incorporated by reference under section 370.1(e) of this Title), or analyzed for its individual organic constituents.
- (d') The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.
- (ii) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has

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previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

- (5) The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted, annual average total organic concentrations less than 10 ppmw shall be made as follows:
  - (i) by the effective date that the facility becomes subject to the provisions of this section or by the date when the waste is first managed in a waste management unit, whichever is later; and
  - (ii) for continuously generated waste, annually; or
  - (iii) whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.
- (6) When an owner or operator and the department do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the dispute may be resolved by using direct measurement as specified at subparagraph (4)(i) of this subdivision.

**(f) Recordkeeping requirements.**

- (1)
  - (i) Each owner or operator subject to the provisions of this section shall comply with the recordkeeping requirements of this subdivision.
  - (ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this section may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.
- (2) Owners and operators must record the following information in the facility operating record:
  - (i) For facilities that comply with the provisions of subparagraph (d)(1)(ii) of this section, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this section.
  - (ii) Up-to-date documentation of compliance with the process vent standards in subdivision (c) of this section, including:
    - (a) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan).

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- (b') Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates, or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.
- (iii) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:
  - (a') A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.
  - (b') A detailed engineering description of the closed-vent system and control device including:
    - (1') manufacturer's name and model number of control device;
    - (2') type of control device;
    - (3') dimensions of the control device;
    - (4') capacity; and
    - (5') construction materials.
  - (c') A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.
- (iv) Documentation of compliance with subdivision (d) of this section shall include the following information:
  - (a') A list of all information references and sources used in preparing the documentation.
  - (b') Records, including the dates, of each compliance test required by paragraph (d)(11) of this section.
  - (c') If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" (incorporated by reference as specified in section 370.1(e) of this Title) or other engineering texts acceptable to the commissioner that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with subclauses (2)(iv)(c')(1') through (7') of this subdivision

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may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as specified below.

- (1') For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.
- (2') For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
- (3') For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.
- (4') For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in paragraph (d)(4) of this section.
- (5') For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.
- (6') For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total stream flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.
- (7') For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.



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- (d) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.
  - (e) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit of paragraph (c)(1) of this section is achieved at an efficiency less than 95 weight percent or the total organic emission limits of paragraph (c)(1) of this section for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.
  - (f) If performance tests are used to demonstrate compliance, all test results.
- (3) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of this Subpart shall be recorded and kept up-to-date in the facility operating record. The information shall include:
- (i) Description and date of each modification that is made to the closed-vent system or control device design.
  - (ii) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations use to comply with subparagraphs (d)(6)(i) and (ii) of this section.
  - (iii) Monitoring, operating, and inspection information required by paragraphs (d)(6) through (11) of this section.
  - (iv) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:
    - (a) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 second at a minimum temperature of 760°C, the period when the combustion temperature is below 760°C.
    - (b) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 weight percent or greater, the period when the combustion zone temperature is more than 28°C below the design average combustion zone temperature established as a requirement of subclause (2)(iv)(c)(1) of this subdivision.
    - (c) For a catalytic vapor incinerator, period when:
      - (1) temperature of the vent stream at the catalyst bed inlet is more than 28°C below the average temperature of the inlet vent stream established as a requirement of subclause (2)(iv)(c)(2) of this subdivision; or
      - (2) temperature difference across the catalyst bed is less than 80 percent of the design average temperature difference established as a requirement of subclause (2)(iv)(c)(2) of this subdivision.
    - (d) For a boiler or process heater, period when:

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- (1') flame zone temperature is more than 28°C below the design average flame zone temperature established as a requirement of subclause (2)(iv)(c)(3') of this subdivision; or
  - (2') position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of subclause (2)(iv)(c)(3') of this subdivision.
- (e') For a flare, period when the pilot flame is not ignited.
- (f') For a condenser that complies with subclause (d)(6)(ii)(f)(1') of this section, period when the organic compound concentration level or readings of organic compounds in the exhaust vent system from the condenser are more than 20 percent greater than the design outlet organic compound concentration level established as a requirement of subclause (2)(iv)(c)(5') of this subdivision.
- (g') For a condenser that complies with subclause (d)(6)(ii)(f)(2') of this section, period when:
- (1') temperature of the exhaust vent stream from the condenser is more than 6°C above the design average exhaust vent stream temperature established as a requirement of subclause (2)(iv)(c)(5') of this subdivision; or
  - (2') temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature established as a requirement of subclause (2)(iv)(c)(5') of this subdivision.
- (h') For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subclause (d)(6)(ii)(g)(1') of this section, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20 percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of subclause (2)(iv)(c)(6') of this subdivision.
- (i') For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subclause (d)(6)(ii)(g)(2') of this section, period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of subclause (2)(iv)(c)(6') of this subdivision.
- (v) Explanation for each period recorded under subparagraph (iv) of this paragraph of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.
- (vi) For a carbon adsorption system operated subject to requirements specified in paragraph (d)(7) or subparagraph (d)(8)(ii) of this section, date when existing carbon in the control device is replaced with fresh carbon.
- (vii) For a carbon adsorption system operated subject to requirements specified in subparagraph (d)(8)(i) of this section, a log that records:
- (a) date and time when control device is monitored for carbon breakthrough and the monitoring device reading;

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(b) date when existing carbon in the control device is replaced with fresh carbon.

(viii) Date of each control device startup and shutdown.

(ix) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to paragraph (d)(15) of this section shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of paragraph (d)(15) of this section, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

(x) When each leak is detected as specified in paragraph (d)(12) of this section, the following information shall be recorded:

(a) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(b) The date the leak was detected and the date of first attempt to repair the leak.

(c) The date of successful repair of the leak.

(d) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A, as incorporated by reference in section 370.1(e) of this Title, after it is successfully repaired or determined to be nonrepairable.

(e) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(1) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(2) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(4) Records of the monitoring, operating, and inspection information required by subparagraphs (3)(iii) through (x) of this subdivision shall be maintained by the owner or operator for at least three years following the date of each occurrence, measurement, maintenance, corrective action, or record.

(5) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the commissioner will specify the appropriate recordkeeping requirements.

(6) Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in subdivision (c) of this section including supporting documentation as required by subparagraph (e)(4)(ii) of this section when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record.

#### **(g) Reporting requirements.**

(1) A semiannual report shall be submitted by owners and operators subject to the requirements of this section to the commissioner by dates specified by the commissioner. The report shall include the following information:

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- (i) The Environmental Protection Agency identification number, name and address of the facility.
  - (ii) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in subparagraph (f)(3)(iv) of this section and as indicated by the control device monitoring required by paragraph (d)(6) of this section and such exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in paragraph (d)(4) of this section and as determined by Reference Method 22 in 40 CFR part 60 (see section 370.1(e) of this Title) monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.
- (2) If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in subparagraph (f)(3)(iv) of this section for more than 24 hours or a flare does not operate with visible emissions as defined in paragraph (d)(4) of this section, a report to the commissioner is not required.

### **Section 373-2.28 Air emission standards for equipment leaks**

#### **(a) Applicability.**

- (1) The regulations in this section apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in section 373-2.1(a) of this Subpart).
- (2) Except as provided in paragraph (o)(11) of this section, this section applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:
  - (i) a unit that is subject to the permitting requirements of Subpart 373-1 of this Part; or
  - (ii) a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of section 372.2(a)(8)(ii) of this Title (i.e., a hazardous waste recycling unit that is not a “90-day” tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Subpart 373-1 of this Part; or
  - (iii) a unit that is exempt from permitting under the provisions of section 372.2(a)(8)(ii) of this Title (i.e., a “90-day” tank or container) and is not a recycling unit under the provisions of section 371.1(g) of this Title.
- (3) For the owner or operator of a facility subject to this section and who received a final permit under section 3005 of RCRA or Subpart 373-1 of this Part prior to December 6, 1996, the requirements of this section shall be incorporated into the permit when the permit is reissued in accordance with the requirements of section 621.11 of this Title or reviewed in accordance with the requirements of section 373-1.8 of this Part. Until such date when the owner or operator receives a final permit incorporating the requirements of this section, the owner or operator is subject to the requirements of section 373-3.28 of this Part.
- (4) Each piece of equipment to which this section applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.
- (5) Equipment that is in vacuum service is excluded from the requirements of subdivisions (c) through (k) of this section if it is identified as required in subparagraph (o)(7)(v) of this section.

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- (6) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of subdivisions (c) through (k) of this section if it is identified as required in subparagraph (o)(7)(vi) of this section.
- (7) Purged coatings and solvents from surface coating operations subject to the national emission standards for hazardous air pollutants (NESHAP) for the surface coating of automobiles and light-duty trucks at 40 CFR part 63, subpart III, as incorporated by reference in section 200.10 of this Title, are not subject to the requirements of this section.

**Note:** The requirements of subdivisions (c) through (p) of this section apply to equipment associated with hazardous waste recycling units previously exempt under section 371.1(g)(3)(i) of this Title. Other exemptions under sections 371.1(e) and 373-2.1(a)(6) of this Subpart are not affected by these requirements.

#### (b) Definitions.

As used in this section all terms shall have the meaning given them in section 373-2.27(b) of this Subpart, RCRA, the ECL, and Parts 370 through 374 of this Title.

#### (c) Standards: pumps in light liquid service.

- (1)
  - (i) each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in paragraph (n)(2) of this section, except as provided in paragraphs (4) through (6) of this subdivision.
  - (ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- (2)
  - (i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
  - (ii) If there are indications of liquids dripping from the pump seal, a leak is detected.
- (3)
  - (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subdivision (j) of this section.
  - (ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than five calendar days after each leak is detected.
- (4) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (1) of this subdivision, provided the following requirements are met:
  - (i) Each dual mechanical seal system must be:
    - ('a') operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
    - ('b') equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to control a device that complies with the requirements of subdivision (k) of this section; or
    - ('c') equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

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- (ii) The barrier fluid system must not be a hazardous waste with organic concentrations 10 percent or greater by weight.
- (iii) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- (iv) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
- (v)
  - ('a') Each sensor as described in subparagraph (4)(iii) of this subdivision must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.
  - ('b') The owner or operator must determine, based on design considerations and operation experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (vi)
  - ('a') If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in clause (v)(‘b’) of this paragraph, a leak is detected.
  - ('b') When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subdivision (j) of this section.
  - ('c') A first attempt at repair (e.g., relapping the seal) shall be made no later than five calendar days after each leak is detected.
- (5) Any pump that is designated, as described in subparagraph (o)(7)(ii) of this section, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (1), (3) and (4) of this subdivision if the pump meets the following requirements:
  - (i) must have no externally actuated shaft penetrating the pump housing;
  - (ii) must operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in paragraph (n)(3) of this section; and
  - (iii) must be tested for compliance with subparagraph (ii) of this paragraph initially upon designation, annually, and at other times as requested by the commissioner.
- (6) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of subdivision (k) of this section, it is exempt from the requirements of paragraphs (1) through (5) of this subdivision.

**(d) Standards: compressors.**

- (1) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in paragraphs (8) and (9) of this subdivision.
- (2) Each compressor seal system as required in paragraph (1) of this subdivision shall be:
  - (i) operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure; or

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- (ii) equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of subdivision (k) of this section; or
  - (iii) equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.
- (3) The barrier fluid must not be a hazardous waste with organic concentrations 10 percent or greater by weight.
- (4) Each barrier fluid system, as described in paragraphs (1) through (3) of this subdivision, shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- (5)
- (i) Each sensor required in paragraph (4) of this subdivision shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.
  - (ii) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (6) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under subparagraph (5)(ii) of this subdivision, a leak is detected.
- (7)
- (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subdivision (j) of this section.
  - (ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than five calendar days after each leak is detected.
- (8) A compressor is exempt from the requirements of paragraphs (1) and (2) of this subdivision if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of subdivision (k) of this section, except as provided in paragraph (9) of this subdivision.
- (9) Any compressor that is designated, as described in subparagraph (o)(7)(ii) of this section, for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of paragraphs (1) through (8) of this subdivision if the compressor:
- (i) is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in paragraph (n)(3) of this section; and
  - (ii) is tested for compliance with subparagraph (i) of this paragraph initially upon designation, annually, and at other times as requested by the commissioner.
- (e) Standards: pressure relief devices in gas/vapor service.**
- (1) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in paragraph (n)(3) of this section.
- (2)
- (i) After each pressure release, the pressure relief device shall be returned to a condition of no

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detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than five calendar days after each pressure release, except as provided in subdivision (j) of this section.

- (ii) No later than five calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in paragraph (n)(3) of this section.
- (3) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in subdivision (k) of this section is exempt from the requirements of paragraphs (1) and (2) of this subdivision.

#### **(f) Standards: sampling connecting systems.**

- (1) Each sampling connection system shall be equipped with a closed-purge, closed-loop or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.
- (2) Each closed-purge, closed-loop or closed-vent system as required in paragraph (1) of this subdivision shall meet one of the following requirements:
  - (i) return the purged process fluid directly to the process line;
  - (ii) collect and recycle the purged process fluid; or
  - (iii) be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of section 373-2.29(e) through (g) of this Subpart or a control device that complies with the requirements of subdivision (k) of this section.
- (3) "In situ" sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (1) and (2) of this subdivision.

#### **(g) Standards: open-ended valves or lines.**

- (1)
  - (i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
  - (ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.
- (2) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.
- (3) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (1) of this subdivision at all other times.

#### **(h) Standards: valves in gas/vapor service or in light liquid service.**

- (1) Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in paragraph (n)(2) of this section and shall comply with paragraphs (2) through (5) of this subdivision, except as provided in paragraphs (6), (7) and (8) of this subdivision, and subdivisions (l) and (m) of this section.



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- (2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (3)
  - (i) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.
  - (ii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months,
- (4)
  - (i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in subdivision (j) of this section.
  - (ii) A first attempt at repair shall be made no later than five calendar days after each leak is detected.
- (5) First attempts at repair include, but are not limited to, the following best practices where practicable:
  - (i) tightening of bonnet bolts;
  - (ii) replacement of bonnet bolts;
  - (iii) tightening of packing gland nuts; and
  - (iv) injection of lubricant into lubricated packing.
- (6) Any valve that is designated, as described in subparagraph (o)(7)(ii) of this section, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (1) of this subdivision if the valve:
  - (i) has no external actuating mechanism in contact with the hazardous waste stream;
  - (ii) is operated with emissions less than 500 ppm above background as determined by the method specified in paragraph (n)(3) of this section; and
  - (iii) is tested for compliance with subparagraph (ii) of this paragraph initially upon designation, annually, and at other times as requested by the commissioner.
- (7) Any valve that is designated, as described in subparagraph (o)(8)(i) of this section, as an unsafe-to-monitor valve is exempt from the requirements of paragraph (1) of this subdivision if:
  - (i) the owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (1) of this subdivision; and
  - (ii) the owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.
- (8) Any valve that is designated, as described in subparagraph (o)(8)(ii) of this section, as a difficult-to-monitor valve is exempt from the requirements of paragraph (1) of this subdivision if:
  - (i) the owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than two meters above a support surface;
  - (ii) the hazardous waste management unit within which the valve is located was in operation before June 21, 1990; and
  - (iii) the owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

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**(i) Standards: pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.**

- (1) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within five days by the method specified in paragraph (n)(2) of this section, if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.
- (2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (3)
  - (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subdivision (j) of this section.
  - (ii) The first attempt at repair shall be made no later than five calendar days after each leak is detected.
- (4) First attempts at repair include, but are not limited to, the best practices described under paragraph (h)(5) of this section.
- (5) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of paragraph (1) of this subdivision and from the recordkeeping requirements of subdivision (o) of this section.

**(j) Standards: delay of repair.**

- (1) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.
- (2) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10 percent by weight.
- (3) Delay of repair for valves will be allowed if:
  - (i) the owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair; and
  - (ii) when repair procedures are affected, the purged material is collected and destroyed or recovered in a control device complying with subdivision (k) of this section.
- (4) Delay of repair for pumps will be allowed if:
  - (i) repair requires the use of a dual mechanical seal system that includes a barrier fluid system; and
  - (ii) repair is completed as soon as practicable, but not later than six months after the leak was detected.
- (5) Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than six months after the first hazardous waste management unit shutdown.

**(k) Standards: closed-vent systems and control devices.**

- (1) Owners and operators of closed-vent systems and control devices subject to this section shall comply with the provisions of section 373-2.27(d) of this Subpart.
- (2)
  - (i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this section on the effective date that the facility becomes subject to the provisions of this section must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30-months after the effective date that the facility become subject to this section for installation and startup.
  - (ii) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this section when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.
  - (iii)
    - ('a') If an existing facility is already subject to 40 CFR 264.1033(a)(2)(iii) at the time a State statutory or regulatory amendment renders the facility subject to this section, the requirements established under 40 CFR 264.1033(a)(2)(iii), as incorporated by reference in section 370.1(e) of this Title, will apply.
    - ('b') If an existing facility is not subject to 40 CFR 264.1033(a)(2)(iii) at the time a State statutory or regulatory amendment renders the facility subject to this section, the owner or operator of the facility in existence on the effective date of the State statutory or regulatory amendment that renders the facility subject to this section shall comply with all requirements of this section as soon as practicable but no later than 30 months after the State amendments's effective date. When control equipment required by this section can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this section. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.
  - (iv) Owners and operators of facilities and units that become newly subject to the requirements of this section after December 8, 1997, due to an action other than those described in subparagraph (iii) of this paragraph must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit become subject to this section; the 30-month implementation schedule does not apply.)

- (l) Alternative standards for valves in gas/vapor service or in light liquid service: percentage of valves allowed to leak.**
- (1) An owner or operator subject to the requirements of subdivision (h) of this section may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than two percent of the valves to leak.
  - (2) The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing two percent of valves to leak:
    - (i) A performance test, as specified in paragraph (3) of this subdivision, shall be conducted initially upon designation, annually, and at other times requested by the department.
    - (ii) If a valve leak is detected, it shall be repaired in accordance with paragraphs (h)(4) and (5) of this section.
  - (3) Performance tests shall be conducted in the following manner:
    - (i) All valves subject to the requirements in subdivision (h) of this section within the hazardous waste management unit shall be monitored within one week by the methods specified in paragraph (n)(2) of this section.
    - (ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
    - (iii) The leak percentage shall be determined by dividing the number of valves subject to the requirements in subdivision (h) of this section for which leaks are detected by the total number of valves subject to the requirements in subdivision (h) of this section within the hazardous waste management unit.
- (m) Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair.**
- (1) An owner or operator subject to the requirements of subdivision (h) of this section may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in subparagraphs (2)(ii) and (iii) of this subdivision.
  - (2)
    - (i) An owner or operator shall comply with the requirements for valves, as described in subdivision (h) of this section, except as described in subparagraphs (ii) and (iii) of this paragraph.
    - (ii) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in subdivision (h) of this section.
    - (iii) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than two percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in subdivision (h) of this section.
    - (iv) If the percentage of valves leaking is greater than two percent, the owner or operator shall monitor monthly in compliance with the requirements in subdivision (h) of this section, but may again elect to use this subdivision after meeting the requirements of subparagraph (h)(3)(i) of this section.

**(n) Test methods and procedures.**

- (1) Each owner or operator subject to the provisions of this section shall comply with the test methods and procedures requirements provided in this subdivision.
- (2) Leak detection monitoring, as required in subdivisions (c) through (m) of this section, shall comply with the following requirements:
  - (i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60 (see section 370.1(e) of this Title).
  - (ii) The detection instrument shall meet the performance criteria of Reference Method 21.
  - (iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.
  - (iv) Calibration gases shall be:
    - ('a') zero air (less than 10 ppm of hydrocarbon in air);
    - ('b') a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
  - (v) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.
- (3) When equipment is tested for compliance with no detectable emissions, as required in paragraphs (c)(5) and (d)(9), subdivision (e), and paragraph (h)(6) of this section, the test shall comply with the following requirements:
  - (i) The requirements of subparagraphs (2)(i) through (iv) of this subdivision shall apply.
  - (ii) The background level shall be determined as set forth in Reference Method 21.
  - (iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.
  - (iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- (4) In accordance with the waste analysis plan required by section 373-2.2(e)(2) of this Subpart, an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10 percent by weight using the following:
  - (i) methods described in ASTM Methods D 4420, E 169, E 168, E 260 (incorporated by reference under section 370.1(e) of this Title);
  - (ii) Method 9060A of SW-846 (incorporated by reference under section 370.1(e) of this Title), for computing total organic concentration of the sample, or analyzed for its individual organic constituents; or
  - (iii) application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10 percent, or prior speciation analysis results on the same

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waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

- (5) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the determination can be revised only after following the procedures in subparagraph (4)(i) or (ii) of this subdivision.
- (6) When an owner or operator and the commissioner do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in subparagraph (4)(i) or (ii) of this subdivision can be used to resolve the dispute.
- (7) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.
- (8) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879 (incorporated by reference under section 370.1(e) of this Title).
- (9) Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of section 373-2.27(e)(3)(i) through (iv) of this Subpart.

#### (o) **Recordkeeping requirements.**

- (1)
  - (i) Each owner or operator subject to the provisions of this section shall comply with the recordkeeping requirements of this subdivision.
  - (ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this section may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.
- (2) Owners and operators must record the following information in the facility operating record:
  - (i) For each piece of equipment to which this section applies:
    - ('a') equipment identification number and hazardous waste management unit identification;
    - ('b') approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan);
    - ('c') type of equipment (e.g., a pump or pipeline valve);
    - ('d') percent-by-weight total organics in the hazardous waste stream at the equipment;
    - ('e') hazardous waste state at the equipment (e.g., gas/vapor or liquid); and
    - ('f') method of compliance with the standard (e.g., “monthly leak detection and repair” or “equipped with dual mechanical seals”).
  - (ii) For facilities that comply with the provisions of section 373-2.27(d)(1)(ii) of this Subpart, an implementation schedule as specified in section 373-2.27(d)(1)(ii) of this Subpart.
  - (iii) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in section 373-2.27(f)(2)(iii) of this Subpart.
  - (iv) Documentation of compliance with subdivision (k) of this section, including the detailed design documentation or performance test results specified in section 373-2.27(f)(2)(iv) of this Subpart.

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- (3) When each leak is detected as specified in subdivisions (c), (d), (h) and (i) of this section, the following requirements apply:
  - (i) A weatherproof and readily visible identification, marked with the equipment identification number, the date of evidence of a potential leak was found in accordance with paragraph (i)(1) of this section, and the date the leak was detected, shall be attached to the leaking equipment.
  - (ii) The identification on equipment, except on a valve, may be removed after it has been repaired.
  - (iii) The identification on a valve may be removed after it has been monitored for two successive months as specified in paragraph (h)(3) of this section and no leak has been detected during those two months.
- (4) When each leak is detected as specified in subdivisions (c), (d), (h) and (i) of this section, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:
  - (i) The instrument and operator identification numbers and the equipment identification number.
  - (ii) The date evidence of a potential leak was found in accordance with paragraph (i)(1) of this section.
  - (iii) The date the leak was detected and the dates of each attempt to repair the leak.
  - (iv) Repair methods applied in each attempt to repair the leak.
  - (v) "Above 10,000" if the maximum instrument reading measured by the methods specified in paragraph (n)(2) of this section after each repair attempt is equal to or greater than 10,000 ppm.
  - (vi) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
  - (vii) Documentation supporting the delay of repair of a valve in compliance with paragraph (j)(3) of this section.
  - (viii) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.
  - (ix) The expected date of successful repair of the leak if the leak is not repaired within 15 calendar days.
  - (x) The date of successful repair of the leak.
- (5) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of subdivision (k) of this section shall be recorded and kept up-to-date in the facility operating record as specified in section 373-2.27(f)(3) of this Subpart. Design documentation is specified in section 373-2.27(f)(3)(i) and (ii) of this Subpart and monitoring, operating, and inspection information in section 373-2.27(f)(3)(iii) through (viii) of this Subpart.
- (6) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the commissioner will specify the appropriate recordkeeping requirements.
- (7) The following information pertaining to all equipment subject to the requirements in subdivisions (c) through (k) of this section shall be recorded in a log that is kept in the facility operating record:

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- (i) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this section.
- (ii)
  - ('a') A list of identification numbers that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of paragraphs (c)(5), (d)(9) and (h)(6) of this section.
  - ('b') The designation of this equipment as subject to the requirements of paragraphs (c)(5), (d)(9) and (h)(6) of this section shall be signed by the owner or operator.
- (iii) A list of equipment identification numbers for pressure relief devices required to comply with paragraph (e)(1) of this section.
- (iv)
  - ('a') The dates of each compliance test required in paragraphs (c)(5), (d)(9), (h)(6) and subdivision (e) of this section.
  - ('b') The background level measured during each compliance test.
  - ('c') The maximum instrument reading measured at the equipment during each compliance test.
- (v) A list of identification numbers for equipment in vacuum service.
- (vi) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.
- (8) The following information pertaining to all valves subject to the requirements of paragraphs (h)(7) and (8) of this section shall be recorded in a log that is kept in the facility operating record:
  - (i) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.
  - (ii) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.
- (9) The following information shall be recorded in the facility operating record for valves complying with subdivision (m) of this section:
  - (i) A schedule of monitoring.
  - (ii) The percent of valves found leaking during each monitoring period.
- (10) The following information shall be recorded in a log that is kept in the facility operating record:
  - (i) Criteria required in clause (c)(4)(v)(‘b’) and subparagraph (d)(5)(ii) of this section and an explanation of the design criteria.
  - (ii) Any changes to these criteria and the reasons for the changes.
- (11) The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability subdivision of this section and other specific sections:
  - (i) An analysis determining the design capacity of the hazardous waste management unit.



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- (ii) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in subdivisions (c) through (k) of this section and an analysis determining whether these hazardous wastes are heavy liquids.
  - (iii) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in subdivisions (c) through (k) of this section. The record shall include supporting documentation as required by subparagraph (n)(4)(iii) of this section when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in subdivisions (c) through (k) of this section, then a new determination is required.
- (12) Records of the equipment leak information required by paragraph (4) of this subdivision and the operating information required by paragraph (5) of this subdivision need be kept only three years.
- (13) The owner or operator of any facility with equipment that is subject to this section and to regulations at 40 CFR part 60, part 61, or part 63, as incorporated by reference in section 370.1(e) of this Title, may elect to determine compliance with this section by documentation either pursuant to this subdivision, or by documentation of compliance with the regulations at 40 CFR part 60, part 61 or part 63, as incorporated by reference in section 370.1(e) of this Title, pursuant to the relevant provisions of the regulations at 40 CFR part 60, part 61 or Part 63 as incorporated by reference in section 370.1(e) of this Title. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 as incorporated by reference in section 370.1(e) of this Title shall be kept with or made readily available with the facility operating record.

#### **(p) Reporting requirements.**

- (1) A semiannual report shall be submitted by owners and operators subject to the requirements of this section to the commissioner by dates specified by the commissioner. The report shall include the following information:
- (i) The Environmental Protection Agency identification number, name, and address of the facility.
  - (ii) For each month during the semiannual reporting period:
    - ('a') The equipment identification number of each valve for which a leak was not repaired as required in paragraph (h)(4) of this section.
    - ('b') The equipment identification number of each pump for which a leak was not repaired as required in paragraph (c)(3) and subparagraph (c)(4)(vi) of this section.
    - ('c') The equipment identification number of each compressor for which a leak was not repaired as required in paragraph (d)(7) of this section.
  - (iii) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.
  - (iv) For each month during the semiannual reporting period, dates when the control device installed as required by subdivision (c), (d), (e) or (f) of this section exceeded or operated outside of the design specifications as defined in paragraph (o)(5) of this section and as indicated by the control device required by subdivision (k) of this section and was not

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corrected within 24 hours, the duration and cause of each exceedance, and any corrective measures taken.

- (2) If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in paragraphs (h)(4) and (c)(3), subparagraph (c)(4)(vi), and paragraph (d)(7) of this section, respectively, and the control device does not exceed or operate outside of the design specifications as defined in paragraph (o)(5) of this section for more than 24 hours, a report to the commissioner is not required.

**Section 373-2.29 Air emission standards for tanks, surface impoundments, and containers.**

**(a) Applicability.**

- (1) The requirements of this section apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either section 373-2.9, 373-2.10 or 373-2.11 of this Subpart except as section 373-2.1 of this Subpart and paragraph (2) of this subdivision provide otherwise.
- (2) The requirements of this section do not apply to the following waste management units at the facility:
  - (i) A waste management unit that holds hazardous waste placed in a unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.
  - (ii) A container that has a design capacity less than or equal to 0.1 m<sup>3</sup>.
  - (iii) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
  - (iv) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
  - (v) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v), or 3008(h); CERCLA authorities, or similar Federal or State authorities including, but not limited to, this Part and Part 375 of this Title, Environmental Conservation Law, section 71-2727(3), and Environmental Conservation Law, article 27, titles 9 and 13.
  - (vi) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.
  - (vii) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63 as incorporated by reference in section 370.1(e) of this Title. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of paragraph (e)(9) of this section, except as provided in subparagraph (c)(3)(v) of this section.
  - (viii) A tank that has a process vent as defined in section 373-2.27(b) of this Subpart.

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- (3) For the owner and operator of a facility subject to this section who received a final permit under this Part, prior to December 6, 1996, the requirements of this section shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Part 621 of this Title or reviewed in accordance with the requirements of section 373-1.8 of this Title. Until such date when the owner and operator receive a final permit incorporating the requirements of this section, the owner and operator are subject to the requirements of section 373-3.29 of this Title.
- (4) The requirements of this section, except for the recordkeeping requirements specified in paragraph (j)(9) of this section, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:
  - (i) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, '*organic peroxide*' means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.
  - (ii) The owner or operator prepares documentation, in accordance with the requirements of paragraph (j)(9) of this section, explaining why an undue safety hazard would be created if air emission controls specified in subdivisions (e) through (h) of this section are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of subparagraph (i) of this paragraph.
  - (iii) The owner or operator notifies the commissioner in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of subparagraph (i) of this paragraph are managed at the facility in tanks or containers meeting the conditions of subparagraph (ii) of this paragraph. The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

**(b) Definitions.**

As used in this section, all terms shall have the meanings given to them in section 373-3.29(b) and Part 370 through Subpart 374-1 of this Title.

**(c) Standards: general.**

- (1) This subdivision applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this section.
- (2) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in subdivisions (e) through (h) of this section, as applicable to the hazardous waste management unit, except as provided for in paragraph (3) of this subdivision.

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- (3) A tank, surface impoundment, or container is exempt from standards specified in subdivisions (e) through (h) of this section as applicable, provided that the waste management unit is one of the following:
- (i) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in paragraph (d)(1) of this section. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.
  - (ii) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:
    - ('a') A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit ( $C_t$ ) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in paragraph (d)(2) of this section.
    - ('b') A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency ( $R$ ) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in paragraph (d)(2) of this section.
    - ('c') A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate ( $MR$ ) for the process is equal to or greater than the required organic mass removal rate ( $RMR$ ) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in paragraph (d)(2) of this section.
    - ('d') A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:
      - ('1') The organic reduction efficiency ( $R$ ) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency ( $R_{bio}$ ) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in paragraph (d)(2) of this section.
      - ('2') The total actual organic mass biodegradation rate ( $MR_{bio}$ ) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate ( $RMR$ ). The required organic mass removal rate and the actual

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organic mass biodegradation rate for the process shall be determined using the procedures specified in paragraph (d)(2) of this section.

- (e) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:
  - (1) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in subdivisions (e) through (h) of this section, as applicable to the waste management unit.
  - (2) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The department considers a drain system that meets the requirements of 40 CFR part 63, subpart RR—“National Emission Standards for Individual Drain Systems” as incorporated in section 370.1(e) of this Title, to be a closed system.
  - (3) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in paragraph (d)(1) of this section. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in paragraph (d)(2) of this section.
- (f) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in paragraphs (d)(2) and (d)(1) of this section, respectively.
- (g) A hazardous waste incinerator for which the owner or operator has either:
  - (1) been issued a final permit under Subpart 373-1 of this Part, which implements the requirements of section 373-2.15 of this Subpart; or
  - (2) has designed and operates the incinerator in accordance with the interim status requirements of section 373-3.15 of this Part.
- (h) A boiler or industrial furnace for which the owner or operator has either:
  - (1) been issued a final permit under Subpart 373-1 of this Part, which implements the requirements of section 374-1.8 of this Title; or
  - (2) has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of section 374-1.8 of this Title.

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- (i) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of clauses ('a') through ('f') of this paragraph, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:
  - (1) If Method 25D in 40 CFR part 60, appendix A as incorporated by reference in section 370.1(e) of this Title, is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, as incorporated by reference in section 370.1(e) of this Title, or a value of 25 ppmw, whichever is less.
  - (2) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's Law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as  $1.8 \times 10^{-6}$  atmospheres/gram-mole/m<sup>3</sup>) at 25° C.
- (iii) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of clause (ii)('d') of this paragraph.
- (iv) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:
  - ('a') meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in Part 376 of this Title, land disposal restrictions under table "Treatment Standards for Hazardous Waste" in section 376.4 of this Title; or
  - ('b') the organic hazardous constituents in the waste have been treated by the treatment technology established by the department for the waste in section 376.4(c)(1) of this Title, or have been removed or destroyed by an equivalent method of treatment approved by the USEPA and the department pursuant to section 376.4(c)(2) of this Title.
- (v) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:
  - ('a') the tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF—"National Emission Standards for Benzene Waste Operations" as incorporated by reference in section 370.1(e) of this Title, for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;
  - ('b') the enclosure and control device serving the tank were installed and began operation prior to November 25, 1996; and
  - ('c') the enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B as incorporated by reference in section 370.1(e) of this Title. The enclosure may have

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permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure,” as incorporated by reference in section 370.1(e), annually.

- (4) The commissioner may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this subdivision as follows:
- (i) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of paragraph (d)(1) of this section. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of paragraph (d)(2) of this section.
  - (ii) In performing a waste determination pursuant to subparagraph (i) of this paragraph, the sample preparation and analysis shall be conducted as follows:
    - (‘a’) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in clause (‘b’) of this subparagraph.
    - (‘b’) If the commissioner determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the commissioner may choose an appropriate method.
  - (iii) In a case when the owner or operator is requested to perform the waste determination, the commissioner may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.
  - (iv) In a case when the results of the waste determination performed or requested by the commissioner do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of subparagraph (i) of this paragraph shall be used to establish compliance with the requirements of this section.
  - (v) In a case when the owner or operator has used an averaging period greater than one hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the commissioner may elect to establish compliance with this section by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a one-hour period as follows:
    - (‘a’) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of paragraph (d)(1) of this section.
    - (‘b’) Results of the waste determination performed or requested by the commissioner showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this section except in a case as provided for in clause (‘c’) of this subparagraph.

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(c) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than one hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given one-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of paragraph (d)(1) and subdivision (j) of this section shall be considered by the commissioner together with the results of the waste determination performed or requested by the commissioner in establishing compliance with this section.

**(d) Waste determination procedures.**

- (1) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.
  - (i) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of subparagraph (c)(3)(i) of this section from using air emission controls in accordance with standards specified in subdivisions (e) through (h) of this section, as applicable to the waste management unit.
    - (a) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of subparagraph (c)(3)(i) of this section from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit.
    - (b) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO Concentration limits specified in subdivision (c) of this section.
  - (ii) For a waste determination that is required by subparagraph (i) of this paragraph, the average VO concentration of a hazardous waste at the point of waste origination may be determined in accordance with the procedures specified in section 373-3.29(e)(1)(ii) through (iv) of this Part.
- (2) Waste determination procedures for treated hazardous waste.
  - (i) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of clauses (c)(3)(ii)(a) through (d) of this section from using air emission controls in accordance with standards specified in subdivisions (e) through (h) of this section, as applicable to the waste management unit.
    - (a) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is



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placed in the exempt waste management unit, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination.

- (b') Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in subparagraph (c)(3)(ii) of this section are not achieved.
- (ii) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in subparagraphs 373-3.29(e)(2)(ii) through (ix) of this Part, as applicable to the treated hazardous waste.
- (iii) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.
  - (a') An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using tank level 1 controls in accordance with standards specified in paragraph (e)(3) of this section.
  - (b') The maximum organic vapor pressure of the hazardous waste may be determined in accordance with the procedures specified in section 373-3.29(e)(3)(ii) through (3)(iv) of this Part.
- (iv) The procedure for determining no detectable organic emissions for the purpose of complying with this section shall be conducted in accordance with the procedures specified in section 373-3.29(e)(4) of this Part.

#### (e) **Standards: tanks.**

- (1) The provisions of this section apply to the control of air pollutant emissions from tanks for which paragraph (c)(2) of this section references the use of this subdivision for such air emission control.
- (2) The owner or operator shall control air pollutant emissions from each tank subject to this subdivision in accordance with the following requirements as applicable:
  - (i) For a tank that manages hazardous waste that meets all of the conditions specified in clauses ('a') through ('c') of this subparagraph, the owner or operator shall control air pollutant emissions from the tank in accordance with the tank level 1 controls specified in paragraph (3) of this subdivision or the tank level 2 controls specified in paragraph (4) of this subdivision.
    - (a') The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:
      - ('1') For a tank design capacity equal to or greater than 151 m<sup>3</sup>, the maximum organic vapor pressure limit for the tank is 5.2 kPa.
      - ('2') For a tank design capacity equal to or greater than 75 m<sup>3</sup> but less than 151 m<sup>3</sup>, the maximum organic vapor pressure limit for the tank is 27.6 kPa.
      - ('3') For a tank design capacity less than 75 m<sup>3</sup>, the maximum organic vapor pressure limit for the tank is 76.6 kPa.
    - (b') The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with clause ('a') of this subparagraph.

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- (c) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in section 373-3.29(b) of this Part.
- (ii) For a tank that manages hazardous waste that does not meet all of the conditions specified in clauses ('a') through ('c') of this subparagraph, the owner or operator shall control air pollutant emissions from the tank by using tank level 2 controls in accordance with the requirements of paragraph (4) of this subdivision. Examples of tanks required to use tank level 2 controls include: a tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in clause (i)( 'a' ) of this subparagraph.
- (3) Owners and operators controlling air pollutant emissions from a tank using tank level 1 controls shall meet the requirements specified in subparagraphs (i) through (iv) of this paragraph:
  - (i) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using tank level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in subparagraph (d)(2)(iii) of this section. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in clause (2)(i)( 'a' ) of this subdivision, as applicable to the tank.
  - (ii) The tank shall be equipped with a fixed roof designed to meet the following specifications:
    - (a) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).
    - (b) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.
    - (c) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:
      - (1) equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or
      - (2) connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank except as provided for in items ('i') and ('ii') of this subclause.
        - (i) During period when it is necessary to provide access to the tank for performing the activities of item ('ii') of this subclause, venting of the vapor

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headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

- (ii) During periods of routine inspection, maintenance, or other activities needed for normal operations, and removal of accumulated sludge or other residues from the bottom of the tank.
- (d) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.
- (iii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:
  - (a) Opening of closure devices or removal of the fixed roof is allowed at the following times:
    - (1) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.
    - (2) To remove accumulated sludge or other residues from the bottom of tank.
  - (b) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

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- (c) Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iv) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.
  - (a) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
  - (b) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in paragraph (12) of this subdivision.
  - (c) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (11) of this subdivision.
  - (d) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(2) of this section.
- (4) Owners and operators controlling air pollutant emissions from a tank using tank level 2 controls shall use one of the following tanks:
  - (i) a fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (5) of this subdivision;
  - (ii) a tank equipped with an external floating roof in accordance with the requirements specified in paragraph (6) of this subdivision;
  - (iii) a tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (7) of this subdivision;
  - (iv) a pressure tank designed and operated in accordance with the requirements specified in paragraph (8) of this subdivision; or
  - (v) a tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (9) of this subdivision.
- (5) The owner or operator who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet the requirements specified in subparagraphs (i) through (iii) of this paragraph.
  - (i) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:
    - (a) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
    - (b) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:
      - (1) a single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in section 373-3.29(b) of this Part; or

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- (2) two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.
- (c) The internal floating roof shall meet the following specifications:
  - (1) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
  - (2) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.
  - (3) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.
  - (4) Each automatic bleeder vent and rim space vent shall be gasketed.
  - (5) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
  - (6) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (ii) The owner or operator shall operate the tank in accordance with the following requirements:
  - (a) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.
  - (b) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.
  - (c) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.
- (iii) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:
  - (a) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: the internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.
  - (b) The owner or operator shall inspect the internal floating roof components as follows except as provided in clause ('c') of this subparagraph:
    - (1) visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill; and

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- (2') visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.
- ('c') As an alternative to performing the inspections specified in clause ('b') of this subparagraph for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every five years.
- ('d') Prior to each inspection required by clause ('b') or ('c') of this subparagraph, the owner or operator shall notify the commissioner in advance of each inspection to provide the commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the commissioner of the date and location of the inspection as follows:
  - ('1') Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the commissioner at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subclause ('2') of this clause.
  - ('2') When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the commissioner as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the commissioner at least seven calendar days before refilling the tank.
- ('e') In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (11) of this subdivision.
- ('f') The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(2) of this section.
- (iv) Safety devices, as defined in subdivision (b) of this section, may be installed and operated as necessary on any tank complying with the requirements of this paragraph.
- (6) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in subparagraphs (i) through (iii) of this paragraph.
  - (i) The owner or operator shall design the external floating roof in accordance with the following requirements:
    - ('a') The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
    - ('b') The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

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- (1') The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in section 373-3.29(b) of this Part. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm<sup>2</sup>) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.
- (2') The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm<sup>2</sup>) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).
- (c') The external floating roof shall meet the following specifications:
  - (1') Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.
  - (2') Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.
  - (3') Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.
  - (4') Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.
  - (5') Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.
  - (6') Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.
  - (7') Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.
  - (8') Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.
  - (9') Each gauge hatch and each sample well shall be equipped with a gasketed cover.
- (ii) The owner or operator shall operate the tank in accordance with the following requirements:
  - (a') When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.
  - (b') Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.
  - (c') Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

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- (d) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.
  - (e) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
  - (f) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.
  - (g) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.
  - (h) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.
- (iii) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:
- (a) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:
    - (1) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every five years.
    - (2) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.
    - (3) If a tank ceases to hold hazardous waste for a period of one year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of subclauses (1) and (2) of this clause.
    - (4) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:
      - (i) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.
      - (ii) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.
      - (iii) For a seal gap measured under this subparagraph, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.
      - (iv) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the



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secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in clause (i)(‘b’) of this paragraph.

- (‘5’) In the event that the seal gap measurements do not conform to the specifications in clause (i)(‘b’) of this paragraph, the owner or operator shall repair the defect in accordance with the requirements of paragraph (11) of this subdivision.
- (‘6’) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(2) of this section.
- (‘b’) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:
  - (‘1’) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
  - (‘2’) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (12) of this subdivision.
  - (‘3’) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (11) of this subdivision.
  - (‘4’) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(2) of this section.
- (‘c’) Prior to each inspection required by clause (‘a’) or (‘b’) of this subparagraph, the owner or operator shall notify the commissioner in advance of each inspection to provide the commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the commissioner of the date and location of the inspection as follows:
  - (‘1’) Prior to each inspection to measure external floating roof seal gaps as required under clause (‘a’) of this subparagraph, written notification shall be prepared and sent by the owner or operator so that it is received by the commissioner at least 30 calendar days before the date the measurements are scheduled to be performed.
  - (‘2’) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the commissioner at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subclause (‘3’) of this clause.

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- (3') When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the commissioner as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the commissioner at least seven calendar days before refilling the tank.
- (iv) Safety devices, as defined in subdivision (b) of this section, may be installed and operated as necessary on any tank complying with the requirements of this paragraph.
- (7) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in subparagraphs (i) through (iii) of this paragraph.
  - (i) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:
    - ('a') The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.
    - ('b') Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.
    - ('c') The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.
    - ('d') The closed-vent system and control device shall be designed and operated in accordance with the requirements of subdivision (h) of this section.
  - (ii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:
    - ('a') Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

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- (1') To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.
- (2') To remove accumulated sludge or other residues from the bottom of a tank.
- ('b') Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:
  - ('a') The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
  - ('b') The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subdivision (h) of this section.
  - ('c') The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (12) of this subdivision.
  - ('d') In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (11) of this subdivision.
  - ('e') The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(2) of this section.
- (8) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.
  - (i) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.
  - (ii) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in paragraph (d)(4) of this section.
  - (iii) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except under either of the following conditions as specified in clause ('a') for ('b') of this paragraph.
    - ('a') At those times when opening of a safety device, as defined in section 373-3.29(b) of this Part, is required to avoid an unsafe condition.

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- (b') At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of subdivision (h) of this section.
- (9) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in subparagraphs (i) through (iv) of this paragraph.
- (i) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, appendix B, as incorporated by reference in section 370.1(e) of this Title. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure,” as incorporated by reference in section 370.1(e) of this Title, initially when the enclosure is first installed and, thereafter, annually.
- (ii) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in subdivision (h) of this section.
- (iii) Safety devices, as defined in section 373-3.29(b) of this Part, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of subparagraphs (i) and (ii) of this paragraph.
- (iv) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in subdivision (h) of this section.
- (10) The owner or operator shall transfer hazardous waste to a tank subject to this subdivision in accordance with the following requirements:
- (i) Transfer of hazardous waste, except as provided in subparagraph (ii) of this paragraph, to the tank from another tank subject to this subdivision or from a surface impoundment subject to subdivision (f) of this section shall be conducted using continuous hard- piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—“National Emission Standards for Individual Drain Systems” as incorporated by reference in section 370.1(e) of this Title.
- (ii) The requirements of subparagraph (i) of this paragraph do not apply when transferring a hazardous waste to the tank under any of the following conditions:
- (a') The hazardous waste meets the average VO concentration conditions specified in subparagraph (c)(3)(i) of this section at the point of waste origination.
- (b') The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subparagraph (c)(3)(ii) of this section.
- (c') The hazardous waste meets the requirements of subparagraph (c)(3)(iv) of this section.

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- (11) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subparagraph (3)(iv), (5)(iii), (6)(iii), or (7)(iii) of this subdivision as follows:
  - (i) The owner or operator shall make first efforts at repair of the defect no later than five calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in subparagraph (ii) of this paragraph.
  - (ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.
- (12) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this section, subsequent inspection and monitoring may be performed at intervals longer than one year under the following special conditions:
  - (i) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an “unsafe to inspect and monitor cover” and comply with all of the following requirements:
    - (a) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.
    - (b) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable subdivision of this section, as frequently as practicable during those times when a worker can safely access the cover.
  - (ii) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this subdivision, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

**(f) Standards: surface impoundments.**

- (1) The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which paragraph (c)(2) of this section references the use of this subdivision for such air emission control.
- (2) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:
  - (i) a floating membrane cover in accordance with the provisions specified in paragraph (3) of this subdivision; or
  - (ii) a cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in paragraph (4) of this subdivision.
- (3) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in subparagraphs (i) through (iii) of this paragraph.

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- (i) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:
  - ('a') The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.
  - ('b') The cover shall be fabricated from a synthetic membrane material that is either:
    - ('1') high density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or
    - ('2') a material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in subclause ('1') of this clause and chemical and physical properties that maintain the material integrity for the intended service life of the material.
  - ('c') The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.
  - ('d') Except as provided for in clause ('e') of this subparagraph, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.
  - ('e') The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.
  - ('f') The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.
- (ii) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:
  - ('a') Opening of closure devices or removal of the cover is allowed at the following times:
    - ('1') To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or

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operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

- (2') To remove accumulated sludge or other residues from the bottom of surface impoundment.
- ('b') Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iii) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:
  - ('a') The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
  - ('b') The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (7) of this subdivision.
  - ('c') In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (6) of this subdivision.
  - ('d') The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(3) of this section.
- (4) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in subparagraphs (i) through (iii) of this paragraph.
  - (i) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:
    - ('a') The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.
    - ('b') Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in paragraph (d)(4) of this section.
    - ('c') The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will

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maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

- (d') The closed-vent system and control device shall be designed and operated in accordance with the requirements of subdivision (h) of this section.
- (ii) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:
  - (a') Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:
    - (1') To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.
    - (2') To remove accumulated sludge or other residues from the bottom of the surface impoundment.
  - (b') Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:
  - (a') The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
  - (b') The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subdivision (h) of this section.
  - (c') The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this subdivision. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (7) of this subdivision.
  - (d') In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (6) of this subdivision.



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- (e) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in paragraph (j)(3) of this section.
- (5) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this subdivision in accordance with the following requirements:
- (i) Transfer of hazardous waste, except as provided in subparagraph (ii) of this paragraph, to the surface impoundment from another surface impoundment subject to this subdivision or from a tank subject to subdivision (e) of this section shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—“National Emission Standards for Individual Drain Systems” as incorporated by reference in section 370.1(e) of this Title.
  - (ii) The requirements of subparagraph (i) of this paragraph do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:
    - (a) The hazardous waste meets the average VO concentration conditions specified in subparagraph (c)(3)(i) of this section at the point of waste origination.
    - (b) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subparagraph (c)(3)(ii) of this section.
    - (c) The hazardous waste meets the requirements of subparagraph (c)(3)(iv) of this section.
- (6) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subparagraph (3)(iii) or (4)(iii) of this subdivision as follows:
- (i) The owner or operator shall make first efforts at repair of the defect no later than five calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in subparagraph (ii) of this paragraph.
  - (ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.
- (7) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this section, subsequent inspection and monitoring may be performed at intervals longer than one year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an “unsafe to inspect and monitor cover” and comply with all of the following requirements:
- (i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.
  - (ii) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable subdivision of this section as frequently as practicable during those times when a worker can safely access the cover.

**(g) Standards: containers.**

- (1) The provisions of this subdivision apply to the control of air pollutant emissions from containers for which paragraph (c)(2) of this section references the use of this subdivision for such air emission control.
- (2) General requirements.
  - (i) The owner or operator shall control air pollutant emissions from each container subject to this subdivision in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in subparagraph (ii) of this subdivision apply to the container.
    - ('a') For a container having a design capacity greater than 0.1 m<sup>3</sup> and less than or equal to 0.46 m<sup>3</sup>, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (3) of this subdivision.
    - ('b') For a container having a design capacity greater than 0.46 m<sup>3</sup> that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (3) of this subdivision.
    - ('c') For a container having a design capacity greater than 0.46 m<sup>3</sup> that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in paragraph (4) of this subdivision.
  - (ii) When a container having a design capacity greater than 0.1 m<sup>3</sup> is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in paragraph (5) of this subdivision at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.
- (3) Container Level 1 standards.
  - (i) A container using Container Level 1 controls is one of the following:
    - ('a') A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (6) of this subdivision.
    - ('b') A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible wholes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).
    - ('c') An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

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- (ii) A container used to meet the requirements of clause (i)(‘b’) or (‘c’) of this paragraph shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as the container is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.
- (iii) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:
  - (‘a’) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:
    - (‘1’) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
    - (‘2’) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.
  - (‘b’) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:
    - (‘1’) For the purpose of meeting the requirements of this section, an empty container as defined in section 371.1(h)(2) of this Title, may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).
    - (‘2’) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in section 371.1(h)(2) of this Title, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

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- (c) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
  - (d) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.
  - (e) Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iv) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:
- (a) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in section 371.1(h)(2) of this Title) within 24 hours after the container is accepted at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date that the container becomes subject to the air emission container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in appendix 30 to Part 372 of this Title, as required under section 373-2.5(b) of this Subpart. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of clause ('c') of this subparagraph.

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- (b) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of clause ('c') of this subparagraph.
  - (c) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection and repair shall be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.
  - (v) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m<sup>3</sup> or greater, which do not meet applicable DOT regulations as specified in paragraph (6) of this subdivision, are not managing hazardous waste in light material service.
- (4) Container Level 2 standards.
- (i) A container using Container Level 2 controls is one of the following:
    - (a) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (6) of this subdivision.
    - (b) A container that operates with no detectable organic emissions as defined in section 373-3.29(b) of this Part, and determined in accordance with the procedure specified in paragraph (7) of this subdivision.
    - (c) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 as incorporated by reference in section 370.1(e) of this Title, in accordance with the procedure specified in paragraph (8) of this subdivision.
  - (ii) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the department considers to meet the requirements of this paragraph include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

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- (iii) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:
  - ('a') Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:
    - ('1') In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
    - ('2') In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.
  - ('b') Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:
    - ('1') For the purpose of meeting the requirements of this subdivision, an empty container as defined in section 371.1(h)(2) of this Title, may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).
    - ('2') In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in section 371.1(h)(2) of this Title, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.
  - ('c') Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
  - ('d') Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in

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accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

- (e) Opening of a safety device, as defined in section 373-3.29(b) of this Part, is allowed at any time conditions require doing so to avoid an unsafe condition.
- (iv) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:
  - (a) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in section 371.1(h)(2) of this Title) within 24 hours after the container arrives at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the air emission container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in appendix 30 to Part 372 of this Title, as required under section 373-2.5(b) of this Subpart. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of clause ('c') of this subparagraph.
  - (b) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of clause ('c') of this subparagraph.
  - (c) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five

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calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(5) Container Level 3 standards.

- (i) A container using Container Level 3 controls is one of the following:
  - ('a') A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of clause (ii)(‘b’) of this paragraph.
  - ('b') A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of clauses (ii)(‘a’) and (‘b’) of this paragraph.
- (ii) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:
  - ('a') The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, appendix B, as incorporated by reference in section 370.1(e) of this Title. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” initially when the enclosure is first installed and, thereafter, annually, as incorporated by reference in section 370.1(e) of this Title.
  - ('b') The closed-vent system and control device shall be designed and operated in accordance with the requirements of subdivision (h) of this section.
- (iii) Safety devices, as defined in section 373-3.29(b) of this Part, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subparagraph (i) of this paragraph.
- (iv) Owners and operators using Container Level 3 controls in accordance with the provisions of this section shall inspect and monitor the closed-vent systems and control devices as specified in section 373-3.29(h) of this Part.
- (v) Owners and operators that use Container Level 3 controls in accordance with the provisions of this section shall prepare and maintain the records specified in paragraph (j)(4) of this section.
- (vi) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the State considers to meet the requirements of this subparagraph include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of



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a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

- (6) For the purpose of compliance with clause (3)(i)(‘a’) or (4)(i)(‘a’) of this subdivision, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:
  - (i) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packaging or 49 CFR part 179—Specifications for Tank Cars, as incorporated by reference in section 370.1(e) of this Title.
  - (ii) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packages; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings, as incorporated by reference in section 370.1(e) of this Title.
  - (iii) For the purpose of complying with this section, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in subparagraph (iv) of this paragraph.
  - (iv) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this section, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b), as incorporated by reference in section 370.1(e) of this Title.
- (7) To determine compliance with the no detectable organic emissions requirement of clause (4)(i)(‘b’) of this subdivision, the procedure specified in subparagraph (d)(2)(iv) of this section shall be used.
  - (i) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.
  - (ii) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.
- (8) Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR part 60, appendix A, as incorporated by reference in section 370.1(e) of this Title, for the purpose of complying with clause (4)(i)(‘c’) of this subdivision.
  - (i) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A, as incorporated by reference in section 370.1(e) of this Title.
  - (ii) A pressure measurement device shall be used that has a precision of  $\pm 2.5$  mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

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- (iii) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within five minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

#### (h) Standards: closed-vent systems and control devices.

- (1) This subdivision applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this section.
- (2) The closed-vent system shall meet the following requirements:
  - (i) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in paragraph (3) of this subdivision.
  - (ii) The closed-vent system shall be designed and operated in accordance with the requirements specified in section 373-2.27(d)(11) of this Subpart.
  - (iii) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in clause ('a') of this subparagraph or a seal or locking device as specified in clause ('b') of this subparagraph. For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.
    - ('a') If a flow indicator is used to comply with this subparagraph, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this subparagraph, a *'flow indicator'* means a device which indicates the presence of either gas or vapor flow in the bypass line.
    - ('b') If a seal or locking device is used to comply with this subparagraph, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.
  - (iv) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in section 373-2.27(d)(12) of this Subpart.
- (3) The control device shall meet the following requirements:
  - (i) The control device shall be one of the following devices:
    - ('a') A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight.
    - ('b') An enclosed combustion device designed and operated in accordance with the requirements of section 373-2.27(d)(3) of this Subpart.
    - ('c') A flare designed and operated in accordance with the requirements of section 373-2.27(d)(4) of this Subpart.

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- (ii) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this subdivision shall comply with the requirements specified in clauses ('a') through ('f') of this subparagraph.
  - ('a') Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of clause (i)('a'), ('b'), or ('c') of this paragraph, as applicable, shall not exceed 240 hours per year.
  - ('b') The specifications and requirements in clauses (i)('a'), ('b'), and ('c') of this paragraph for control devices do not apply during periods of planned routine maintenance.
  - ('c') The specifications and requirements in clauses (i)('a'), ('b'), and ('c') of this paragraph for control devices do not apply during a control device system malfunction.
  - ('d') The owner or operator shall demonstrate compliance with the requirements of clause ('a') of this subparagraph (i.e., planned routine maintenance of a control device during which the control device does not meet the specifications of clause (i)('a'), ('b'), or ('c') of this paragraph, as applicable, shall not exceed 240 hours per year) by recording the information specified in clause (j)(5)(i)('e') of this section.
  - ('e') The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.
  - ('f') The owner or operator shall operate the closed-vent system such that gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, and/or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.
- (iii) The owner or operator using a carbon adsorption system to comply with subparagraph (i) of this paragraph shall operate and maintain the control device in accordance with the following requirements:
  - ('a') Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of section 373-2.27(d)(7) or (8) of this Subpart.
  - ('b') All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of section 373-2.27(d)(14) of this Subpart, regardless of the average volatile organic concentration of the carbon.
- (iv) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with subparagraph (i) of this paragraph shall operate and maintain the control device in accordance with the requirements of section 373-2.27(d)(10) of this Subpart.
- (v) The owner or operator shall demonstrate that a control device achieves the performance requirements of subparagraph (i) of this paragraph as follows:
  - ('a') An owner or operator shall demonstrate using either a performance test as specified in clause ('c') of this subparagraph or a design analysis as specified in clause ('d') of this subparagraph the performance of each control device except for the following:

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- (1) a flare;
  - (2) a boiler or process heater with a design heat input capacity of 44 megawatts or greater;
  - (3) a boiler or process heater into which the vent stream is introduced with the primary fuel;
  - (4) a boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under Subpart 373-1 of this Part and has designed and operates the unit in accordance with the requirements of section 374-1.8 of this Title; or
  - (5) a boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of section 374-1.8 of this Title.
- (b) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in section 373-2.27(d)(5) of this Subpart.
- (c) For a performance test conducted to meet the requirements of clause ('a') of this subparagraph, the owner or operator shall use the test methods and procedures specified in section 373-2.27(e)(3)(i) through (iv) of this Subpart.
- (d) For a design analysis conducted to meet the requirements of clause ('a') of this subparagraph, the design analysis shall meet the requirements specified in section 373-2.27(f)(2)(iv)(c') of this Subpart.
- (e) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of subparagraph (i) of this paragraph based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.
- (vi) If the owner or operator and the commissioner do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of clause (v)(c') of this paragraph. The commissioner may choose to have an authorized representative observe the performance test.
- (vii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in section 373-2.27(d)(6)(ii) and (d)(12) of this Subpart. The readings from each monitoring device required by section 373-2.27(d)(6)(ii) of this Subpart shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this subdivision.

**(i) Inspection and monitoring requirements.**

- (1) The owner or operator shall inspect and monitor air emission control equipment used to comply with this section in accordance with the applicable requirements specified in subdivisions (e) through (h) of this section.

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- (2) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by paragraph (1) of this subdivision. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under section 373-2.2(g) of this Subpart.

**(j) Recordkeeping requirements.**

- (1) Each owner or operator of a facility subject to requirements of this section shall record and maintain the information specified in paragraphs (2) through (10) of this subdivision, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraphs (9) and (10) of this subdivision, records required by this subdivision shall be maintained in the operating record for a minimum of three years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by paragraphs (9) and (10) of this subdivision shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in subdivisions (e) through (h) of this section in accordance with the conditions specified in paragraph (a)(4) or subparagraph (a)(2)(vii) of this section, respectively.
- (2) The owner or operator of a tank using air emission controls in accordance with the requirements of subdivision (e) of this section shall prepare and maintain records for the tank that include the following information:
  - (i) For each tank using air emission controls in accordance with the requirements of subdivision (e) of this section, the owner or operator shall record:
    - ('a') A tank identification number (or other unique identification description as selected by the owner or operator).
    - ('b') A record for each inspection required by subdivision (e) of this section that includes the following information:
      - ('1') Date inspection was conducted.
      - ('2') For each defect detected during the inspection, the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of subdivision (e) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.
  - (ii) In addition to the information required by subparagraph (i) of this paragraph, the owner or operator shall record the following information, as applicable to the tank:
    - ('a') The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in paragraph (e)(3) of this section shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of paragraph (e)(3) of this section. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

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- (b) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in paragraph (e)(5) of this section shall prepare and maintain documentation describing the floating roof design.
- (c) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in paragraph (e)(6) of this section shall prepare and maintain the following records:
  - (1) Documentation describing the floating roof design and the dimensions of the tank.
  - (2) Records for each seal gap inspection required by subparagraph (e)(6)(iii) of this section describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in subparagraph (e)(6)(i) of this section, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.
- (d) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in paragraph (e)(9) of this section shall prepare and maintain the following records:
  - (1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, appendix B as incorporated by reference in section 370.1(e) of this Title.
  - (2) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (5) of this subdivision.
- (3) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of subdivision (f) of this section shall prepare and maintain records for the surface impoundment that include the following information:
  - (i) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).
  - (ii) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in paragraph 373-2.29(f)(3) of this section.
  - (iii) A record for each inspection required by subdivision (f) of this section that includes the following information:
    - (a) Date inspection was conducted.
    - (b) For each defect detected during the inspection the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with

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the provisions of paragraph (f)(6) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

- (iv) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in paragraph (5) of this subdivision.
- (4) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of subdivision (g) of this section shall prepare and maintain records that include the following information:
  - (i) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, appendix B as incorporated by reference in section 370.1(e) of this Title.
  - (ii) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (5) of this subdivision.
- (5) The owner or operator using a closed-vent system and control device in accordance with the requirements of subdivision (h) of this section shall prepare and maintain records that include the following information:
  - (i) Documentation for the closed-vent system and control device that includes:
    - (‘a’) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in clause (‘b’) of this subparagraph or by performance tests as specified in clause (‘c’) of this subparagraph when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.
    - (‘b’) If a design analysis is used, then design documentation as specified in section 373-2.27(f)(2)(iv) of this Subpart. The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with section 373-2.27(f)(2)(iv)(‘c’) of this Subpart and certification by the owner or operator that the control equipment meets the applicable specifications.
    - (‘c’) If performance tests are used, then a performance test plan as specified in section 373-2.27(f)(2)(iii) of this Subpart and all test results.
    - (‘d’) Information as required by section 373-2.27(f)(3)(i) and (ii) of this Subpart, as applicable.
    - (‘e’) An owner or operator shall record, on a semiannual basis, the information specified in subclauses (‘1’) and (‘2’) of this clause for those planned routine maintenance operations that would require the control device not to meet the requirements of clause (h)(3)(i)(‘a’), (‘b’), or (‘c’) of this section, as applicable.
      - (‘1’) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next six-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

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- (2') A description of the planned routine maintenance that was performed for the control device during the previous six-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of clause (h)(3)(i)(‘a’), (‘b’), or (‘c’) of this section, as applicable, due to planned routine maintenance.
  - (f) An owner or operator shall record the information specified in subclauses (‘1’) through (‘3’) of this clause for those unexpected control device system malfunctions that would require the control device not to meet the requirements of clause (h)(3)(i)(‘a’), (‘b’) or (‘c’) of this section, as applicable.
    - (1') The occurrence and duration of each malfunction of the control device system.
    - (2') The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.
    - (3') Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.
  - (g') Records of the management of carbon removed from a carbon adsorption system conducted in accordance with clause (h)(3)(iii)(‘b’) of this section.
- (6) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of paragraph (c)(3) of this section shall prepare and maintain the following records, as applicable:
- (i) For tanks, surface impoundments, and containers exempted under the hazardous waste organic concentration conditions specified in subparagraph (c)(3)(i) or clauses (c)(3)(ii)(‘a’) through (‘f’) of this section, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of subdivision (d) of this section.
  - (ii) For tanks, surface impoundments, or containers exempted under the provisions of clause (c)(3)(ii)(‘g’) or (‘h’) of this section, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.
- (7) An owner or operator designating a cover as “unsafe to inspect and monitor” pursuant to paragraph (e)(12) or (f)(7) of this section shall record in a log that is kept in the facility operating record the following information: the identification numbers for waste management units with covers that are designated as “unsafe to inspect and monitor,” the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.
- (8) The owner or operator of a facility that is subject to this section and to the control device standards in 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, as incorporated by reference in section 370.1(e)(2) of this Title, may elect to demonstrate compliance with the applicable



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subdivisions of this section by documentation either pursuant to this section, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, as incorporated by reference in section 370.1(e)(2) of this Title, to the extent that the documentation required by 40 CFR part 60 or 61, as incorporated by reference in section 370.1(e)(2) of this Title, duplicates the documentation required by this subdivision.

- (9) For each tank or container not using air emission controls specified in subdivisions (e) through (h) of this section in accordance with the conditions specified in paragraph (a)(4) of this section, the owner or operator shall record and maintain the following information:
- (i) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in subparagraph (a)(4)(i) of this section.
  - (ii) A description of how the hazardous waste containing the organic peroxide compounds identified in subparagraph (i) of this paragraph are managed at the facility in tanks and containers. This description shall include:
    - ('a') For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: a facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.
    - ('b') For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: a facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.
  - (iii) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in subparagraph (i) of this paragraph in the tanks and containers as described in subparagraph (ii) of this paragraph would create an undue safety hazard if the air emission controls, as required under subdivisions (e) through (h) of this section, are installed and operated on these waste management units. This explanation shall include the following information:
    - ('a') For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this section, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.
    - ('b') For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required

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air emission controls, as allowed under this section, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

- (10) For each hazardous waste management unit not using air emission controls specified in subdivisions (e) through (h) of this section in accordance with the requirements of subparagraph (a)(2)(vii) of this section, the owner or operator shall record and maintain the following information:
- (i) certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63, as incorporated by reference in section 370.1(e) of this Title; and
  - (ii) identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63, as incorporated by reference in section 370.1(e) of this Title, with which the waste management unit is in compliance.

#### **(k) Reporting requirements.**

- (1) Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of paragraph (c)(3) of this section shall report to the commissioner each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in subparagraph (c)(3)(i) or (ii) of this section, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 500 ppmw at the point of waste origination; or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process that fails to achieve the applicable conditions specified in clauses (c)(3)(ii)(‘a’) through (‘f’) of this section. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.
- (2) Each owner or operator using air emission controls on a tank in accordance with the requirements paragraph (e)(3) of this section shall report to the commissioner each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in paragraph (e)(2) of this section. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.
- (3) Each owner or operator using a control device in accordance with the requirements of subdivision (h) of this section shall submit a semi annual written report to the commissioner except as provided

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for in paragraph (4) of this subdivision. The report shall describe each occurrence during the previous six-month period when either:

- (i) a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in section 373-2.27(f)(3)(iv) of this Subpart; or
  - (ii) a flare is operated with visible emissions for five minutes or longer in a two-hour period, as defined in section 373-2.27(d)(4) of this Subpart. The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.
- (4) A report to the commissioner in accordance with the requirements of paragraph (3) of this subdivision is not required for a six-month period during which all control devices subject to this section are operated by the owner or operator such that:
- (i) during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in section 373-2.27(f)(3)(iv) of this Subpart; and
  - (ii) no flare was operated with visible emissions for five minutes or longer in a two-hour period, as defined in section 373-2.27(d)(4)(i) of this Subpart.

### Section 373-2.30 Containment buildings.

#### (a) Applicability.

The requirements of this section apply to owners or operators who store or treat hazardous waste in units designed and operated under subdivision (b) of this section. The owner or operator is not subject to the definition of land disposal in section 370.2(b) of this Title provided that the unit:

- (1) is a completely enclosed, self-supporting structure that is designed and constructed of humanmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;
- (2) has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment within the unit;
- (3) if the unit is used to manage liquids, has:
  - (i) a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;
  - (ii) a liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and
  - (iii) a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time, unless the unit has been granted a variance from the secondary containment system requirements under subparagraph (b)(2)(iv) of this section;

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- (4) has controls sufficient to prevent fugitive dust emissions to meet the no visible emission standard in clause (b)(3)(i)(‘d’) of this section; and
- (5) is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

**(b) Design and operating standards.**

- (1) All containment buildings must comply with the following design standards:
  - (i) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.
  - (ii) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (2) of this subdivision, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. DEC will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this paragraph. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:
    - (‘a’) they provide an effective barrier against fugitive dust emissions under clause (3)(i)(‘d’) of this subdivision; and
    - (‘b’) the unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.
  - (iii) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.
  - (iv) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of unit and appropriate for the physical and chemical characteristics of the waste to be managed.
- (2) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:
  - (i) a primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface);
  - (ii) a liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:

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- (a) the primary barrier must be sloped to drain liquids to the associated collection system;  
and
- (b) liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time;
- (iii) a secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.
  - (a) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:
    - (1) constructed with a bottom slope of one percent or more; and
    - (2) constructed of a granular drainage material with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more.
  - (b) If treatment is to be conducted in the building, any area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.
  - (c) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building, and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of section 373-2.10(d)(5)(i) of this Subpart. In addition, the containment building must meet the requirements of section 373-2.10(d)(2), and (3)(I) and (ii) of this Subpart to be considered an acceptable secondary containment system for a tank).
- (iv) For existing units other than 90-day generator units, the commissioner may accept a determination made by the EPA administrator to delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this section. In making this demonstration, the owner or operator must:
  - (a) have provided written notice to the EPA administrator of such request by November 16, 1992. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;
  - (b) respond to any comments from the EPA administrator on these plans within 30 days;  
and
  - (c) fulfill the terms of the revised plans, if such plans are approved by the EPA administrator.
- (3) Owners or operators of all containment buildings must:

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- (i) use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:
  - ('a') maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;
  - ('b') maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;
  - ('c') take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and
  - ('d') take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, Appendix A, Method 22-Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares (see section 370.1(e) of this Title)). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance (see section 370.1(e) of this Title)). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit;
- (ii) obtain, and keep on-site, certification by an independent, qualified professional engineer registered in New York State that the containment building design meets the requirements of paragraphs (1) through (3) of this subdivision.
- (iii) throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures:
  - ('a') upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:
    - ('1') enter a record of the discovery in the facility operating record;
    - ('2') immediately remove from service the portion of the containment building affected by the condition;
    - ('3') determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and
    - ('4') within seven days after the discovery of the condition, notify the commissioner of the condition, and within 14 working days, provide a written notice to the commissioner with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work;
  - ('b') the commissioner will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing;

**373-2.30(b)**

(c) upon completing all repairs and cleanup the owner or operator must notify the commissioner in writing and provide a verification, signed by a qualified professional engineer registered in New York State, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subclause ('a')(4) of this subparagraph; and

(iv) inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the containment buildings and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(4) For a containment building that contains both areas with and without secondary containment, the owner or operator must:

(i) design and operate each area in accordance with the requirements enumerated in paragraphs (1) through (3) of this subdivision;

(ii) take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(iii) maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(5) Notwithstanding any other provision of this section, the commissioner may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

**(c) Closure and post-closure care.**

(1) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 371.1(d)(4) of this Title applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in sections 373-2.7 and 373-2.8 of this Subpart.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (1) of this subdivision, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator must close the facility and perform post-closure requirements that apply to landfills (see section 373-2.14(g) of this Subpart). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in sections 373-2.7 and 373-2.8 of this Subpart.

## Section 373-2.31 Hazardous waste munitions and explosives storage.

### (a) Applicability.

The requirements of this section apply to owners or operators who store munitions and explosive hazardous wastes, except as section 373-2.1(a) of this Subpart provides otherwise. (*Note:* Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (section 373-2.30 of this Subpart), tanks (section 373-2.10 of this Subpart), or containers (section 373-2.9 of this Subpart); see section 374-1.13(f) of this Title for storage of waste military munitions).

### (b) Design and operating standards.

- (1) Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:
  - (i) minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere;
  - (ii) provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;
  - (iii) for wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;
  - (iv) for liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and
  - (v) provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.
- (2) Hazardous waste munitions and explosives stored under this section may be stored in one of the following:
  - (i) Earth-covered magazines. Earth-covered magazines must be:
    - (a) constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;
    - (b) designed and constructed:
      - (1') to be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;
      - (2') to provide working space for personnel and equipment in the unit; and
      - (3') to withstand movement activities that occur in the unit; and
    - (c) located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.



### 373-2.31(b)

- (ii) Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
  - (iii) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.
- (3) Hazardous waste munitions and explosives must be stored in accordance with a standard operating procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of section 373-2.2(f) of this Subpart, the preparedness and prevention procedures of section 373-2.3 of this Subpart, and the contingency plan and emergency procedures requirements of section 373-2.4 of this Subpart, then these procedures will be used to fulfill those requirements.
  - (4) Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.
  - (5) Hazardous waste munitions and explosives must be inventoried at least annually.
  - (6) Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.
- (c) **Closure and post-closure care.**
- (1) At closure of a magazine or unit which stored hazardous waste under this section, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless section 371.1(d)(4) of this Title applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in sections 373-2.7 and 373-2.8 of this Subpart, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.
  - (2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (1) of this subdivision, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (see section 373-2.14(g) of this Subpart).

**APPENDICES**

**Appendices to Subpart 373-2**

**APPENDIX 33 – GROUNDWATER MONITORING LIST**

<b>Common name<sup>1</sup></b>	<b>CAS RN<sup>2</sup></b>	<b>Chemical abstracts service index name<sup>3</sup></b>
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
Acenaphthylene	208-96-8	Acenaphthylene
Acetone	67-64-1	2-Propanone
Acetophenone	98-86-2	Ethanone, 1-phenyl-
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-
Acrolein	107-02-8	2-Propenal
Acrylonitrile	107-13-1	2-Propenenitrile
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1, 2, 3, 4, 10, 10-hexachloro-1,4,4a,5,8,8a-hexahydro- (1 $\alpha$ , 4 $\alpha$ , 4 $\alpha\beta$ , 5 $\alpha$ , 8 $\alpha$ , 8 $\alpha\beta$ )-
Allyl chloride	107-05-1	1-Propene, 3-chloro-
4-Aminobiphenyl	92-67-1	(1,1'-Biphenyl)-4-amine
Aniline	62-53-3	Benzenamine
Anthracene	120-12-7	Anthracene
Antimony	(Total)	Antimony
Aramite	140-57-8	Sulfurous acid. 2-chloroethyl 2-(4-(1,1-dimethylethyl)phenoxy) - 1 -methylethyl ester
Arsenic	(Total)	Arsenic
Barium	(Total)	Barium
Benzene	71-43-2	Benzene
Benzo(a)anthracene; Benzanthracene	56-55-3	Benz(a)anthracene
Benzo(b)fluoranthene	205-99-2	Benz(e)acephenanthrylene
Benzo(k)fluoranthene	207-08-9	Benzo(k)fluoranthene
Benzo(ghi)perylene	191-24-2	Benzo(ghi)perylene
Benzo(a)pyrene	50-32-8	Benzo(a)pyrene
Benzyl alcohol	100-51-6	Benzenemethanol
Beryllium	(Total)	Beryllium
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\alpha$ , 5 $\beta$ , 6 $\beta$ )-
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 $\alpha$ , 2 $\beta$ , 3 $\alpha$ ,4 $\beta$ ,5 $\alpha$ ,6 $\beta$ )-
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 $\alpha$ ,2 $\alpha$ 3 $\alpha$ ,4 $\beta$ ,5 $\alpha$ ,6 $\beta$ )-
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\beta$ )-
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'-(methylenebis (oxy))bis(2-chloro-
Bis(2-chloroethyl)ether	111-44-4	Ethane, 1,1'-oxybis(2-chloro-
Bis(2-chloro-1-methylethyl) ether; 2,2'-Dichlorodiisopropyl ether	108-60-1	Propane, 2,2'-oxybis(1-chloro-
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Bromodichloromethane	75-27-4	Methane, bromodichloro-
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester
Cadmium	(Total)	Cadmium
Carbon disulfide	75-15-0	Carbon disulfide
Carbon tetrachloride	56-23-5	Methane, tetrachloro-
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-
Chlorobenzene	108-90-7	Benzene, chloro-
Chlorobenzilate	510-15-6	Benzenoacetic acid, 4-chloro- $\alpha$ -(4-chlorophenyl)- $\alpha$ -hydroxy-, ethyl ester
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-
Chloroform	67-66-3	Methane, trichloro-
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-
2-Chlorophenol	95-57-8	Phenol, 2-chloro-
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-
Chromium	(Total)	Chromium
Chrysene	218-01-9	Chrysene
Cobalt	(Total)	Cobalt
Copper	(Total)	Copper
m-Cresol	108-39-4	Phenol, 3-methyl-
o-Cresol	95-48-7	Phenol, 2-methyl-
p-Cresol	106-44-5	Phenol, 4-methyl-
Cyanide	57-12-5	Cyanide
2,4-D;2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-
4,4'-DDD	72-54-8	Benzene 1,1'-(2, 2-dichloroethylidene)bis(4-chloro-
4,4'-DDE	72-55-9	Benzene 1,1'-(dichloroethylidene)bis(4-chloro-
4,4'-DDT	50-29-3	Benzene 1,1'-(2, 2, 2-trichloroethylidene)bis(4-chloro-
Dialiate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
Dibenz(a,h)anthracene	53-70-3	Dibenz(a,h)anthracene
Dibenzofuran	132-64-9	Dibenzofuran
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-
1, 2-Dibromoethane; Ethylene dibromide	106-93-4	Ethane, 1,2-dibromo-
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-
3,3'-Dichlorobenzidine	91-94-1	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-
Dichlorodifluoromethane	75-71-8	Methane, dichlorodifluoro-
1,1-Dichloroethane	75-34-3	Ethane, 1,1-dichloro-
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,2-dichloro
1,1-Dichloroethylene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro-, (E)-
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-
1,2-Dichloropropane	78-87-5	Propane, 1,2-dichloro-
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,3 $\beta$ ,6 $\beta$ ,6 $\alpha$ ,7 $\beta$ ,7 $\alpha$ )-
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-(2-(methylamino)-2-oxoethyl) ester
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
7,12-Dimethylbenz(a)anthracene	57-97-6	Benz(a)anthracene, 7,12-dimethyl-
3,3'-Dimethylbenzidine	119-93-7	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
alpha, alpha-Dimethylphenethylamine	122-09-8	Benzeneethanamine, $\alpha,\alpha$ -dimethyl-
2,4-Dimethylphenethylamine	105-67-9	Phenol, 2,4-dimethyl-
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro-
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-
Dinoseb; DNBP; 2-sec-Butyl-4, 6-dinitro-phenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
1,4-Dioxane	123-91-1	1,4-Dioxane
Diphenylamine	122-39-4	Benzenamine, N-phenyl-
Disulfoton	298-04-4	Phosphorodithioic acid, 0,0-diethyl S-(2-(ethylthio)-, S-(2-ethyl)ester

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3 $\alpha$ , 5a $\beta$ , 6 $\alpha$ ,9 $\alpha$ , 9a $\beta$ )-
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6, 7, 8, 9, 10, 10-hexachloro- 1, 5, 5a, 6, 9, 9a-hexahydro-, 3-oxide, (3 $\alpha$ ,5a $\alpha$ , 6 $\beta$ , 9 $\beta$ , 9a $\alpha$ )-
Endosulfan sulfate	1031-07-8	6, 9-Methano-2, 4, 3-benzodioxathiepin, 6, 7, 8, 9, 10, 10-hexachloro-1, 5, 5a, 6, 9, 9a-hexahydro-, 3,3-dioxide
Endrin	72-20-8	2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3, 4, 5, 6, 9, 9-hexachloro-1a, 2, 2a, 3, 6, 6a, 7, 7a-octahydro-, (1a $\alpha$ , 2 $\beta$ , 2a $\beta$ , 3 $\alpha$ , 6 $\alpha$ , 6a $\beta$ , 7 $\beta$ , 7a $\alpha$ )-
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta(cd) pentalene-5-carboxaldehyde, 2, 2a, 3, 3, 4, 7-hexachlorodecahydro-, (1 $\alpha$ , 2 $\beta$ , 2a $\beta$ , 4 $\beta$ , 4a $\beta$ , 5 $\beta$ , 6a $\beta$ , 6b $\beta$ , 7R*)-
Ethylbenzene	100-41-4	Benzene, ethyl-
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester
Famphur	52-85-7	Phosphorothioic acid, O-(4-((dimethylamino)sulfonyl)phenyl))-O, O-dimethyl ester
Fluoranthene	206-44-0	Fluoranthene
Fluorene	86-73-7	9H-Fluorene
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1, 4, 5, 6, 7, 8, 8-heptachloro- 3a,4,7,7a-tetrahydro-
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno(1,2-b)oxirene, 2, 3, 4, 5, 6, 7, 7-heptachloro-1a, 1b, 5, 5a, 6, 6a,- hexahydro-, (1a $\alpha$ , 1b $\beta$ , 2 $\alpha$ , 5a, 5a $\beta$ , 6 $\beta$ , 6a $\alpha$ )
Hexachlorobenzene	118-74-1	Benzene, hexachloro-
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
Hexachloroethane	67-72-1	Ethane, hexachloro-
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis(3,4,6-trichloro-
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
2-Hexanone	591-78-6	2-Hexenone
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene, 1, 2, 3, 4, 10, 10-hexachloro- 1,4,4a,5,8,8a hexahydro-(1 $\alpha$ , 4 $\alpha$ , 4a $\beta$ , 5 $\beta$ , 8 $\beta$ , 8a $\beta$ )-
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl.-
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta- (cd)pentalen-2-one, 1, 1a, 3, 3a, 4, 5, 5, 5a, 5b, 6-decachlorooctahydro-
Lead	(Total)	Lead
Mercury	(Total)	Mercury

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-
Methapyrilene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2, trichloroethylidene)bis(4-methoxy-
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-
3-Methylcholanthrene	56-49-5	Benz(j)aceanthrylene, 1,2-dihydro-3-methyl-
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-
Methyl ethyl ketone; MEK	78-93-3	2-Butanone
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
4-Methyl-2-pentanone, Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-
Naphthalene	91-20-3	Naphthalene
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione
1-Naphthylamine	134-32-7	1-Naphthalenamine
2-Naphthylamine	91-59-8	2-Naphthalenamine
Nickel	(Total)	Nickel
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-
Nitrobenzene	98-95-3	Benzene, nitro-
o-Nitrophenol	88-75-5	Phenol, 2-nitro-
p-Nitrophenol	100-02-7	Phenol, 4-nitro-
4-Nitroquinoline 1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-
N-Nitrosodipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-
N-Nitrosomorpholine	59-89-2	Morpholine, 4-nitroso-
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-
Parathion	56-38-2	Phosphorothioic acid, O, O-diethyl-O-(4-nitrophenyl) ester

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Polychlorinated biphenyls; PCBs	See Note 7	1,1'-Biphenyl, chloro derivatives
Polychlorinated dibenzo-p-dioxins; PCDDs	See Note 8	Dibenzo(b,e) (1,4)dioxin, chloro derivatives
Polychlorinated dibenzofurans; PCDFs	See Note 9	Dibenzofuran, chloro derivatives
Pentachlorobenzene	608-93-5	Benzene, pentachloro-
Pentachloroethane	76-01-7	Ethane, pentachloro-
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-
Pentachlorophenol	87-86-5	Phenol, pentachloro-
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)
Phenanthrene	85-01-8	Phenanthrene
Phenol	108-95-2	Phenol
p-Phenylenediamine	106-50-3	1,4-Benzenediamine
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S-((ethylthio)methyl) ester
2-Picoline	109-06-8	Pyridine, 2-methyl-
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N- (1,1-dimethyl-2-propynyl)-
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile
Pyrene	129-00-0	Pyrene
Pyridine	110-86-1	Pyridine
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
Selenium	(Total)	Selenium
Silver	(Total)	Silver
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Styrene	100-42-5	Benzene, ethenyl-
Sulfide	18496-25-8	Sulfide
2,4,5-T;2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
2,3,7,8-TCDD;2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	Dibenzo(b,e)(1,4) dioxin,2,3,7,8-tetrachloro-
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-
1,1,1,2-Tetrachloroethane	630-20-6	Ethane,1,1,1,2-tetrachloro-
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-
Tetrachloroethylene; Perchloroethylene; Tetrachloroethane	127-18-4	Ethene, tetrachloro-
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	Thiodiphosphoric acid (((HO) <sub>2</sub> P(S)) <sub>2</sub> O), tetraethyl ester
Thallium	(Total)	Thallium
Tin	(Total)	Tin
Toluene	108-88-3	Benzene, methyl-
o-Toluidine	95-53-4	Benzenamine, 2-methyl-
Toxaphene	8001-35-2	Toxaphene
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-

## APPENDICES

Common name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-
Trichlorofluoromethane	75-69-4	Methane, trichlorofluoro-
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-
O,O,O-Triethyl phosphorthioate	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-
Vanadium	(Total)	Vanadium
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester
Vinyl chloride	75-01-4	Ethene, chloro-
Xylene (total)	1330-20-7	Benzene, dimethyl-
Zinc	(Total)	Zinc

<sup>1</sup> Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

<sup>2</sup> Chemical Abstracts Service registry number. Where “Total” is entered, all species in the ground water that contain this element are included.

<sup>3</sup> CAS index names are those used in the 9th Cumulative Index.

<sup>4</sup> Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).

<sup>5</sup> This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2, 3, 7, 8-TCDD), pentachlorodibenzo-p-dioxins and hexachlorodibenzo-p-dioxins.

<sup>6</sup> This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans.