Virginia Department of Environmental Quality
Land Division
Office of Financial Responsibility and Waste Programs

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Draft Closure Guidance - Wood Treatment Facilities - Hazardous Waste Drip Pads

1.0 Introduction

Wood treatment facilities using chromated copper arsenate (CCA) are hazardous waste management facilities that are subject to specific regulatory requirements under the Virginia Hazardous Waste Management Regulations (VHWMR) and the Resource Conservation and Recovery Act (RCRA) Regulations by reference with specific limitations under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

In accordance with a change in the CCA product registrations under the FIFRA, wood that is intended for use in specific residential settings may no longer be treated with CCA after December 30, 2003. However, under FIFRA, CCA treated wood may still be used in products intended for agriculture, marine, and specified construction and building purposes etc.

As a result of the above change in registered uses of CCA wood, effective December 31, 2003, many wood treatment plants that use CCA preservative should be compelled to convert to an alternate preservative, which does not result in the generation of a F035 hazardous waste. In order to avoid using the F035 waste code after the process conversion, CCA wood treatment facilities would be required to undergo specific “closure” requirements (under RCRA) for their drip pad hazardous waste management units (HWMUs).

Under RCRA, the term “closure” does not refer to the closing of the wood treatment plant or facility but refers to the cleaning (decontamination) or removal of hazardous waste and hazardous waste constituents from the HWMU drip pad system components and media that is contaminated by F035 listed hazardous wastes. These drip pad system components include: the drip pads or primary containment system, the secondary liner or containment system (if any), and the sumps, piping, pumps, tanks, and other equipment used in the primary and/or secondary containment systems. Under RCRA closure, media typically includes any soils, subsoils, and sediments that may have been contaminated with CCA from operation of the HWMU.

The RCRA regulatory requirements for wood treating facilities that use or have used CCA but have not gone through closure of the HWMU include but are not limited to generator requirements under 40 CFR Part 262, waste accumulation, record-keeping, and closure requirements under 40 CFR §262.17(a) and 262.17(a)(3) for Large Quantity Generators(LQGs), and the associated closure requirements found in 262.17(a)(8) for LQGs and 262.16 for Small Quantity Generators (SQGs). The applicable unit-specific facility requirements under 40 CFR Part 265, Subpart W, Drip Pads would also apply. These CCA facilities may continue to manage the F035 listed hazardous waste in their hazardous waste management unit(s) (HWMUs) and temporary waste storage areas, and they may accumulate this waste on-site for 90 days or less (LQGs) or 180 days (SQGs) without a permit or without having interim status provided that the facility complies with the requirements of 40 CFR §262.16, 262.17 and 40 CFR Part 265, Subpart W.

Under 40 CFR Part 265, Subpart W, unit-specific drip pad facility requirements are specified for the following items: the drip pad facility design, the construction and installation, the operation and maintenance, the inspections, the evaluations and certifications by an independent professional engineer (P.E.), the recordkeeping, and the closure of the HWMUs. Some unit-specific recordkeeping requirements

are also specified under §262.17(a)(3).

To help facilitate and ensure proper closure of drip pad HWMUs in accordance with the requirements of the VHWMR, DEQ has developed this closure guidance summary and a companion closure guidance fact sheet. Please note that this guidance is not a substitute for the requirements of the VHWMR but is designed to supplement the regulations and to help provide clarification regarding the requirements associated with closure of HWMUs at CCA wood treatment facilities. Therefore, this closure guidance summary should be useful for DEQ's hazardous waste staff, owners and operators of CCA wood treatment facilities, and consultants in the Commonwealth of Virginia.

Please note that this closure guidance summary and fact sheet are applicable to the drip pad HWMUs that are in full compliance with the less-than-90-day generator requirements. Facilities not in compliance with all requirements for generators and 40 CFR Part 265, Subpart W are subject to the full closure requirements of 40 CFR Part 264/265.

Please note that the wood preserving processing equipment (i.e., equipment contaminated with CCA product materials) and other product storage areas are not addressed or covered by this guidance. Such production processing equipment may include retort vessels, product storage tanks, piping, pumps, valves, trams, forklifts, etc. It is the CCA drip pad facility's responsibility to ensure that the production processing equipment and other production areas are properly cleaned and managed, and that wastes generated from such operations are properly disposed so that they do not pose a threat to human health or the environment.

In accordance with the Hazardous and Solid Waste Amendments (HSWA) of the RCRA of 1984, the EPA retains the authority to address possible corrective action (CA) of past or future releases from facilities that are not in compliance with the requirements of 40 CFR 262.17(a)(8) and Part 265,Subpart W, and from facilities which cannot clean close.

If you should have any questions, please contact the appropriate DEQ Regional Office Land Protection Manager.

2.0 Closure Requirements

CCA facilities are required to close their drip pad HWMUs and other less than 90-day hazardous waste storage areas in accordance with: 1) 40 CFR §265.111, Closure Performance Standards, 2) §265.114, Disposal or Decontamination of Equipment, Structures, and Soils, and 3) 40 CFR Part 265 Subpart W, Drip Pads, §265.445, Closure, as applicable. **(The text of the above RCRA regulatory citations is provided in the Appendix A and B of this Closure Guidance Summary.)**

The closure requirements under 40 CFR Part 265, Subpart W, §265.445, specify that *the owner and operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.* The HWMU equipment includes but is not limited to ancillary piping and fittings, sumps, pumps, tanks, etc., which are component parts of the drip pad primary and secondary containment and collection systems.

In accordance with 40 CFR Part 264, §262.16 and §262.17, all generators of hazardous waste are required to close their facilities which were used in the management of hazardous waste, and their less than 90-day storage areas so to comply with the requirements of 40 CFR Part 265, §265.111 and §265.114. The above regulatory citations incorporate the closure performance standards and closure requirements for tank systems, storage areas, drip pads, surface impoundments, landfills, etc., as applicable, and identify the disposal requirements of wastes generated during closure.

If a facility is unable to "clean close" their HWMUs (i.e., the drip pad system cannot be decontaminated and/or any contaminated soils or subsoils cannot be removed), then the owner or operator must close the HWMUs as a landfill with hazardous waste "closed in-place" and perform post-closure care in accordance

with closure and post-closure care requirements that apply to landfills under 40 CFR §265.310. (The VHWMR under 9 VAC 20-60-265.B.18, specifies that if facilities must close as landfills, they must close in accordance with landfill requirements of 40 CFR Part 264 rather than 40 CFR Part 265.)

3.0 Closure Plan Requirements, Closure Documentation or Report (See §265.445)

In accordance with 40 CFR Part 265, Subpart W, §265.445, where drip pads do not comply with the secondary liner system requirements of 40 CFR §265.443(b)(1), the owner or operator must develop: 1) a closure plan under 40 CFR §265.112, 2) a contingent closure plan, and 3) a contingent post-closure plan. The contingent closure plan and contingent post-closure plan are required in case not all of the contaminated subsoils can be practicably removed at closure and the facility is required to close the HWMU(s) as a landfill with hazardous waste "closed in-place." (See Section 4.0 below - DEQ guidance document for closure plans and post-closure plans.)

Where drip pads do not comply with the liner requirements of §265.443(b)(1), then such facilities must also develop cost estimates for the costs of complying with the contingent closure plan and contingent post-closure plan. (However, such facilities are not required to include the costs of expected closure under 40 CFR 265.445(a), i.e., clean closure.)

A drip pad facility is considered exempt from RCRA requirements from developing a formal closure plan under 40 CFR Part 265, Subpart G, §265.112, if all of the following has occurred: 1) the drip pad HWMUs were designed and constructed to comply with the liner system requirements of 40 CFR §265.443(b), and 2) the drip pad HWMUs were operated, maintained, evaluated and inspected, certified by an independent professional engineer (P.E.), and the facility has records, in accordance with the unit-specific requirements for drip pads under §262.16(b)(4) and/or 262.17(a)(8) and 40 CFR Part 265, Subpart W. (See §262.16 and/or 262.17 for exemption from the requirements of 40 CFR Part 265, Subparts G, Closure and Post-Closure, and Subpart H, Financial Requirements, except for §265.111, Closure Performance Standard, and §265.114, Disposal or Decontamination of Equipment, Structures, and Soils.)

Notwithstanding the above, DEQ recommends that all drip pad facilities develop a closure plan and/or an appropriate closure document report in order to establish the nature and extent of the closure activities, the closure data generated and the closure findings so to provide the basis for a "clean closure" determination or other closure determination. DEQ also recommends that the closure plan and/or documentation report should indicate whether the closure of the HWMUs was in accordance with the requirements of 40 CFR §265.111, §265.114, and §265.445. DEQ recommends that the closure plan, the closure activities, and the closure documentation report be developed and overseen by an independent professional engineer (P.E.), registered in the Commonwealth of Virginia. In addition, DEQ recommends that the facility document the certification of closure by the owner or operator, and the independent P.E. used in the closure of the HWMUs and for any other less than 90-day storage areas at the facility. Documentation and certifications of closure which are developed after closure activities should reference the closure plan and/or the documentation report which supports the basis of the closure certifications. DEQ also recommends that the certification statements of the owner/operator and P.E. incorporate the certification statement text specified under 40 CFR Part 270, §270.11(d)(1).

Please note that the owner or operator of a drip pad facility, which is in compliance with the VHWMR, is only required to submit a closure plan and post-closure plan (for closure as a landfill) to DEQ when the HWMUs cannot be decontaminated, and/or if all contaminated subsoils cannot be removed during closure. A facility unable to achieve "clean closure" would be required to close as a landfill under 40 CFR §265.310 and the VHWMR under 9 VAC 20-60-265.B.18 and would be required to submit the closure and post-closure plans to DEQ. (See last paragraph of this Section.)

If the facility is in compliance with the VHWMR and is able to "clean close" the HWMUs (i.e., decontaminate all waste residues, containment system components, structures, liners, equipment, and remove all contaminated soils, subsoils, and sediments), then the owner or operator is not required to submit a closure plan or closure related documentation for review and approval by DEQ. (Closure documentation may include: the closure plan, a contingent closure plan, a contingent post-closure plan,

the health & safety plan, a sampling & analysis plan, a closure report, a risk assessment report, and owner and engineering certifications, etc.)

However, it is important to note that the closure plan and any closure documentation, as applicable, must be maintained in the facility's operating record and be made readily available to the EPA and DEQ inspectors for the operating life of the facility. In addition, in accordance with the VHWMR, the closure plan and/or documentation must be made available to the Director of DEQ, upon request, including requests by mail.

Where drip pad facilities cannot practicably be decontaminated and remove all contaminated subsoils or other media at closure, then the drip pad must be closed as a landfill. Such facilities must submit a closure plan (for closure as a hazardous waste landfill) and a post-closure plan to the Director of DEQ within 90 days of the date that the owner or operator or Director determines that the HWMUs cannot be clean closed. In addition, within six (6) months following the determination that clean closure cannot be achieved, the facility is required to submit a permit application to address post-closure care of the landfill and the ground water monitoring requirements in accordance with the VHWMR under 9 VAC 20-60-265.B.18.

4.0 Compliance with 40 CFR §265.111 – Closure Performance Standards

Under Virginia's hazardous waste management program, a facility may choose to demonstrate clean closure using any one or more of the following closure performance standards:

1. Analytical Non-detection – The concentrations of the hazardous constituents of concern (HCOCs) are below the method detection limits (MDLs) of the approved analytical test methods for those constituents.

2. Comparison to Background Levels Using Statistical Methods – The concentrations of the HCOCs are below or not statistically different from the background sample levels.

3. Risk Assessment Standards and Criteria – The concentrations of the HCOCs are at levels that meet the acceptable risk-based performance standards (i.e., the HCOCs do not pose an unacceptable risk to human health or the environment).

For additional guidance and details concerning how to demonstrate and achieve the closure performance standards, see Sections 3.13 and related subsections of DEQ's *Draft Guidance Manual for Closure Plans and Post-closure Plans for Hazardous Waste Management Facilities*, dated September 28, 2001. In addition, guidance for collecting samples to demonstrate achievement of one of the above closure performance standards may be found in Section 3.11 of the above manual.

The *Draft Guidance Manual for Closure Plans and Post-closure Plans for Hazardous Waste Management Facilities*, dated September 28, 2001, may be found on DEQ website at: https://www.deq.virginia.gov/home/showpublisheddocument/27607/638744328725230000

5.0 Procedures to Achieve Compliance with 40 CFR §265.111, §265.114 and 40 CFR Part 265, Subpart W

Facilities must remove or decontaminate all waste residues, contaminated drip pad system components (drip pads, the primary and secondary containment systems, structures, liners, piping, sumps, pumps, tanks, and other equipment), and media (i.e., soils, subsoils, sediments) that are contaminated with hazardous wastes or hazardous waste constituents and manage them as hazardous waste in accordance with the requirements of the VHWMR and the RCRA Regulations.

Drip pad (HWMU) structures, the primary and secondary containment systems, equipment, soils, and subsoils, which have been in contact with and contaminated with the hazardous wastes or HCOCs must be decontaminated or disposed in accordance with the above the VHWMR. For details on how to achieve

clean closure, please refer to Sections 3.15 and 3.15.1 of the *Draft Guidance Manual for Closure Plans and Post-closure Plans for Hazardous Waste Management Facilities*.

If the drip pad HWMUs meets the requirements of 40 CFR 265.443(b) and no leakage has been detected in the leak detection system, then the facility will not be required to collect subsoil samples from underneath the drip pad. That is, if: 1) the drip pad and secondary containment (synthetic liner) system were designed, constructed, installed, and operated and maintained to prevent leakage to the subsurface soil, ground water, and/or surface water, and, 2) the drip pad has a leak detection system designed, constructed, and installed immediately above the liner, and 3) the leak detection system is operated and maintained to detect leakage, and documentation exists which verifies there has been no leakage to the leak detection system, then no subsoil samples will be required from underneath the drip pad.

However, if leakage has been detected by the drip pad's secondary liner/leak detection system, then representative subsoil samples must be taken beneath the drip pad and secondary liner system to document the nature and extent of migration or potential migration of hazardous waste or HCOCs to subsoils and underlying groundwater media.

If the drip pad only meets the requirements of 40 CFR 265.443(a) (i.e., the drip pad has an impermeable primary containment system surface, but no secondary containment system) (synthetic liner with a leak collection and detection system below the drip pad), then subsoil samples will be required from underneath the drip pad.

For all drip pad HWMUs, surface soil samples and subsoil samples should be taken in the proximity of the drip pad area and in natural drainage areas emanating from the HWMUs to evaluate compliance with the closure performance standards of 40 CFR §265.111(b).

Groundwater monitoring data is not required to demonstrate clean closure. However, groundwater monitoring will be required if clean closure cannot be achieved and the unit must be closed as a hazardous waste landfill. If an existing groundwater monitoring system in place, the facility may be able to use those wells and associated data meeting VHWMR requirements (if any). Groundwater monitoring data for the applicable HCOCs should be compared to background data and risk-based standards and criteria (e.g., the EPA's and Commonwealth's drinking water maximum contaminant levels (MCLs) and maximum contaminant level goals (MCLGs)).

If clean closure cannot be achieved, the facility must close the HWMUs by constructing an impermeable cap over the remaining contamination, and close as a hazardous waste landfill with hazardous waste "closed in-place." (See Section 3.0 above.) (Also see Section 4.0 - *Draft Guidance Manual for Closure Plans and Post-closure Plans for Hazardous Waste Management Facilities* - *See* Sections of Chapters 2.0 and 3.0 regarding closure of landfills and post-closure care requirements.)

Please refer to DEQ's closure guidance and the VHWMR and the RCRA Regulations for proper management, treatment and disposal requirements for generated hazardous wastes. Please contact the appropriate DEQ Regional Office Land Protection Manager for guidance, if needed.

6.0 Options for Closure

The EPA's Office of Solid Waste and Emergency Response (OSWER) has developed a memorandum entitled Options for CCA Wood Treatment Plants Converting to Preservatives that Generate Hazardous Waste, dated September 24, 2003. In this above memorandum, EPA has identified three options for closure of CCA drip pad HWMUs where facilities convert from CCA preservatives to other preservatives which do not generate hazardous waste. (This EPA guidance document is provided in Appendix C.)

The closure options specified by the EPA are as follows:

- Option 1 – Complete Closure at Conversion.
- Option 2 – Continued Operation as a HWMU and Delay of Closure.

- Option 3 – Phased Closure.

DEQ concurs with the EPA's stated closure options and the regulatory requirements associated with each of these options. Under Option 1, the facilities which are able to “clean close” the drip pad HWMUs will no longer be regulated under the VHWMR and the RCRA Regulations. Such a facility would be able to demonstrate "clean closure" for all of the drip pad collection system components and remove and dispose of any media that is contaminated by F035 listed hazardous wastes.

Under Option 2, facilities will not clean or decontaminate the drip pad system at this time but will postpone the complete closure of the HWMU until some future date. Under Option 2, wastes that accumulate on the drip pad and which are removed from the drip pad or drip pad collection system will still be regulated as F035 hazardous wastes (via the “mixture rule”).

Under Option 3, only the drip pad surface and possibly some other collection system components will be cleaned and decontaminated at this time and the complete closure of the HWMU would be postponed until some future date. Under Option 3, if the drip pad surface is able to be clean closed, any wastes that subsequently accumulate on the drip pad and that are removed from the cleaned or decontaminated system components of the drip pad would not be regulated as hazardous wastes. If Option 3 clean closure of the drip pad and/or equipment cannot be achieved, the facility may continue to operate and will generate F035 listed hazardous waste from the drip pad as if the facility had selected Option 2, i.e., the drip pad is still contaminated with F035. The facility may also choose to implement Option 1 at this time. Whether the facility chooses to implement Option 1 or 2 upon finding that Option 3 cannot be achieved, the facility must maintain all closure/decontamination documentation and findings.

Facilities that choose Options 2 or 3 still are still subject to the full closure requirements of the VHWMR and the RCRA Regulations and will be required to remove or decontaminate any remaining structures, equipment, and media (soils, subsoils, sediment) when the drip pad facility ceases operation. In addition, any facility choosing Options 2 or 3 will also continue to be subject to the operation and maintenance requirements of 40 CFR Part 265, Subpart W, and 40 CFR §262.16 and/or 262.17.

Appendix A

(Excerpts of the RCRA Regulations under 40 CFR Part 265)

40 CFR §265.111 - Closure Performance Standard

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

(a) Minimizes the need for further maintenance, and

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

(c) Complies with the closure requirements of this subpart, including but not limited to the requirements of §§265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, 265.404, and 264.1102 (if applicable).

40 CFR §265.114 - Disposal or Decontamination of Equipment, Structures and Soils

During the partial and final closure periods, all contaminated equipment, structures, and soil must be properly disposed of, or decontaminated unless specified otherwise in §§265.197, 265.228, 265.258, 265.280, or 265.310. By removing all hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of Part 262 of this chapter.

40 CFR §265.445 – Closure (Specific Closure Requirements for Part 265, Subpart W - Drip Pad facilities.)

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(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 practically removed or decontaminated, he must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (§265.310). For permitted units, the requirement to have a permit continues throughout the post-closure period.

(c)(1) The owner or operator of an existing drip pad, as defined in §265.440 of this subpart, that does not comply with the liner requirements of §265.443(b)(1) must:

(i) Include in the closure plan for the drip pad under §265.112 both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(ii) Prepare a contingent post-closure plan under §265.118 of this part for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under §265.112 and 265.144 of this part for closure and post-

closure care of a drip pad subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan but are not required to include the cost of expected closure under paragraph (a) of this section.

Appendix B

40 CFR Part 265, Subpart W – Drip Pads

Subpart W—Drip Pads

Source: 55 FR 50486, Dec. 6, 1990, unless otherwise noted.

§265.440 Applicability.

(a) The requirements of this subpart apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before December 6, 1990, and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads. The requirement at §265.443(b)(3) to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992, except for those constructed after December 24, 1992, for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

(b) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under §265.443(e) or §265.443(f), as appropriate.

(c) The requirements of this subpart are not applicable to the management of infrequent and incidental drippage in storage yards provided that:

(1) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the facility will do the following:

(i) Clean up the drippage;
(ii) Document the cleanup of the drippage;
(iii) Retain documents regarding cleanup for three years; and
(iv) Manage the contaminated media in a manner consistent with Federal regulations.

[55 FR 50486, Dec. 6, 1990, as amended by 56 FR 30198, July 1, 1991; 57 FR 61503, Dec. 24, 1992]

§265.441 Assessment of existing drip pad integrity.

(a) For each existing drip pad as defined in §265.440 of this subpart, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of this subpart, except the requirements for liners and leak detection systems of §265.443(b). No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of §265.443 of this subpart are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of §265.443 of this subpart, except the standards for liners and leak detection systems, specified in §265.443(b) of this subpart.

(b) The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of §265.443(b) of this subpart, and submit the plan to the Regional Administrator no later than 2 years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of §265.443 of this

subpart. The plan must be reviewed and certified by an independent qualified registered professional engineer.

(c) Upon completion of all, repairs, and modifications, the owner or operator must submit to the Regional Administrator or State Director, the as-built drawings for the drip pad together with a certification by an independent, qualified registered professional engineer attesting that the drip pad conforms to the drawings.

(d) If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of §265.443(m) of this subpart or close the drip pad in accordance with §265.445 of this subpart.

[55 FR 50486, Dec. 6, 1990, as amended at 57 FR 61504, Dec. 24, 1992]

§265.442 Design and installation of new drip pads.

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

(a) All of the applicable requirements of §§265.443 (except §265.443(a)(4)), 265.444 and 265.445 of this subpart, or

(b) All of the applicable requirements of §§265.443 (except §265.443(b)), 265.444 and 265.445 of this subpart.

[57 FR 61504, Dec. 24, 1992]

§265.443 Design and operating requirements.

(a) Drip pads must:

(1) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;

(2) Be sloped to freely drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

(3) Have a curb or berm around the perimeter;

(4)(i) Have a hydraulic conductivity of less than or equal to 1×10−7 centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10−7 centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with §265.442(a) instead of §265.442(b).

(ii) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this section, except for subsection (b).

(5) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

Note: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement of this paragraph.

(b) If an owner/operator elects to comply with §265.442(b) instead of §265.442(a), the drip pad must have:

(1) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

(iii) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

(2) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:

(i) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and

(ii) Designed and operated to function without clogging through the scheduled closure of the drip pad.

(iii) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

(3) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

(c) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other

deterioration that could cause hazardous waste to be released from the drip pad.

Note:
See §265.443(m) for remedial action required if deterioration or leakage is detected.

(d) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

(e) Unless protected by a structure, as described in §265.440(b) of this subpart, the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system, or the drip pad is protected by a structure or cover, as described in §265.440(b) of this subpart.

(f) Unless protected by a structure or cover, as described in §265.440(b) of this subpart, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(g) The drip pad must be evaluated to determine that it meets the requirements of paragraphs (a) through (f) of this section and the owner or operator must obtain a statement from an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of this section.

(h) Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(i) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

(j) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(k) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

(l) Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) Throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

(1) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator must:

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

(ii) Immediately remove the portion of the drip pad affected by the condition from service;

(iii) Determine what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean-up and repairs;

(iv) Within 24 hours after discovery of the condition, notify the Regional Administrator of the condition and, within 10 working days, provide a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.

(2) The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(3) Upon completing all repairs and clean up, the owner or operator must notify the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with paragraph (m)(1)(iv) of this section.

(n) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

[55 FR 50486, Dec. 6, 1990, as amended at 56 FR 30198, July 1, 1991; 57 FR 5861, Feb. 18, 1992; 57 FR 61504, Dec. 24, 1992]

§265.444 Inspections.

(a) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of §265.443 of this subpart by an independent qualified, registered professional engineer. The certification must be maintained at the facility as part of the facility operating record. After installation liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

(b) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(1) Deterioration, malfunctions or improper operation of run-on and run-off control systems;

(2) The presence of leakage in and proper functioning of leakage detection system.

(3) Deterioration or cracking of the drip pad surface.

Note:
See §265.443(m) for remedial action required if deterioration or leakage is detected.

§265.445 Closure.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(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 practically removed or decontaminated, he must close the facility and perform post/closure care in accordance with closure and post-closure care requirements that apply to landfills (§265.310). For permitted units, the requirement to have a permit continues throughout the post-closure period.

(c)(1) The owner or operator of an existing drip pad, as defined in §265.440 of this subpart, that does not comply with the liner requirements of §265.443(b)(1) must:

(i) Include in the closure plan for the drip pad under §265.112 both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) Prepare a contingent post-closure plan under §265.118 of this part for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under §§265.112 and 265.144 of this part for closure and post-closure care of a drip pad subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan but are not required to include the cost of expected closure under paragraph (a) of this section.

Appendix C

EPA Memorandum (dated September 24, 2003), Options for CCA Wood Treatment Plants Converting to Preservatives that do not Generate Hazardous Waste

MEMORANDUM

TO: RCRA Directors

Regions 1 - 10

FROM: Robert Springer

Director, Office of Solid Waste

SUBJECT: Options for CCA Wood Treatment Plants Converting to Preservatives that do not Generate Hazardous Waste

As you may already know, as of January 1, 2004, many wood treatment plants that currently use chromated copper arsenate (CCA) will be required to convert to an alternative preservative. In fact, this conversion is already underway. The attached guidance explains options available to owners and operators who will be converting from using CCA to using preservatives that do not result in the generation of hazardous waste. The reason for issuing this guidance is that most wood treatment plants using CCA are hazardous waste generators and are subject to certain closure requirements for their "drip pad" waste management units after switching to preservatives that do not result in the generation of hazardous waste. Because this conversion is occurring within a relatively short time frame, this document has been developed to provide guidance on three options for complying with RCRA closure requirements. Our goal is to minimize potential disruption to this industry, while ensuring protection of human health and the environment.

The guidance was developed for federal and state hazardous waste regulators overseeing owners and operators of those wood treatment plants during and after their conversion. This guidance supplements and does not supersede earlier federal guidance for wood treatment plants that change preservatives. We are also aware that some states have developed similar guidelines, and we believe the attached guidance is compatible with those guidelines.

Several of the Regions have assisted in the preparation of this guidance, as have several states, and we appreciate that assistance. We will be distributing this guidance to the states through the Association of State and Territorial Solid Waste Management Officials (ASTSWMO).

If you have any questions regarding this guidance, please contact Ross Elliott of my staff at 703- 308-8748, or at elliott.ross@epa.gov

Attachment

cc: ASTSWMO

Options for Drip Pads at Wood Treating Plants

Converting from Chromated Copper Arsenate (CCA) Preservative to Preservatives that do not Generate Hazardous Waste

Introduction

A. Background

In February 2002, the four registrants of chromated copper arsenate (CCA) products submitted requests to EPA for the voluntary termination of most residential uses of CCA products by December 31, 2003, as well as the voluntary cancellation of other affected products. These actions, which became final on March 17, 2003, will prohibit the CCA treatment of wood that is intended for most residential uses after December 31, 2003.[1] The termination of CCA- treated wood products for residential uses will reduce exposure from arsenic, principally where children may come in contact with the treated wood.[2] "Residential" uses of wood treated with CCA include wood used in play-structures, decks, picnic tables, landscaping timbers, residential fencing, patios, and walkways/boardwalks. Products not included in the termination include wood used for marine and some farm applications, piles, and round poles and posts used in building construction.

The purpose of the transition (or "phase-out") period, from the February 2002 announcement to the December 31, 2003, effective date, is to provide consumers with increasingly more alternatives to CCA-treated wood, while allowing adequate time for the industry to convert wood treating plants with minimal economic disruption. EPA estimates that approximately 380 plants may be affected by the cancellation of the use of CCA for residential uses. Normally, any wood treatment plant that uses CCA may choose to convert to a different preservative at any time. This phase-out, however, means that many wood treaters may be converting (or possibly choosing to close) within a relatively short time period. Because wood preserving plants using CCA preservative generate hazardous waste, they are subject to the hazardous waste requirements of the Resource Conservation and Recovery Act (RCRA). Therefore, if a plant switches to a preservative that does not result in the generation and management of hazardous waste, that plant has a number of options as to whether, or how, it may subsequently be regulated under RCRA.

B. Purpose of Guidance

The purpose of this guidance is to describe a number of options available to generators regarding "closure" under the federal hazardous waste regulations for wood treatment plants that convert from using CCA to using alternative preservatives that do not result in the generation of RCRA hazardous waste. The guidance explains generally how wood treatment plant owners and operators may operate in continued compliance with the requirements of subparts W (Drip Pads) and G (Closure and Post-Closure) of 40 CFR part 265, as they convert from using CCA to other wood preservatives that do not result in the generation of RCRA hazardous waste. The guidance is directed to federal and state hazardous waste regulators to assist the owners and operators of wood treatment plants currently using CCA as a wood preservative. EPA is aware that some states have developed guidelines for the conversion process and believes that this guidance is compatible with those guidelines.

C. Scope

This guidance addresses options related to the proper management of drip pads, regulated under subpart W of 40 CFR part 265, when converting from CCA to an alternative preservative that does not result in the generation of hazardous waste. While the intent is to give guidance to wood treaters that currently use CCA and will be converting before January 1, 2004, the guidance is also applicable for conversion after that date. This guidance does not address the specifics of process equipment cleaning and/or replacement, nor does it address the disposal of CCA treated wood. The cleaning and/or replacement of wood preserving process equipment (e.g., retort vessel, product storage tanks, valves, etc.) will likely be required as a result of switching preservatives, regardless of the option chosen for drip pad management, and any waste generated from the cleaning must be managed as RCRA hazardous waste. The guidance

also does not address tanks and ancillary piping and equipment used in managing hazardous waste at wood treatment plants. These topics are important and should be addressed by the appropriate federal or state regulatory authority.

Conversion Options

Owners and operators of wood treating plants that generate a hazardous waste, and that use drip pads to convey treated wood drippage, precipitation, and/or surface water runoff to a collection system, are subject to the requirements of subpart W of 40 CFR part 265.[3] Those regulations specify the requirements for the design, operation, inspection and closing of the drip pads. Most of the wood treatment plants operate as generators of hazardous waste, and not treatment, storage, and disposal facilities (TSDFs). Wood treatment plants operating as generators under 40 CFR 262.16(b)(4) and/or 262.17(a)(3) are exempt from RCRA permitting, and are subject to the generator standards as well as subpart W of Part 265. For generators who own or operate drip pads, the applicable closure standards are the general requirements in 40 CFR 265.111 and 265.114, and the unit-specific requirements in 40 CFR 265.445.

When an owner or operator of a wood treatment plant regulated under subpart W chooses to convert from using CCA to using a preservative that does not result in the generation of a RCRA hazardous waste, we have identified the following three options for timing the drip pad closure activities to minimize the impact of such activities on wood treatment operations. State regulatory agencies may also identify suitable options and should be consulted. A wood treater operating only as a hazardous waste generator, who is subject to subpart W, must eventually follow the closure requirements in subpart W and the applicable requirements of subpart G. These closure requirements would apply for all the following options; the only difference is the timing of the closure activities relative to the conversion to a different wood preserving chemical.

In the past, EPA has provided guidance on this subject, that is, the requirements for wood treaters who either close their wood-treating operations "as RCRA generators,"[4] or switch to a chemical that does not generate any RCRA hazardous waste, [5] while continuing to operate their wood-treatment operation. Today's guidance includes the information from previous guidance, and should be considered a supplement to, not a replacement for, that guidance.

OPTION 1 - Complete Closure Before Converting

An owner or operator of a wood treatment plant may choose to no longer have the drip pad regulated under RCRA when the plant converts from using CCA to using a wood preserving chemical that does not result in the generation of hazardous waste. If so, the owner or operator must close the drip pad as a hazardous waste management unit before converting the wood treatment plant to the alternative preservative. The owner or operator must follow all procedures specified in 40 CFR 265.111, 265.114, and 265.445.

The subpart W regulations require that the drip pad be either "clean closed" or closed as a hazardous waste landfill. If clean closed, all waste residues, structures, equipment, containment system components (including sumps, drip pad and any liners), and contaminated soils must be removed or decontaminated and managed as hazardous waste. EPA has not established specific federal cleanup levels to verify "clean closure." Many states have established cleanup levels, and we recommend that plants work with their appropriate state or federal regulatory authority to determine specific levels of decontamination that are protective of human health and the environment.[6] If the appropriate regulatory agency determines that the "clean closure" requirements have been satisfied, the wood preserving operation could then "reopen." The decontaminated drip pad, or, if necessary, new drip pad would not be regulated under subpart W.

In the event that "clean closure" is not possible, e.g., not all CCA-contaminated subsoils are removed to levels acceptable to the regulatory authority, the unit will be subject to the post- closure care regulations in 40 CFR 265.310 as a closed hazardous waste landfill. The original drip pad could be decontaminated and used as part of the overall cover for the contaminated area.[7] Depending on the post-closure care requirements, a new drip pad may have to be constructed by the wood treating plant and located separately from the contaminated area. The wood preserving operation could "reopen" using a wood preservative that does not result in the generation of hazardous waste, using either the decontaminated drip pad or a new drip pad. Neither the new drip pad nor the decontaminated original drip pad would be regulated under subpart W. If the original drip pad is used as part of the post-closure landfill cover, however, the post-closure care requirements under 40 CFR 265.310 would apply, whether or not it continues in use as part of the wood treating process.

The contaminated area could be addressed under a post closure permit, or as part of an ongoing corrective action process for other contaminated areas at the plant. The Post-Closure Rule (63 FR 56709, October 22, 1998) allows EPA and authorized states the flexibility of using a variety of authorities, including corrective action, to impose requirements on non-permitted land disposal facilities requiring post-closure care, provided the regulated unit is situated among solid waste management units, a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of contamination) are likely to have contributed to the release (40 CFR 265.110(d)).

OPTION 2 - Continued Operation

Under this option, the owner or operator would continue to operate under subpart W, and to continue to have all wastewaters, process residuals, preservative drippage, spent formulations, etc., that accumulate on the drip pad regulated as hazardous waste. In this situation, no changes would be required under RCRA. Process equipment generally will require cleaning, and perhaps replacing, for compatibility with the alternative preservative, but no cleaning or replacement of the drip pad would be performed under this option. Any liquids removed from the drip pad would be considered to be hazardous under the "mixture rule,"[8] because the drip pad would not have been decontaminated and the liquids would have been "mixed" with F035 [9] waste. Of course, when the plant ceases all operations, the closure requirements in 40 CFR 265.445, and the applicable requirements in subpart G of 40 CFR part 265 must still be followed.

OPTION 3 - Phased Closure

Closing drip pad units at wood treatment plants within a relatively short time period, where owners and operators otherwise wish to continue operations using a preservative that does not result in the generation of hazardous waste, could result in an economic disruption in this industry. This is particularly the case if the drip pad must be removed and/or contaminated soils have to be removed from underneath the drip pad to meet final closure standards. Under this option, an owner or operator of a wood treatment operation would convert to an alternative preservative that does not result in the generation of hazardous waste, perform certain closure activities, and postpone complete closure until some future date.

As in Option 2, the owner or operator would be required to clean, and perhaps replace, the treatment equipment. Under this option, however, the drip pad and the other containment system components would be cleaned sufficiently such that any liquids that come in contact with the pad would not be viewed as having been "mixed" with F035 waste. The level of cleaning would have to be determined by the appropriate federal or state regulatory authority. (Also, it should be noted that where drip pad liquids are conveyed to and collected in sumps, residual F035 waste in these sumps would need to be removed so that subsequent wastes managed in these units, after successful conversion to an alternative preservative, would not be "mixed with" F035 waste.) This option presumes that process equipment is also cleaned so that liquids reaching the drip pad do not contain F035 waste. Whereas in Option 2 liquids removed from the drip pad after the conversion was complete would be treated as RCRA hazardous waste, in this option the liquids would not be a RCRA hazardous waste under the "mixture rule."

Under this option, the drip pad would still be subject to certain subpart W regulations of 40 CFR part 265, such as those pertaining to inspections and the operation and maintenance of the drip pad, even though

the drip pad would not be managing hazardous waste. The subpart W regulations would continue to apply to the drip pad because closure would not have been completed, and any contamination around and under the drip pad would presumably not have been removed. The goal of the continued applicability of the subpart W regulations is to prevent exacerbation of any existing soil or groundwater contamination. The owners or operators should check with the appropriate state or federal regulatory authority to determine which of the subpart W regulations apply on a site-specific basis. When all wood treating operations end, the drip pad would then be closed in accordance with subpart W requirements, and the applicable requirements of subpart G of 40 CFR part 265.

Drip Pad Cleaning

The method of cleaning the pad will depend on whether it is either covered or sealed with a low permeability surface material or instead has an underlying liner. Possible cleaning methods include grit blasting, hydro blasting/water washing, solvent washing, and steam cleaning. Grit blasting uses an abrasive material to remove contaminated layers up to about 0.5 to 1.5 cm., and is applicable for concrete pads, but would remove any surface coatings. Hydro blasting/water washing can also be used on concrete and can remove the top 0.5 to 1.0 cm of the surface. With solvent washing, an organic solvent is circulated across the surface of the pad to solubilize contaminants. This method could be used on both coated and un-coated pads. Steam cleaning is also applicable to both coated and un-coated pads. Note that any waste generated by the cleaning of drip pads that collect CCA treatment chemicals, i.e., rinse waters, drip pad residues, etc., must be handled as a hazardous waste.

[1] The EPA announced these requests in the February 22, 2002, *Federal Register* (67 *FR* 8244), and requested public comment at that time. The cancellation order, which became final on March 17, 2003, was announced in the April 9, 2003, *Federal Register* (68 *FR* 17366).

[2] While the Agency has not concluded at this time that exposure to CCA treated wood poses unacceptable risks, arsenic is a known human carcinogen and any reduction in exposure is desirable. EPA is currently evaluating the risks associated with the use of CCA, especially risks to children from exposure to decks and play structures.

[3] Absence of a drip pad does not necessarily mean that a wood treatment plant is not subject to subpart W. See 40 CFR 265.440(c)(1).

[4] EPA Hotline Monthly Report Questions, Faxback #14321 and #14130.

[5] See Section 4-22, Wood Preserving Resource Conservation and Recovery Act Compliance Guide, Office of Compliance, U.S. EPA, June 1996.

[6] EPA issued clean closure guidance on March 16, 1998. The guidance explained that non-residential exposure assumptions may be used at industrial properties at the discretion of the regulatory agency (RCRA Online number 14174)

[7] Hilary I. Inyang, Ph.D and Vernon Myers, Ph.D, Geotechnical Systems for Structures on Contaminated Sites, A Technical Guidance Document . USEPA, EPA530-R-93-002, August 1993

[8] The regulatory provision governing mixtures of solid waste and listed hazardous waste is known as the "mixture rule" and is found at 40 CFR 261.3(a)(2(iv). It requires that a waste be managed as hazardous if it is a mixture of a solid waste and one or more listed hazardous wastes and has not been delisted

[9] F035 waste is described in part in 40 CFR 261.31 as:
Wastewater (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium.