

or 265.1057(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with 265.1054(a).

(4) (i) The dates of each compliance test required in 265.1052(e), 265.1053(i), 265.1054, and 265.1057(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(6) 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 a period of less than 300 hours per year. (9/98)

(h) The following information pertaining to all valves subject to the requirements of 265.1057 (g) and (h) shall be recorded in a log that is kept in the facility operating record:

(1) 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.

(2) 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.

(i) The following information shall be recorded in the facility operating record for valves complying with 265.1062:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(j) The following information shall be recorded in a log that is kept in the facility operating record:

(1) Criteria required in 265.1052(d)(5)(ii) and 265.1053(e)(2) and an explanation of the criteria.

(2) Any changes to these criteria and the reasons for the changes.

(k) 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 section of this subpart and other specific subparts:

(1) An analysis determining the design capacity of the hazardous waste management unit.

(2) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in 265.1052 through 265.1060 and an analysis determining whether these hazardous wastes are heavy liquids.

(3) An up to date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in 265.1052 through 265.1060. The record shall include supporting documentation as required by 265.1063(d)(3) 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 265.1052 through 265.1060, then a new determination is required.

(l) Records of the equipment leak information required by paragraph (d) of this section and the operating information required by paragraph (e) of this section need be kept only 3 years.

(m) The owner or operator of any facility with equipment that is subject to this subpart and to leak detection, monitoring, and repair requirements under regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this subpart either by documentation pursuant to 265.1064 of this subpart, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 part 60, part 61, or part 63. The documentation of compliance under regulation at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record. (11/99; 8/00)

265.1065 - 265.1079 [Reserved]

Subpart CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS (9/98)

265.1080 Applicability

(a) The requirements of this subpart 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 subparts I, J, or K of this part except as 265.1 and paragraph (b) of this section provide otherwise.

(b) The requirements of this subpart do not apply to the following waste management units at the facility:

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996 (11/99).

(2) A container that has a design capacity less than or equal to 0.1 m³.

(3) 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.

(4) 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.

(5) 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. (9/01)

(6) 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.

(7) 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. 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 265.1085(i), except as provided in 265.1083(c)(5).

(8) A tank that has a process vent as defined in 264.1031.

(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to December 6, 1996, the following requirements apply:

(1) The requirements of part 264, subpart CC shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 124.15 or reviewed in accordance with the requirements of 270.50(d).

(2) Until the date when the permit is reissued in accordance with the requirements of 124.15 or reviewed in accordance with the requirements of 270.50(d), the owner and operator is subject to the requirements of this subpart.

(d) The requirements of this subpart, except for the recordkeeping requirements specified in 265.1090(i) of this subpart, 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:

(1) 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.

(2) The owner or operator prepares documentation, in accordance with the requirements of 265.1090(i) of this subpart, explaining why an undue safety hazard would be created if air emission controls specified in 265.1085 through 265.1088 of this subpart 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 paragraph (d)(1) of this section.

(3) The owner or operator notifies the Department in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) of this section are managed at the facility in tanks or containers meeting the conditions of paragraph (d)(2) of this section. 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.

(e) [Reserved 11/99]

265.1081 Definitions

As used in this subpart, all terms not defined herein shall have the meaning given to them in the Act and parts 260 through 266 of this chapter.

"Average volatile organic concentration" or "average VO concentration" means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of 265.1084 of this subpart.

"Closure device" means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

"Continuous seal" means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

"Cover" means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design

of the unit.

"Enclosure" means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device.

"External floating roof" means a pontoon-type or double-deck type cover that rests on the surface of the material managed in a tank with no fixed roof.

"Fixed roof" means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

"Floating membrane cover" means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment.

"Floating roof" means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

"Hard-piping" means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

"In light material service" means the container is used to manage a material for which both of the following conditions apply: the vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20°C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20°C is equal to or greater than 20 percent by weight.

"Internal floating roof" means a cover that rests or floats on the material surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof.

"Liquid-mounted seal" means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

"Maximum organic vapor pressure" means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor pressure-causing conditions (i.e., temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of this subpart, maximum organic vapor pressure is determined using the procedures specified in 265.1084(c) of this subpart.

"Metallic shoe seal" means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal

sheet and the floating roof.

"No detectable organic emissions" means no escape of organics to the atmosphere as determined using the procedure specified in 265.1084(d) of this subpart.

"Point of waste origination" means as follows:

(1) When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in part 261.

[Note: In this case, this term is being used in a manner similar to the use of the term "point of generation" in air standards established for waste management operations under authority of the Clean Air Act in 40 CFR parts 60, 61, and 63.]

(2) When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

"Point of waste treatment" means the point where a hazardous waste to be treated in accordance with 265.1083(c)(2) of this subpart exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

"Safety device" means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on 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.

"Single-seal system" means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

"Vapor-mounted seal" means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

"Volatile organic concentration" or "VO concentration"

means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement or by knowledge of the waste in accordance with the requirements of 265.1084 of this subpart. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of 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 1.8×10^{-6} atmospheres/gram-mole/m³) at 25 degrees Celsius must be included. Appendix VI of this subpart presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

"Waste determination" means performing all applicable procedures in accordance with the requirements of 265.1084 of this subpart to determine whether a hazardous waste meets standards specified in this subpart. Examples of a waste determination include performing the procedures in accordance with the requirements of 265.1084 of this subpart to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; the organic reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.

"Waste stabilization process" means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095 (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference-refer to 260.11 of this chapter). A waste stabilization process includes mixing the hazardous waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification." This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

265.1082 Schedule for implementation of air emission standards

(a) Owners or operators of facilities existing on December 6, 1996, and subject to subparts I, J, and K of this part shall meet the following requirements: (11/99)

(1) Install and begin operation of all control equipment or waste management units required to

comply with this subpart and complete modifications of production or treatment processes to satisfy exemption criteria in accordance with 265.1083(c) of this subpart by December 6, 1996, except as provided for in paragraph (a)(2) of this section. (11/99)

(2) When control equipment or waste management units required to comply with this subpart cannot be installed and in operation or modifications of production or treatment processes to satisfy exemption criteria in accordance with 265.1083(c) of this subpart cannot be completed by December 6, 1996, the owner or operator shall: (11/99)

(i) Install and begin operation of the control equipment and waste management units, and complete modifications of production or treatment processes as soon as possible but no later than December 8, 1997. (11/99)

(ii) Prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for control equipment, waste management units, and production or treatment process modifications; initiation of on-site installation of control equipment or waste management units, and modifications of production or treatment processes; completion of control equipment or waste management unit installation, and production or treatment process modifications; and performance of testing to demonstrate that the installed equipment or waste management units, and modified production or treatment processes meet the applicable standards of this subpart. (11/99)

(iii) For facilities subject to the recordkeeping requirements of 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than December 6, 1996. (11/99)

(iv) For facilities not subject to 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than December 6, 1996. (11/99)

(b) Owners or operators of facilities and units in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to subparts I, J, or K of this part shall meet the following requirements: (11/99)

(1) Install and begin operation of control equipment or waste management units required to comply with this subpart, and complete modifications of production or treatment processes to satisfy exemption criteria of 265.1083(c) of this subpart by the effective date of the amendment, except as provided for in paragraph (b)(2) of this section. (11/99)

(2) When control equipment or waste management units required to comply with this subpart cannot be installed and begin operation, or when modifications of

production or treatment processes to satisfy exemption criteria of 265.1083(c) of this subpart cannot be completed by the effective date of the amendment, the owner or operator shall:(11/99)

(i) Install and begin operation of the control equipment or waste management unit, and complete modification of production or treatment processes as soon as possible but no later than 30 months after the effective date of the amendment. (11/99)

(ii) For facilities subject to the recordkeeping requirements of 265.73, enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than the effective date of the amendment, or

(iii) For facilities not subject to 265.73, the owner or operator shall enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility site no later than the effective date of the amendment.

(c) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997 due to an action other than those described in paragraph (b) of this section 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 subpart; the 30-month implementation schedule does not apply). (11/99)

(d) The Department may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment, and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this subpart. (11/99)

265.1083 Standards: General

(a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subpart.

(b) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in 265.1085 through 265.1088 of this subpart, as applicable to the hazardous waste management unit, except as provided for in paragraph (c) of this section.(11/99)

(c) A tank, surface impoundment, or container is exempt from standards specified in 265.1085 through 265.1088 of this subpart, as applicable, provided that the waste management unit is one of the following:

(1) 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

265.1084(a) of this subpart. 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.

(2) 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:

(i) 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 265.1084(b) of this subpart.

(ii) 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 265.1084(b) of this subpart.

(iii) 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 265.1084(b) of this subpart.

(iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(A) 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 265.1084(b) of this subpart.

(B) 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 organic mass biodegradation rate for the process shall be determined using the procedures specified in 265.1084(b) of this subpart.

(v) A process that removes or destroys the

organics contained in the hazardous waste and meets all of the following conditions:

(A) 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 265.1085 through 265.1088 of this subpart, as applicable to the waste management unit.

(B) 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 EPA considers a drain system that meets the requirements of 40 CFR part 63, subpart RR-National Emission Standards for Individual Drain Systems to be a closed system.

(C) 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 265.1084(a) of this subpart. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in 265.1084(b) of this subpart.

(vi) 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 265.1084(b) and 265.1084(a) of this subpart, respectively.

(vii) A hazardous waste incinerator for which the owner or operator has either:

(A) Been issued a final permit under part 270 which implements the requirements of part 264, subpart O; or

(B) Has designed and operates the incinerator in accordance with the interim status requirements of subpart O of this part.

(viii) A boiler or industrial furnace for which the owner or operator has either:

(A) Been issued a final permit under part 270 which implements the requirements of part 266, subpart H, or

(B) Has designed and operates the boiler or industrial furnace in accordance with the interim

status requirements of part 266, subpart H.

(ix) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of paragraphs (c)(2)(i) through (c)(2)(vi) of this section, 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:

(A) If Method 25D in 40 CFR part 60, Appendix A 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, or a value of 25 ppmw, whichever is less. (11/99)

(B) 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 1.8×10^{-6} atmospheres/gram-mole/m³] at 25 degrees Celsius. (11/99)

(3) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of paragraph (c)(2)(iv) of this section. (11/99)

(4) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(i) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in part 268-Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in 268.40; or

(ii) The organic hazardous constituents in the waste have been treated by the treatment technology established by the EPA for the waste in 268.42(a), or have been removed or destroyed by an equivalent method of treatment approved by EPA pursuant to 268.42(b). (11/99)

(5) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(i) 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 for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996; and

(iii) 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. 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 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" annually.

(d) The Department 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 section as follows:

(1) 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 265.1084(a) of this subpart. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of 265.1084(b) of this subpart.

(2) In performing a waste determination pursuant to paragraph (d)(1) of this section, the sample preparation and analysis shall be conducted as follows:

(i) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in paragraph (d)(2)(ii) of this section.

(ii) If the Department 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 Department may choose an appropriate method.

(3) In a case when the owner or operator is requested to perform the waste determination, the Department may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(4) In a case when the results of the waste determination performed or requested by the Department 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 paragraph (d)(1) of this section shall be used to establish compliance with the requirements of this subpart.

(5) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Department may elect to establish compliance with this subpart by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

(i) 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 265.1084(a) of this subpart.

(ii) Results of the waste determination performed or requested by the Department 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 subpart except in a case as provided for in paragraph (d)(5)(iii) of this section.

(iii) 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 1 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 1-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 265.1084(a) and 265.1090 of this subpart shall be considered by the Department together with the results of the waste determination performed or requested by the Department in establishing compliance with this subpart.

265.1084 Waste determination procedures

(a) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

(1) 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 265.1083(c)(1) of this subpart from using air emission controls in accordance with standards specified in 265.1085 through 265.1088 of this subpart, as applicable to the waste management unit.

(i) 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 265.1083(c)(1) of this subpart 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; and (8/00)

(ii) 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 VO concentration limit specified in 265.1083(c)(1) of this subpart. (8/00)

(2) For a waste determination that is required by paragraph (a)(1) of this section, the average VO concentration of a hazardous waste at the point of waste

origination shall be determined using either direct measurement as specified in paragraph (a)(3) of this section or by knowledge as specified in paragraph (a)(4) of this section. (11/99)

(3) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.

(i) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

(ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature. (11/99; 8/00)

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference-refer to 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, Appendix A.

(D) Sufficient information, as specified in the "site sampling plan" required under paragraph

(a)(3)(ii)(C) of this section, shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples. (8/00)

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (a)(3)(iii)(A) through (a)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, Appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values 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 1.8×10^{-6} atmospheres/gram-mole/m³] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (a)(3)(iii)(B) through (a)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, Appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference - refer to 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (a)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the owner or operator may adjust test data measured by a method other than Method 25D to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, Appendix A. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (fm25D). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (fm25D) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. (8/00)

(A) Method 25D in 40 CFR part 60, Appendix A.

(B) Method 624 in 40 CFR part 136, Appendix A.

(C) Method 625 in 40 CFR part 136,

Appendix A. Perform corrections to the compounds for which the analysis is being conducted based on the "accuracy as recovery" using the factors in Table 7 of the method.

(D) Method 1624 in 40 CFR part 136, Appendix A.

(E) Method 1625 in 40 CFR part 136, Appendix A.

(F) Method 8260 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 (incorporated by reference - refer to 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements: (11/99)

(1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(2) Measurement of the overall accuracy and precision of the specific procedures.

(G) Method 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference - refer to 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements: (11/99)

(1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, and preparation introduction, and analysis steps.

(2) Measurement of the overall accuracy and precision of the specific procedures.

(H) Any other EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods," 40 CFR part 63, Appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in paragraph (a)(3)(iii)(I) of this section.

(I) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part 63, Appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(iv) Calculations.

(A) The average VO concentration (C) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with paragraphs (a)(3) (ii) and (iii) of this

section and the following equation: (11/99)

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

\bar{C} = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste. (11/99)

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year). (11/99; 8/00)

Q_i = Mass quantity of hazardous waste stream represented by C_i , kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of paragraph (a)(3)(iii) of this section (i.e. the average of the four or more samples specified in paragraph (a)(3)(ii)(B) of this section), ppmw. (11/99)

(B) For the purpose of determining C_i , for individual waste samples analyzed in accordance with paragraph (a)(3)(iii) of this section, 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: (11/99)

(1) If Method 25D in 40 CFR part 60, Appendix A 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. (11/99)

(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 values 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 1.8×10^{-6} atmospheres/gram-mole/m³] at 25 degrees Celsius. (11/99)

(v) Provided that the test method is appropriate for the waste as required under paragraph (a)(3)(iii) of this section, the Department will determine compliance based on the test method used by the owner or operator as recorded pursuant to 265.1090(f)(1) of this subpart. (11/99)

(4) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.

(i) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include:

Material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(ii) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 in 40 CFR part 63, Appendix A as the basis for knowledge of the waste.

(iii) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, Appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

(iv) In the event that the Department and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in paragraph (a)(3) of this section shall be used to establish compliance with the applicable requirements of this subpart. The Department may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of paragraph (a)(3)(iii) of this section. (11/99)

(b) Waste determination procedures for treated hazardous waste.

(1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of 265.1083(c)(2)(i) through (c)(2)(vi) of this subpart from using air emission controls in accordance with standards specified in 265.1085 through 265.1088 of this subpart, as applicable to the waste management unit. (11/99)

(i) 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 placed in a waste management unit exempted under the provisions of 265.1083(c)(2), 265.1083(c)(3), or 265.1083(c)(4) of this subpart from

using air emission controls, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and (8/00)

(ii) 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 265.1083(c)(2), 265.1083(c)(3), or 265.1083(c)(4) of this subpart are not achieved. (8/00)

(2) The owner or operator shall designate and record the specific provision in 265.1083(c)(2) of this subpart under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in paragraphs (b)(3) through (b)(9) of this section.

(3) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

(i) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.

(ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature. (11/99; 8/00)

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste

stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporated by reference-refer to 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, Appendix A.

(D) Sufficient information, as specified in the "site sampling plan" required under paragraph (C) of (b)(3)(ii) this section, 265.1084(b)(3)(ii), shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples. (8/00)

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system to determine if the conditions of 264.1082(c)(2)(i) through (c)(2)(vi) or 265.1083(c)(2)(i) through (c)(2)(vi) are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. If Method 25D in 40 CFR part 60, Appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values 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 1.8×10^{-6} atmospheres/gram-mole/m³] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (b)(3)(iii)(B) through (b)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, Appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference - refer to 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's

published list, the procedures in paragraph (b)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the owner or operator may adjust test data measured by a method other than Method 25D to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, Appendix A. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant equal to or greater than 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. (9/01)

(A) Method 25D in 40 CFR part 60, Appendix A.

(B) Method 624 in 40 CFR part 136, Appendix A.

(C) Method 625 in 40 CFR part 136, Appendix A. Perform corrections to the compounds for which the analysis is being conducted based on the "accuracy as recovery" using the factors in Table 7 of the method.

(D) Method 1624 in 40 CFR part 136, Appendix A.

(E) Method 1625 in 40 CFR part 136, Appendix A.

(F) Method 8260 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 (incorporated by reference-refer to 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements: (11/99)

(1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(2) Measurement of the overall accuracy and precision of the specific procedures.

(G) Method 8270 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (incorporated by reference-refer to 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements:(11/99)

(1) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(2) Measurement of the overall accuracy and precision of the specific procedures.

(H) Any other EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR part 63, Appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in paragraph (b)(3)(iii)(I) of this section.

(I) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part 63, Appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(iv) Calculations. The average VO concentration (C) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with paragraphs (b)(3)(ii) and (iii) of this section and the following equation: (11/99)

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

\bar{C} = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste. (11/99)

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year). (11/99, 9/01)

Q_i = Mass quantity of hazardous waste stream represented by C_i , kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of paragraph (b)(3)(iii) of this section (i.e. the average of the four or more samples specified in paragraph (b)(3)(ii)(B) of this section), ppmw. (11/99)

(v) Provided that the test method is appropriate for the waste as required under paragraph (b)(3)(iii) of this section, compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to 265.1090(f)(1) of this subpart. (11/99)

(4) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.

(i) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified.

(ii) If a single hazardous waste stream is identified in paragraph (b)(4)(i) of this section, then the exit concentration limit (C_t) shall be 500 ppmw.

(iii) If more than one hazardous waste stream is identified in paragraph (b)(4)(i) of this section, then the average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section. The exit concentration limit (C_t) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^m (Q_x \times \bar{C}_x) + \sum_{y=1}^n (Q_y \times 500 \text{ ppmw})}{\sum_{x=1}^m Q_x + \sum_{y=1}^n Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, ppmw.

x = Individual hazardous waste stream "x" that has an average VO concentration less than 500 ppmw at the point of waste origination as determined in accordance with the requirements of 265.1084(a) of this subpart.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of 265.1084(a) of this subpart.

m = Total number of "x" hazardous waste streams treated by process.

n = Total number of "y" hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream "x," kg/yr.

Q_y = Annual mass quantity of hazardous waste stream "y," kg/yr.

\bar{C}_x = Average VO concentration of hazardous waste stream "x" at the point of waste origination as determined in accordance with the requirements of 265.1084(a) of this subpart, ppmw.

(5) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.

(i) The organic reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(ii) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.

(iii) For each run, information shall be determined for each hazardous waste stream identified in paragraph (b)(5)(ii) of this section using the following procedures:

(A) The mass quantity of each hazardous

waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) shall be determined.

(B) The average VO concentration at the point of waste origination of each hazardous waste stream entering the process (\bar{C}_b) during the run shall be determined in accordance with the requirements of paragraph (a)(3) of this section. The average VO concentration at the point of waste treatment of each waste stream exiting the process (\bar{C}_a) during the run shall be determined in accordance with the requirements of paragraph (b)(3) of this section.

(iv) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be calculated by using the results determined in accordance with paragraph (b)(5)(iii) of this section and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^m (Q_{bj} \times \bar{C}_{bj})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^m (Q_{aj} \times \bar{C}_{aj})$$

Where:

E_a = Waste volatile organic mass flow exiting process, kg/hr.

E_b = Waste volatile organic mass flow entering process, kg/hr.

m = Total number of runs (at least 3)

j = Individual run "j"

Q_b = Mass quantity of hazardous waste entering process during run "j," kg/hr.

Q_a = Average mass quantity of hazardous waste exiting process during run "j," kg/hr.

\bar{C}_a = Average VO concentration of hazardous waste exiting process during run "j" as determined in accordance with the requirements of 265.1084(b)(3) of this subpart, ppmw.

\bar{C}_b = Average VO concentration of hazardous waste entering process during run "j" as determined in accordance with the requirements of 265.1084(a)(3) of this subpart, ppmw.

(v) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with paragraph (b)(5)(iv) of this section and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100\%$$

Where:

R = Organic reduction efficiency, percent.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of

paragraph (b)(5)(iv) of this section, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

(6) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

(i) The fraction of organics biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, Appendix C of this chapter.

(ii) The R_{bio} shall be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100\%$$

Where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(6)(i) of this section.

(7) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.

(i) All of the hazardous waste streams entering the treatment process shall be identified.

(ii) The average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section.

(iii) For each individual hazardous waste stream that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination shall be determined.

(iv) The RMR shall be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^n \left[V_y \times k_y \times \frac{(\bar{C}_y - 500 \text{ ppmw})}{10^6} \right]$$

Where:

RMR = Required organic mass removal rate, kg/hr.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of 265.1084(a) of this subpart.

n = Total number of "y" hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, m³/hr.

k_y = Density of hazardous waste stream "y," kg/m³

\bar{C}_y = Average VO concentration of hazardous waste stream "y" at the point of waste origination as

determined in accordance with the requirements of 265.1084(a) of this subpart, ppmw.

(8) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.

(i) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(ii) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be determined in accordance with the requirements of paragraph (b)(5)(iv) of this section.

(iii) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of paragraph (b)(8)(ii) of this section and the following equation:

$$MR = E_b - E_a$$

Where:

MR = Actual organic mass removal rate, kg/hr.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

(9) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.

(i) The MR_{bio} shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(ii) The waste organic mass flow entering the process (E_b) shall be determined in accordance with the requirements of paragraph (b)(5)(iv) of this section.

(iii) The fraction of organic biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, Appendix C of this chapter.

(iv) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of paragraphs (b)(9)(ii) and (b)(9)(iii), respectively, of this section and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

Where:

MR_{bio} = Actual organic mass biodegradation rate, kg/hr.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(9)(iii) of this section.

(c) Procedure to determine the maximum organic

vapor pressure of a hazardous waste in a tank.

(1) 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 the standards specified in 265.1085(c) of this subpart.

(2) An owner or operator shall use either direct measurement as specified in paragraph (c)(3) of this section or knowledge of the waste as specified by paragraph (c)(4) of this section to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.

(3) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.

(i) Sampling. A sufficient number of samples shall be collected to be representative of the waste contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, (incorporated by reference-refer to 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, Appendix A.

(ii) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:

(A) Method 25E in 40 CFR part 60 Appendix A;

(B) Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," (incorporated by reference-refer to 260.11 of this chapter);

(C) Methods obtained from standard reference texts;

(D) ASTM Method 2879-92 (incorporated by reference-refer to 260.11 of this chapter); and

(E) Any other method approved by the Department.

(4) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the

maximum vapor pressure limit listed in 265.1085(b)(1)(i) of this subpart for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

(d) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart:

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, Appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: The interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve.

(2) The test shall be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, Appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, Appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air), and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than 10,000 ppmv methane or n-hexane. (11/99)

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60, Appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21 of 40 CFR part 60, Appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or

horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison shall be as specified in paragraph (d)(9) of this section. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(9) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.

265.1085 Standards: Tanks

(a) The provisions of this section apply to the control of air pollutant emissions from tanks for which 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements, as applicable:

(1) For a tank that manages hazardous waste that meets all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in paragraph (c) of this section or the Tank Level 2 controls specified in paragraph (d) of this section.

(i) 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:

(A) For a tank design capacity equal to or greater than 151 m³, the maximum organic vapor pressure limit for the tank is 5.2 kPa.

(B) For a tank design capacity equal to or greater than 75 m³ less than 151 m³, the maximum organic vapor pressure limit for the tank is 27.6 kPa.

(C) For a tank design capacity less than 75 m³, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

(ii) 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 paragraph (b)(1)(i) of this section.

(iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in 265.1081 of this subpart.

(2) For a tank that manages hazardous waste that does not meet all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, 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 (d) of this section. 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 paragraph (b)(1)(i) of this section.

(c) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in paragraphs (c)(1) through (c)(4) of this section:

(1) 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 265.1084(c) of this subpart. 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 paragraph (b)(1)(i) of this section, as applicable to the tank.

(2) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(i) 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).

(ii) 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.

(iii) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either: (11/99)

(A) 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

(B) 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 paragraphs (c)(2)(iii)(B)(1) and (2) of this section. (11/99)

(1) During periods it is necessary to provide access to the tank for performing the activities of paragraph (c)(2)(iii)(B)(2) of this section, venting of the vapor 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. (11/99)

(2) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank. (11/99)

(iv) 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.

(3) 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:

(i) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) 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.

(B) To remove accumulated sludge or other residues from the bottom of tank.

(ii) 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.

(iii) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

(i) 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.

(ii) 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 section. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in paragraph (l) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(b) of this subpart.

(d) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (e) of this section;

(2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (f) of this section;

(3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (g) of this section;

(4) A pressure tank designed and operated in accordance with the requirements specified in paragraph

(h) of this section; or

(5) 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 (i) of this section.

(e) 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 paragraphs (e)(1) through (e)(3) of this section.

(1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(i) 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.

(ii) 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:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in 265.1081 of this subpart; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(iii) The internal floating roof shall meet the following specifications:

(A) 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.

(B) 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.

(C) 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.

(D) Each automatic bleeder vent and rim space vent shall be gasketed.

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(F) 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.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) 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.

(ii) 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.

(iii) 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.

(3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(i) 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.

(ii) The owner or operator shall inspect the internal floating roof components as follows except as provided in paragraph (e)(3)(iii) of this section:

(A) 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

(B) 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.

(iii) As an alternative to performing the inspections specified in paragraph (e)(3)(ii) of this section 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 5 years.

(iv) Prior to each inspection required by paragraph (e)(3)(ii) or (e)(3)(iii) of this section, the owner or operator shall notify the Department in advance of each inspection to provide the Department with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Department of the date and location of the inspection as follows:

(A) 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 Department at least 30 calendar days before refilling the tank except when an inspection is not planned as

provided for in paragraph (e)(3)(iv)(B) of this section.

(B) 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 Department as soon as possible, but no later than 7 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 Department at least 7 calendar days before refilling the tank.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(b) of this subpart.

(4) Safety devices, as defined in 265.1081 of this subpart, may be installed and operated as necessary on any tank complying with the requirements of paragraph (e) of this section. (11/99)

(f) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) The owner or operator shall design the external floating roof in accordance with the following requirements:

(i) 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.

(ii) 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.

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in 265.1081 of this subpart. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm²) 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.

(B) 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 (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(iii) The external floating roof shall meet the

following specifications:

(A) 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.

(B) 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.

(C) 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.

(D) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

(E) 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.

(F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) 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.

(ii) 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.

(iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(iv) 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.

(v) 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.

(vi) 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.

(vii) 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.

(viii) 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.

(3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) 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 5 years.

(B) 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.

(C) If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of paragraphs (f)(3)(i)(A) and (f)(3)(i)(B) of this section.

(D) 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:

(1) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(2) 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.

(3) For a seal gap measured under paragraph (f)(3) of this section, 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.

(4) 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 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 paragraph (f)(1)(ii) of this section. (11/99)

(E) In the event that the seal gap measurements do not conform to the specifications in paragraph (f)(1)(ii) of this section, the owner or operator shall repair the defect in accordance with the

requirements of paragraph (k) of this section.

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(b) of this subpart.

(ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(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: 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.

(B) 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 section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(b) of this subpart.

(iii) Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this section, the owner or operator shall notify the Department in advance of each inspection to provide the Department with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Department of the date and location of the inspection as follows:

(A) Prior to each inspection to measure external floating roof seal gaps as required under paragraph (f)(3)(i) of this section, written notification shall be prepared and sent by the owner or operator so that it is received by the Department at least 30 calendar days before the date the measurements are scheduled to be performed.

(B) 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 Department at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (f)(3)(iii)(C) of this section.

(C) 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 Department

as soon as possible, but no later than 7 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 Department at least 7 calendar days before refilling the tank.

(4) Safety devices, as defined in 265.1081, may be installed and operated as necessary on any tank complying with the requirements of paragraph (f) of this section. (11/99)

(g) 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 paragraphs (g)(1) through (g)(3) of this section.

(1) 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:

(i) 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.

(ii) 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.

(iii) 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.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of 265.1088 of this subpart.

(2) 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:

(i) 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:

(A) 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.

(B) To remove accumulated sludge or other residues from the bottom of a tank.

(ii) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) 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.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 265.1088 of this subpart.

(iii) 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 section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(b) of this subpart.

(h) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(1) 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.

(2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in 265.1084(d) of this subpart.

(3) 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 or the following conditions as specified in paragraph (h)(3)(i) or (h)(3)(ii) of this section. (8/00)

(i) At those times when opening of a safety device, as defined in 265.1081 of this subpart, is required to avoid an unsafe condition. (8/00)

(ii) 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 265.1088 of this subpart. (8/00)

(i) 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 paragraphs (i)(1) through (i)(4) of this section.

(1) 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. 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" initially when the enclosure is first installed and, thereafter, annually.

(2) 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 265.1088 of this subpart.

(3) Safety devices, as defined in 265.1081 of this subpart, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (i)(1) and (i)(2) of this section.

(4) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in 265.1088 of this subpart.

(j) The owner or operator shall transfer hazardous waste to a tank subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (j)(2) of this section, to the tank from another tank subject to this section or from a surface impoundment subject to 265.1086 of this subpart 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.

(2) The requirements of paragraph (j)(1) of this section do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in 265.1083(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in 265.1083(c)(2) of this subpart.

(iii) The hazardous waste meets the requirements of 265.1083(c)(4) of this subpart. (11/99)

(k) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraphs (c)(4), (e)(3), (f)(3), or (g)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 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 paragraph (k)(2) of this section.

(2) 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.

(l) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(1) 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:

(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 section of this subpart, as frequently as practicable during those times when a worker can safely access the cover.

(2) 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 section, 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.

265.1086 Standards: surface impoundments

(a) The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(1) A floating membrane cover in accordance with the provisions specified in paragraph (c) of this section; or

(2) A cover that is vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (d) of this section. (11/99)

(c) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in paragraphs (c)(1) through (c)(3) of this section.

(1) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(i) 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.

(ii) The cover shall be fabricated from a synthetic membrane material that is either:

(A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

(B) 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 paragraph (c)(1)(ii)(A) of this section and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(iii) 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.

(iv) Except as provided for in paragraph (c)(1)(v) of this section, 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.

(v) 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.

(vi) 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.

(2) 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:

(i) Opening of closure devices or removal of the cover is allowed at the following times:

(A) 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 operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(B) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(ii) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(i) 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.

(ii) 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 section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(iv) The owner or operator shall maintain a

record of the inspection in accordance with the requirements specified in 265.1090(c) of this subpart.

(d) 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 paragraphs (d)(1) through (d)(3) of this section.

(1) 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:

(i) 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.

(ii) 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 265.1084(d) of this subpart.

(iii) 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 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. (11/99)

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of 265.1088 of this subpart.

(2) 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:

(i) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(A) 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.

(B) To remove accumulated sludge or other residues from the bottom of the surface impoundment. (11/99)

(ii) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) 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.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 265.1088 of this subpart.

(iii) 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 section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in 265.1090(c) of this subpart.

(e) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (e)(2) of this section, to the surface impoundment from another surface impoundment subject to this section or from a tank subject to 265.1085 of this subpart 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.

(2) The requirements of paragraph (e)(1) of this

section do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in 265.1083(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in 265.1083(c)(2) of this subpart.

(iii) The hazardous waste meets the requirements of 265.1083(c)(4) of this subpart. (11/99)

(f) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(3) or (d)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 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 paragraph (f)(2) of this section.

(2) 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 tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(g) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 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:

(1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(2) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable section of this subpart as frequently as practicable during those times when a worker can safely access the cover.

265.1087 Standards: Containers

(a) The provisions of this section apply to the control of air pollutant emissions from containers for which 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) General requirements.

(1) The owner or operator shall control air

pollutant emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (b)(2) of this section apply to the container.

(i) For a container having a design capacity greater than 0.1 m³ and less than or equal to 0.46 m³, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (c) of this section.

(ii) For a container having a design capacity greater than 0.46 m³ 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 (c) of this section.

(iii) For a container having a design capacity greater than 0.46 m³ 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 (d) of this section.

(2) When a container having a design capacity greater than 0.1 m³ 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 (e) of this section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

(c) Container Level 1 standards.

(1) A container using Container Level 1 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) 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 holes, 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).

(iii) 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.

(2) A container used to meet the requirements of paragraph (c)(1)(ii) or (c)(1)(iii) of this section 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 it 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.

(3) 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:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) 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.

(B) 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.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 261.7(b) 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).

(B) 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 261.7(b), 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.

(iii) 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.

(iv) 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 container internal pressure in accordance with the design specifications of the container. 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.

(v) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(i) 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 within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 261.7(b)), 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 subpart CC

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 the Appendix to part 262 (EPA Forms 8700-22 and 8700-22A, as required under subpart E of this part, at 265.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section. (11/99)

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 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 paragraph (c)(4)(iii) of this section.

(iii) 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 5 calendar days after detection. If repair of a defect cannot be completed within 5 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) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m³ or greater, which do not meet applicable DOT regulations as specified in paragraph (f) of this section, are not managing hazardous waste in light material service.

(d) Container Level 2 standards.

(1) A container using Container Level 2 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) A container that operates with no detectable organic emissions as defined in 265.1081 of this subpart and determined in accordance with the procedure specified in paragraph (g) of this section.

(iii) 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 in accordance with the procedure specified in paragraph (h) of this section.

(2) 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 EPA 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.

(3) 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:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) 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.

(B) 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.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 261.7(b) 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).

(B) 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 261.7(b), 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.

(iii) 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.

(iv) 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 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.

(v) Opening of a safety device, as defined in 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(i) 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 within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 261.7(b)), 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 subpart CC 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 the Appendix to part 262 (Forms 8700-22 and 8700-22A), as required under subpart E of this part, at 265.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section. (11/99)

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 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 paragraph (d)(4)(iii) of this section.

(iii) 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 5 calendar days after detection. If repair of a defect cannot be completed within 5 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.

(e) Container Level 3 standards.

(1) A container using Container Level 3 controls is one of the following:

(i) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraph (e)(2)(ii) of this section.

(ii) 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 paragraphs (e)(2)(i) and (e)(2)(ii) of this section.

(2) 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:

(i) 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. 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.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of 265.1088 of this subpart.

(3) Safety devices, as defined in 265.1081 of this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (e)(1) of this section.

(4) Owners and operators using Container Level 3 controls in accordance with the provisions of this subpart shall inspect and monitor the closed-vent systems and control devices as specified in 265.1088 of this subpart.

(5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this subpart shall prepare and maintain the records specified in 265.1090(d) of this subpart.

(6) 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 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. (8/00)

(f) For the purpose of compliance with paragraph (c)(1)(i) or (d)(1)(i) of this section, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178-Specifications for Packaging or 49 CFR part 179-Specifications for Tank Cars.

(2) 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.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

(g) To determine compliance with the no detectable organic emissions requirements of paragraph (d)(1)(ii) of this section, the procedure specified in 265.1084(d) of this subpart shall be used. (11/99)

(1) 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.

(2) 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.

(h) Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR part 60, Appendix A for the purpose of complying with paragraph (d)(1)(iii) of this section.

(1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, Appendix A of this chapter.

(2) A pressure measurement device shall be used that has a precision of " 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

265.1088 Standards: Closed-vent systems and control devices

(a) This section 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 subpart.

(b) The closed-vent system shall meet the following requirements:

(1) 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 (c) of this section.

(2) The closed-vent system shall be designed and operated in accordance with the requirements specified

in 265.1033(j) of this part.

(3) 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 paragraph (b)(3)(i) of this section or a seal or locking device as specified in paragraph (b)(3)(ii) of this section. 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.

(i) If a flow indicator is used to comply with paragraph (b)(3) of this section, 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 paragraph, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(ii) If a seal or locking device is used to comply with paragraph (b)(3) of this section, 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.

(4) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in 265.1033(k).

(c) The control device shall meet the following requirements:

(1) The control device shall be one of the following devices:

(i) 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;

(ii) An enclosed combustion device designed and operated in accordance with the requirements of 265.1033(c); or

(iii) A flare designed and operated in accordance with the requirements of 265.1033(d).

(2) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the requirements specified in paragraphs (c)(2)(i) through (c)(2)(vi) of this section.

(i) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall

not exceed 240 hours per year.

(ii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during periods of planned routine maintenance.

(iii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during a control device system malfunction.

(iv) The owner or operator shall demonstrate compliance with the requirements of paragraph (c)(2)(i) of this section (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall not exceed 240 hours per year) by recording the information specified in 265.1090(e)(1)(v) of this subpart.

(v) 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.

(vi) The owner or operator shall operate the closed-vent system such that gases, vapors, and/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, or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

(3) The owner or operator using a carbon adsorption system to comply with paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the following requirements:

(i) 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 265.1033(g) or 265.1033(h).

(ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of 265.1033(m), regardless of the average volatile organic concentration of the carbon. (11/99)

(4) 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 paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the requirements of 265.1033(i).

(5) The owner or operator shall demonstrate that a control device achieves the performance requirements of paragraph (c)(1) of this section as follows:

(i) An owner or operator shall demonstrate using either a performance test as specified in paragraph (c)(5)(iii) of this section or a design analysis as specified in paragraph (c)(5)(iv) of this section the performance of

each control device except for the following:

(A) A flare;

(B) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;

(C) A boiler or process heater into which the vent stream is introduced with the primary fuel;

(D) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under part 270 and has designed and operates the unit in accordance with the requirements of part 266, subpart H; or

(E) 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 part 266, subpart H.

(ii) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in 265.1033(e).

(iii) For a performance test conducted to meet the requirements of paragraph (c)(5)(i) of this section, the owner or operator shall use the test methods and procedures specified in 265.1034(c)(1) through (c)(4).

(iv) For a design analysis conducted to meet the requirements of paragraph (c)(5)(i) of this section, the design analysis shall meet the requirements specified in 265.1035(b)(4)(iii).

(v) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of paragraph (c)(1) of this section 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.

(6) If the owner or operator and the Department 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 paragraph (c)(5)(iii) of this section. The Department may choose to have an authorized representative observe the performance test.

(7) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 265.1033(f)(2) and 265.1033(k). The readings from each monitoring device required by 265.1033(f)(2) 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 section. (11/99)

265.1089 Inspection and monitoring requirements

(a) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subpart in accordance with the applicable requirements

specified in 265.1085 through 265.1088 of this subpart.

(b) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by paragraph (a) of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under 265.15.

265.1090 Recordkeeping requirements

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the information specified in paragraphs (b) through (j) of this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraphs (i) and (j) of this section, records required by this section shall be maintained in the operating record for a minimum of 3 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 (i) and (j) of this section shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in 265.1080(d) or 265.1080(b)(7), respectively. (9/01)

(b) The owner or operator of a tank using air emission controls in accordance with the requirements of 265.1085 of this subpart shall prepare and maintain records for the tank that include the following information:

(1) For each tank using air emission controls in accordance with the requirements of 265.1085 of this subpart, the owner or operator shall record:

(i) A tank identification number (or other unique identification description as selected by the owner or operator).

(ii) A record for each inspection required by 265.1085 of this subpart that includes the following information:

(A) Date inspection was conducted.

(B) For each defect detected during the inspection, 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 265.1085 of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected. (11/99)

(2) In addition to the information required by paragraph (b)(1) of this section, the owner or operator shall record the following information, as applicable to the tank:

(i) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in 265.1085(c) of this subpart 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 265.1085(c) of this subpart. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

(ii) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in 265.1085(e) of this subpart shall prepare and maintain documentation describing the floating roof design.

(iii) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in 265.1085(f) of this subpart shall prepare and maintain the following records:

(A) Documentation describing the floating roof design and the dimensions of the tank.

(B) Records for each seal gap inspection required by 265.1085(f)(3) of this subpart 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 265.1085(f)(1) of this subpart, 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.

(iv) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in 265.1085(i) of this subpart shall prepare and maintain the following records:

(A) 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.

(B) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of 265.1086 of this subpart shall prepare and maintain records for the surface impoundment that include the following information:

(1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

(2) 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 265.1086(c) of this subpart.

(3) A record for each inspection required by 265.1086 of this subpart that includes the following information:

(i) Date inspection was conducted.
 (ii) 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 265.1086(f) of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(4) 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 (e) of this section.

(d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of 265.1087 of this subpart shall prepare and maintain records that include the following information:

(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.

(2) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(e) The owner or operator using a closed-vent system and control device in accordance with the requirements of 265.1088 of this subpart shall prepare and maintain records that include the following information:

(1) Documentation for the closed-vent system and control device that includes:

(i) 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 paragraph (e)(1)(ii) of this section or by performance tests as specified in paragraph (e)(1)(iii) of this section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(ii) If a design analysis is used, then design documentation as specified in 265.1035(b)(4). 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 265.1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.

(iii) If performance tests are used, then a performance test plan as specified in 265.1035(b)(3) and

all test results.

(iv) Information as required by 265.1035(c)(1) and 265.1035(c)(2), as applicable.

(v) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (e)(1)(v)(A) and (e)(1)(v)(B) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6-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 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable, due to planned routine maintenance.

(vi) An owner or operator shall record the information specified in paragraphs (e)(1)(vi)(A) through (e)(1)(vi)(C) of this section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) The occurrence and duration of each malfunction of the control device system.

(B) 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.

(C) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(vii) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with 265.1088(c)(3)(ii) of this subpart.

(f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of 265.1083(c) of this subpart shall prepare and maintain the following records, as applicable:

(1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in 265.1083(c)(1) or 265.1084(c)(2)(i) through (c)(2)(vi) of this subpart, 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 265.1084 of this subpart. (11/99)

(2) For tanks, surface impoundments, or containers exempted under the provisions of 265.1083(c)(2)(vii) or 265.1083(c)(2)(viii) of this subpart, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated. (8/00)

(g) An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to 265.1085(l) or 265.1086(g) of this subpart 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.

(h) The owner or operator of a facility that is subject to this subpart and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of this subpart by documentation either pursuant to this subpart, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by parts 60 or 61 duplicates the documentation required by this section.

(i) For each tank or container not using air emission controls specified in 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in 265.1080(d) of this subpart, the owner or operator shall record and maintain the following information:

(1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in 265.1080(d)(1).

(2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section are managed at the facility in tanks and containers. This description shall include the following information:

(i) 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.

(ii) 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.

(3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section in the tanks and containers as described in paragraph (i)(2) of this section would create an undue safety hazard if the air emission controls, as required under 265.1085 through 265.1088 of this subpart, are installed and operated on these waste management units. This explanation shall include the following information:

(i) 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 subpart, 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.

(ii) 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 air emission controls, as allowed under this subpart, 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.

(j) For each hazardous waste management unit not using air emission controls specified in 265.1085 through 265.1088 of this subpart in accordance with the provisions of 265.1080(b)(7) of this subpart, the owner and operator shall record and maintain the following information: (11/99)

(1) 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.

(2) Identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63 with which the waste management unit is in compliance.

265.1091 [Reserved 9/98]

Subpart DD - CONTAINMENT BUILDINGS (12/93)

265.1100 Applicability (12/93)

The requirements of this subpart apply to owners or

operators who store or treat hazardous waste in units designed and operated under 265.1101 of this subpart. These provisions will become effective on February 18, 1993, although the owner or operator may notify the Department of his intent to be bound by this subpart at an earlier time. The owner or operator is not subject to the definition of land disposal in RCRA section 3004(k) provided that the unit:

(a) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units, 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;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

(1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

(2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

(3) 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 possible time, unless the unit has been granted a variance from the secondary containment system requirements under 265.1101(b)(4);

(d) Has controls as needed to prevent fugitive dust emissions; and

(e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

265.1101 Design and operating standards (12/93)

(a) All containment buildings must comply with the following design standards:

(1) 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.

(2) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (b) of this section, 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. The Department and EPA 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 lightweight doors and windows that meet these criteria:

(i) They provide an effective barrier against fugitive dust emissions under paragraph (c)(1)(iv); and

(ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(3) 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.

(4) 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 the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

(b) 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:

(1) 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).

(2) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:

(i) The primary barrier must be sloped to drain liquids to the associated collection system; and

(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.

(3) 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.

(i) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

(A) Constructed with a bottom slope of 1 percent or more; and

(B) Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-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 3×10^{-5} m²/sec or more.

(ii) If treatment is to be conducted in the building, an 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.

(iii) 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 265.193(d)(1). In addition, the containment building must meet the requirements of 265.193 (b) and (c) to be considered an acceptable secondary containment system for a tank.)

(4) For existing units other than 90-day generator units, the Department may 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 Subpart. In making this demonstration, the owner or operator must:

(i) Provide written notice to the Department of their request by February 18, 1993. 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;

(ii) Respond to any comments from the Department on these plans within 30 days; and

(iii) Fulfill the terms of the revised plans, if such plans are approved by the Department.

(c) Owners or operators of all containment buildings must:

(1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(i) 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;

(ii) 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;

(iii) 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 rinseate must be collected and properly managed; and

(iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.

(2) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of paragraphs (a) through (c) of this section. For units placed into operation prior to February 18, 1993, this certification must be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records) no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit.

(3) 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, must repair the condition promptly, in accordance with the following procedures.

(i) 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:

(A) Enter a record of the discovery in the facility operating record;

(B) Immediately remove the portion of the containment building affected by the condition from service;

(C) 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

(D) Within 7 days after the discovery of the condition, notify the Department of the condition, and within 14 working days, provide a written notice to the Department with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(ii) The Department 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.

(iii) Upon completing all repairs and cleanup the owner or operator must notify the Department in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (c)(3)(i)(D) of this section.

(4) 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 building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(d) For containment building that contains both areas with and without secondary containment, the owner or operator must:

(1) Design and operate each area in accordance with the requirements enumerated in paragraphs (a) through (c) of this section;

(2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(3) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(e) Notwithstanding any other provision of this subpart, the Department 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.

265.1102 Closure and post-closure care (12/93)

(a) 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 261.3(d) of this chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in subparts G and H of this part.

(b) 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 (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (265.310). 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 subparts G and H of this part.

265.1103 - 265.1110 [Reserved]

Subpart EE - HAZARDOUS WASTE MUNITIONS AND EXPLOSIVES STORAGE (9/98)

265.1200 Applicability

The requirements of this subpart apply to owners or operators who store munitions and explosive hazardous wastes, except as 265.1 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 (part 265, subpart DD), tanks (part 265, subpart J), or containers (part 265, subpart I); See 266.205 for storage of waste military munitions).

265.1201 Design and operating standards

(a) Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:

(1) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated runoff, to the soil, ground water, surface water, and atmosphere;

(2) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

(3) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

(4) 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

(5) 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.

(b) Hazardous waste munitions and explosives stored under this subpart may be stored in one of the following:

(1) Earthcovered magazines. Earthcovered magazines must be:

(i) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(ii) Designed and constructed:

(A) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

(B) To provide working space for personnel and equipment in the unit; and

(C) To withstand movement activities that occur in the unit; and

(iii) 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.

(2) Aboveground magazines. Aboveground 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.

(3) 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.

(c) 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 265.14, the preparedness and prevention procedures of part 265, subpart C, and the contingency plan and emergency procedures requirements of part 265, subpart D, then these procedures will be used to fulfill those requirements.

(d) Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

(e) Hazardous waste munitions and explosives must be inventoried at least annually.

(f) 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.

265.1202 Closure and postclosure care

(a) At closure of a magazine or unit which stored hazardous waste under this subpart, 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 261.3(d) of this chapter 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 subparts G and H of this part, 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.

(b) 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 (a) of

this section, 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 postclosure care in accordance with the closure and postclosure requirements that apply to landfills (264.310).

Appendix I - Recordkeeping Instructions

The recordkeeping provisions of 265.73 specify that an owner or operator must keep a written operating record at his facility. This Appendix provides additional instructions for keeping portions of the operating record. See 265.73(b) for additional recordkeeping requirements. (revised 12/92)

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from part 261 of this chapter which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in part 261 subpart D, of this chapter, the description also must include the process that produced it (for example, solid filter cake from production of xxx, EPA Hazardous Waste Number W051).

Each hazardous waste listed in part 261, subpart D, of this chapter, and each hazardous waste characteristic defined in part 261, subpart C, of this chapter, has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1: (revised 12/94)

Appendix I - Table 1 Units of Measure

Units of Measure (12/94)	Code ¹
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters per Hour	H
Liters per Day	V
Short Tons per Hour	D
Metric Tons per Hour	W
Short Tons per Day	N
Metric Tons per Day	S
Pounds per Hour	J
Kilograms per Hour	R
Cubic Yards	Y

Units of Measure (12/94)	Code ¹
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

¹ Single digit symbols are used here for data processing purposes.

(3) The methods (by handling code/s as specified in Table 2) and date(s) of treatment, storage or disposal. (revised 12/94)

Appendix I - Table 2 - Handling Codes For Treatment, Storage, And Disposal Methods (12/94)

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

- | | | |
|------------------------------------|---------------------------------------|--|
| 1. Storage | (c) Physical Treatment- | (d) Biological Treatment |
| S01 Container (barrel, drum, etc.) | (1) Separation of components: | T67 Activated sludge |
| S02 Tank | T35 Centrifugation | T68 Aerobic lagoon |
| S03 Waste Pile | T36 Clarification | T69 Aerobic tank |
| S04 Surface Impoundment | T37 Coagulation | T70 Anaerobic tank |
| S05 Drip Pad | T38 Decanting | T71 Composting |
| S06 Containment Building (Storage) | T39 Encapsulation | T72 Septic Tank |
| S99 Other Storage (Specify) | T40 Filtration | T73 Spray irrigation |
| | T41 Flocculation | T74 Thickening filter |
| 2. Treatment | T42 Flotation | T75 Tricking filter |
| (a) Thermal Treatment - | T43 Foaming | T76 Waste stabilization pond |
| T06 Liquid injection incinerator | T44 Sedimentation | T77 Other (specify) |
| T07 Rotary kiln incinerator | T45 Thickening | T78 [Reserved] |
| T08 Fluidized bed incinerator | T46 Ultrafiltration | T79 [Reserved] |
| T09 Multiple hearth incinerator | T47 Other (specify) | |
| T10 Infrared furnace incinerator | | (e) Boilers and Industrial Furnaces |
| T11 Molten salt destructor | (2) Removal of Specific Components: | T80 Boiler |
| T12 Pyrolysis | T48 Absorption-molecular sieve | T81 Cement Kiln |
| T13 Wet air oxidation | T49 Activated carbon | T82 Lime Kiln |
| T14 Calcination | T50 Blending | T83 Aggregate Kiln |
| T15 Microwave discharge | T51 Catalysis | T84 Phosphate Kiln |
| T18 Other (specify) | T52 Crystallization | T85 Coke Oven |
| | T53 Dialysis | T86 Blast Furnace |
| (b) Chemical Treatment- | T54 Distillation | T87 Smelting, Melting, or Refining Furnace |
| T19 Absorption mound | T55 Electrodialysis | T88 Titanium Dioxide Chloride Process Oxidation Reactor |
| T20 Absorption field | T56 Electrolysis | T89 Methane Reforming Furnace |
| T21 Chemical fixation | T57 Evaporation | T90 Pulping Liquor Recovery Furnace |
| T22 Chemical Oxidation | T58 High gradient magnetic separation | T91 Combustion Device Used in the recovery of Sulfur Values from Spent Sulfuric Acid |
| T23 Chemical precipitation | T59 Leaching | T92 Halogen Acid Furnaces |
| T24 Chemical reduction | T60 Liquid Ion exchange | T93 Other Industrial Furnaces Listed in 260.10 (specify) |
| T25 Chlorination | T61 Liquid-liquid extraction | |
| T26 Chlorinolysis | T62 Reverse osmosis | |
| T27 Cyanide destruction | T63 Solvent recovery | |
| T28 Degradation | T64 Stripping | |
| T29 Detoxification | T65 Sand filter | |
| T30 Ion exchange | T66 Other (specify) | |
| T31 Neutralization | | |
| T32 Ozonation | | |
| T33 Photolysis | | |
| T34 Other (specify) | | |

- (f) Other Treatment
- T94 Containment Building (Treatment)
- 3. Disposal
- D79 Underground Injection
- D80 Landfill
- D81 Land Treatment
- D82 Ocean Disposal
- D83 Surface Impoundment (to be closed as a landfill)
- D99 Other Disposal (specify)
- 4. Miscellaneous (Subpart X)
- X01 Open Burning/Open Detonation
- X02 Mechanical Processing
- X03 Thermal Unit
- X04 Geologic Repository
- X99 Other Subpart X (specify)

Appendix II - [Reserved]

Appendix III - EPA Interim Primary Drinking Water Standards

Parameter	Max. level (mg/l)
Arsenic	0.05
Barium.....	1.0
Cadmium.....	0.01
Chromium.....	0.05
Fluoride.....	1.4 to 2.4
Lead.....	0.05
Mercury.....	0.002
Nitrate (as N).....	10.
Selenium.....	0.01
Silver.....	0.05
Endrin.....	0.0002
Lindane.....	0.004
Methoxychlor.....	0.1
Toxaphene.....	0.005
2,4-D.....	0.1
2,4,5-TP Silver.....	0.01
Radium.....	5. pCi/l
Gross Alpha.....	15. pCi/l
Gross Beta.....	4. millirem/yr
Turbidity.....	1/TU
Coliform Bacteria....	1/100 ml

[Comment: Turbidity is applicable only to surface water supplies.]

Appendix IV - Tests For Significance

As required in 265.93(b) the owner or operator must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic groundwater samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon, and total organic halogen) a single-tailed Student's t-test must be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance. The student's t-test involves calculation of the value of a t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value of t found in the table indicates a statistically significant change in the concentration or value of the indicator parameter. Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

Appendix V - Examples Of Potentially Incompatible Waste

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases. Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not. It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalines	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A	Group 2-B
Aluminum Beryllium Calcium Lithium Magnesium Potassium Sodium Zinc powder Other reactive metals and metal hydrides	Any waste in Group 1-A or 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A	Group 3-B
Alcohols Water	Any concentrated waste in Groups 1-A or 1-B Calcium Lithium Metal hydrides Potassium SO ₂ Cl ₂ , SOCl ₂ , PCl ₃ , CH ₃ SiCl ₃ Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A	Group 4-B
Alcohols Aldehydes Halogenated hydrocarbons Nitrated hydrocarbons Unsaturated hydrocarbons Other reactive organic compounds and solvents	Concentrated Group 1-A or 1-B wastes Group 2-A wastes

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions	Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A	Group 6-B
Chlorates Chlorine Chlorites Chromic acid Hypochlorites Nitrates Nitric acid, fuming Perchlorates Permanganates Peroxides Other strong oxidizers	Acetic acid and other organic acids Concentrated mineral acids Group 2-A wastes Group 4-A wastes Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

Source: "Law, Regulations, and Guidelines for Handling of Hazardous Waste." California Department of Health, February 1975.

Appendix VI - Compounds With Henry's Law Constant Less Than 0.1 Y/X

COMPOUND NAME (9/98, 11/99)	CAS NO.
Acetaldo	107-89-1
Acetamide	60-35-5
2-Acetylaminofluorene	53-96-3
3-Acetyl-5-hydroxypiperidine	
3-Acetylpiperidine	618-42-8
1-Acetyl-2-thiourea	591-08-2
Acrylamide	79-06-1
Acrylic acid	79-10-7
Adenine	73-24-5
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alachlor	15972-60-8
Aldicarb	116-06-3
Ametryn	834-12-8
4-Aminobiphenyl	92-67-1
4-Aminopyridine	504-24-5
Aniline	62-53-3
o-Anisidine	90-04-0
Anthraquinone	84-65-1
Atrazine	1912-24-9
Benzeneearsonic acid	98-05-5
Benzenesulfonic acid	98-11-3
Benidine	92-87-5
Benzo(a)anthracene	56-55-3
Benzo(k)fluoranthene	207-08-9
Benzoic acid	65-85-0
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzyl alcohol	100-51-6
gamma-BHC	58-89-9
Bis(2-ethylhexyl)phthalate	117-81-7
Bromochloromethyl acetate	
Bromoxynil	1689-84-5
Butyric acid	107-92-6
Caprolactam (hexahydro-2H-azepin-2-one)	105-60-2
Catechol (o-dihydroxybenzene)	120-80-9
Cellulose	9004-34-6
Cell wall	
Chlorhydrin (3-Chloro-1,2-propanediol)	96-24-2
Chloroacetic acid	79-11-8
2-Chloroacetophenone	93-76-5

Appendix VI - Compounds With Henry's Law Constant Less Than 0.1 Y/X

COMPOUND NAME (9/98, 11/99)	CAS NO.	COMPOUND NAME (9/98, 11/99)	CAS NO.
p-Chloroaniline	106-47-8	Ethylene glycol	107-21-1
p-Chlorobenzophenone	134-85-0	Ethylene glycol monobutyl ether (butyl Cellosolve)	111-76-2
Chlorobenzilate	510-15-6	Ethylene glycol monoethyl ether (Cellosolve)	110-80-5
p-Chloro-m-cresol (6-chloro-m-cresol)	59-50-7	Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111-15-9
3-Chloro-2,5-diketopyrrolidine		Ethylene glycol monomethyl ether (methyl Cellosolve)	109-86-4
Chloro-1,2-ethane diol		Ethylene glycol monophenyl ether (phenyl Cellosolve)	122-99-6
4-Chlorophenol	106-48-9	Ethylene glycol monopropyl ether (propyl Cellosolve)	2807-30-9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95-57-8 & 106-48-9	Ethylene thiourea (2-imidazolidinethione)	9-64-57
1-(o-Chlorophenyl)thiourea	5344-82-1	4-Ethylmorpholine	100-74-3
Chrysene	218-01-9	3-Ethylphenol	620-17-7
Citric acid.	77-92-9	Fluoroacetic acid, sodium salt	62-74-8
Creosote	8001-58-9	Formaldehyde	50-00-0
m-Cresol	108-39-4	Formamide	75-12-7
o-Cresol	95-48-7	Formic acid	64-18-6
p-Cresol	106-44-5	Fumaric acid.	110-17-8
Cresol (mixed isomers)	1319-77-3	Glutaric acid	110-94-1
4-Cumylphenol	27576-86	Glycerin (Glycerol)	56-81-5
Cyanide	57-12-5	Glycidol	556-52-5
4-Cyanomethyl benzoate		Glycinamide	598-41-4
Diazinon	333-41-5	Glyphosate	1071-83-6
Dibenzo(a,h)anthracene	53-70-3	Guthion	86-50-0
Dibutylphthalate	84-74-2	Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822-06-0
2,5-Dichloroaniline (N,N'-dichloroaniline)	95-82-9	Hexamethyl phosphoramidate.	680-31-9
2,6-Dichlorobenzonitrile	1194-65-6	Hexanoic acid	142-62-1
2,6-Dichloro-4-nitroaniline	99-30-9	Hydrazine	302-01-2
2,5-Dichlorophenol	333-41-5	Hydrocyanic acid	74-90-8
3,4-Dichlorotetrahydrofuran	3511-19	Hydroquinone	123-31-9
Dichlorvos (DDVP)	62737	Hydroxy-2-propionitrile (hydracrylonitrile)	109-78-4
Diethanolamine	111-42-2	Indeno (1,2,3-cd) pyrene	193-39-5
N,N-Diethylaniline	91-66-7	Lead acetate	301-04-2
Diethylene glycol	111-46-6	Lead subacetate (lead acetate, monobasic)	1335-32-6
Diethylene glycol dimethyl ether (dimethyl Carbitol)	111-96-6	Leucine	61-90-5
Diethylene glycol monobutyl ether (butyl Carbitol)	112-34-5	Malathion	121-75-5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112-15-2	Maleic acid	110-16-7
Diethylene glycol monoethyl ether (Carbitol Cellosolve)	111-90-0	Maleic anhydride	108-31-6
Diethylene glycol monomethyl ether (methyl Carbitol)	111-77-3	Mesityl oxide	141-79-7
N,N'-Diethylhydrazine	1615-80-1	Methane sulfonic acid	75-75-2
Diethyl (4-methylumbelliferyl) thionophosphate	299-45-6	Methomyl	16752-77-5
Diethyl phosphorothioate	126-75-0	p-Methoxyphenol	150-76-5
N,N'-Diethylpropionamide	15299-99-7	Methyl acrylate	96-33-3
Dimethoate	60-51-5	4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
2,3-Dimethoxystrychnidin-10-one	357-57-3	4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101-68-8
4-Dimethylaminoazobenzene	60-11-7	4,4'-Methylenedianiline	101-77-9
7,12-Dimethylbenz(a)anthracene	57-97-6	Methylene diphenylamine (MDA)	
3,3-Dimethylbenzidine	119-93-7	5-Methylfurfural	620-02-0
Dimethylcarbamoyl chloride	79-44-7	Methylhydrazine	60-34-4
Dimethyldisulfide	624-92-0	Methyliminoacetic acid	
Dimethylformamide	68-12-2	Methyl methane sulfonate	66-27-3
1,1-Dimethylhydrazine	57-14-7	1-Methyl-2-methoxyaziridine	
Dimethylphthalate	131-11-3	Methylparathion	298-00-0
Dimethylsulfone	67-71-0	Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77-78-1
Dimethylsulfoxide	67-68-5	4-Methylthiophenol	106-45-6
4,6-Dinitro-o-cresol	534-52-1	Monomethylformamide (N-methylformamide)	123-39-7
1,2-Diphenylhydrazine	122-66-7	Nabam	142-59-6
Dipropylene glycol (1,1'-oxydi-2-propanol)	110-98-5	alpha-Naphthol	90-15-3
Endrin	72-20-8	beta-Naphthol	135-19-3
Epinephrine	51-43-4	alpha-Naphthylamine	134-32-7
mono-Ethanolamine	141-43-5		
Ethyl carbamate (urethane)	5-17-96		

Appendix VI - Compounds With Henry's Law Constant Less Than 0.1 Y/X

COMPOUND NAME (9/98, 11/99)	CAS NO.	COMPOUND NAME (9/98, 11/99)	CAS NO.
beta-Naphthylamine	91-59-8	Pyridinium bromide	39416-48-3
Neopentyl glycol (dimethylolpropane)	126-30-7	Quinoline	91-22-5
Niacinamide	98-92-0	Quinone (p-benzoquinone)	106-51-4
o-Nitroaniline	88-74-4	Resorcinol	108-46-3
Nitroglycerin	55-63-0	Simazine	122-34-9
2-Nitrophenol	88-75-5	Sodium acetate	127-09-3
4-Nitrophenol	100-02-7	Sodium formate	141-53-7
N-Nitrosodimethylamine	62-75-9	Strychnine	57-24-9
Nitrosoguanidine	674-81-7	Succinic acid	110-15-6
N-Nitroso-n-methylurea	684-93-5	Succinimide	123-56-8
N-Nitrosomorpholine (4-nitrosomorpholine)	59-89-2	Sulfanilic acid	121-47-1
Oxalic acid	144-62-7	Terephthalic acid	100-21-0
Parathion	56-38-2	Tetraethyldithiopyrophosphate	3689-24-5
Pentaerythritol	115-77-5	Tetraethylenepentamine	112-57-2
Phenacetin	62-44-2	Thiofanox	39196-18-4
Phenol	108-95-2	Thiosemicarbazide	79-19-6
Phenylacetic acid	103-82-2	2,4-Toluenediamine	95-80-7
m-Phenylene diamine	108-45-2	2,6-Toluenediamine	823-40-5
o-Phenylene diamine	95-54-5	3,4-Toluenediamine	496-72-0
p-Phenylene diamine	106-50-3	2,4-Toluene diisocyanate	584-84-9
Phenyl mercuric acetate	62-38-4	p-Toluic acid	99-94-5
Phorate	298-02-2	m-Toluidine	108-44-1
Phthalic anhydride	85-44-9	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
alpha-Picoline (2-methyl pyridine)	109-06-8	Triethanolamine	102-71-6
1,3-Propane sulfone	1120-71-4	Triethylene glycol dimethyl ether	
beta-Propiolactone	57-57-8	Tripropylene glycol	24800-44-0
Proporur (Baygon)		Warfarin	81-81-2
Propylene glycol	57-55-6	3,4-Xylenol (3,4-dimethylphenol)	95-65-8
Pyrene	129-00-0		