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Management of Used Treated Wood Products

Annually, the nation's utility, port, railroad, telecommunication, and construction industries remove from service millions of cubic feet of treated wood products. Ensuring that reuse or disposal is accomplished in an economical and environmentally appropriate manner requires a basic understanding of the regulatory and technical facts. This paper provides the party managing the material, as well as the receiving party, with the basic information needed for making cost effective and environmentally sound management decisions regarding the reuse or disposal of treated wood products. This paper does not address wastes produced at wood treatment facilities.

The public has a legitimate interest in the management of materials that can no longer be used for their original purpose. It is undisputed that the availability of solid waste disposal sites is becoming more limited. The public supports increases efforts to recycle or reuse basic materials. Equally important are concerns as to whether the product represents a current or future threat to the environment or public health when recycled, reused or disposed. The producers and users of treated wood recognize these concerns and accept seriously the responsibility to ensure proper management of material removed from service.

SUMMARY OF APPLICABLE REGULATIONS

- Treated wood is not a pesticide and therefore is not subject to regulation under FIFRA.
- Treated wood when reused in a manner consistent with its "intended end use" is not being disposed and therefore should not be classified as a solid waste.
- Treated wood that is disposed is not a hazardous waste under federal law because it has not been listed and testing has demonstrated that it does not exhibit a hazardous characteristic. Therefore it can be managed in any waste management facility (e.g., landfill or combustion system) authorized under state and local law to manage the material.



I. WHO REGULATES USED TREATED WOOD PRODUCTS?

Both federal and state law (and occasionally local jurisdictions) may regulate the use, reuse and disposal of treated wood. Federal law provides the basic framework for regulating the management of used treated wood; however, states may be more stringent in their regulations. This paper will deal primarily with the federal requirements. **However, in using and disposing of treated wood products, users should always be sure they understand and conform to all state and local requirements.**



II. TREATED WOOD IS NOT A PESTICIDE

Confusion sometimes exists between the chemicals (pesticides) used to preserve wood and the classification of the actual treated wood product itself. There is a distinct difference. The handling of chemical concentrates, the wood preserving processes, and managing the wastes resulting from the wood treatment process are subject to their own rigid and specific regulations.

The treated wood product falls under distinctly separate rules and regulations, which, in general, acknowledge the low level of risk to human health and the environment associated with the product. This fact was recognized in a 1985 EPA administrative law decision that confirmed that **treated wood products are not pesticides**, and are thus not regulated under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA").¹ The treated wood industry has developed EPA approved Consumer Information Sheets for wood treated with various preservatives, which provide guidance on the safe use and disposal of the treated wood product. These Consumer Information Sheets also provide information on protective equipment that should be used when handling treated wood, as well as information on proper uses of treated wood (such as home interiors or food preparation surfaces) and improper methods of disposal (such as uncontrolled burning). These Consumer Information Sheets are included as an addendum to this paper.



III. REUSED TREATED WOOD IS NOT A SOLID WASTE

A high percentage of material removed from initial use retains enough of its original structural and preservation characteristics to make it usable in other treated wood applications. A number of regulatory agencies have determined that when suitable treated wood can be reused in a manner compatible with its original purpose, such as for shorter poles, fence posts, retaining walls and landscape timbers, such reuse does not constitute "disposal" and the material should not be classified as a "solid waste" subject to federal or state regulation. Such "second life" applications have dual environmental advantages of conserving timber resources and reducing demand on scarce landfill space.

However, treated wood removed from service or generated as a construction waste **that has no other useful application as a product** is considered solid waste.

EPA Region V specifically addresses the regulatory status of reused treated wood in 1990, declaring that treated wood poles reused as fence posts are not "wastes." A number of states including California, Oregon and Washington have reached similar conclusions. In 1992 the State of Washington Department of Ecology ("Ecology") examined this issue in detail and consulted with EPA. This resulted in a clear statement of state policy:

Ecology encourages the reuse of treated wood as a preferred management alternative. Reuse of treated wood is not regulated provided such reuse is consistent with the intended end use of the treated wood. Examples of reuse include use as fence posts, retaining walls, landscaping, decks, bulkheads, general construction and the like.²

Users are cautioned not to "speculatively accumulate" treated wood for reuse that does not clearly have the structural or preservative attributes to be reused in a manner compatible with its original purpose.

Furthermore, to be excluded from solid waste regulation, the materials should be used in a form for which a treated wood product could normally be used. Reconfiguration of treated wood that makes it unsuitable for its intended end use will generally be regulated as a form of solid waste management.

Finally, when the material is sold or given to a third party there should be a properly documented transfer of title (such as a bill of sale). The new owner should be given any available consumer information, including a Consumer Information Sheet, and other applicable notices, including in some cases appropriate OSHA Hazard Communication notices, such as a Material Safety Data Sheet, that cover appropriate warnings and the proper handling and use of the product.



IV. IF THE MATERIAL IS A SOLID WASTE (i.e., IT IS BEING DISCARDED) IS IT A HAZARDOUS WASTE?

QUICK VIEW:

TREATED WOOD WASTE HAS NOT BEEN
CLASSIFIED AS HAZARDOUS WASTE
UNDER THE FEDERAL RCRA PROGRAM

- Extensive TCLP testing on Pentachlorophenol ("penta") and creosote treated wood reveal that such materials do not test hazardous.
- Wood products treated with arsenical preservatives are exempt from hazardous waste regulation when disposed by the end user regardless of the TCLP results for Waste Codes D004-D017.
- Wood products treated with preservatives that contain no TCLP constituents are not hazardous waste.

The first step in managing any material designed for disposal as a solid waste is to determine if it is a "hazardous waste." A solid waste is regulated as a "hazardous waste" only if (1) it is specifically listed in the Resource Conservation and Recovery Act (RCRA) regulations; or (2) the material exhibits a hazardous waste characteristic. 40 C.F.R. § 261.20-.33. If it is determined to be hazardous, disposal must conform with federal and state hazardous waste regulations. **Treated wood is not listed as hazardous waste under federal law and studies have demonstrated that it does not exhibit a federal hazardous waste characteristic.**

A. DISCARDED TREATED WOOD PRODUCTS ARE NOT LISTED AS A HAZARDOUS WASTE.

Because treated wood is not a federal listed hazardous waste, the only way it can become a federal hazardous waste is if it exhibits a hazardous waste characteristic.

B. EVALUATING TREATED WOOD FOR HAZARDOUS WASTE CHARACTERISTICS

There are four hazardous waste characteristics that are examined under RCRA: ignitability, corrosivity, reactivity, and toxicity. The only characteristic that may apply to treated wood is toxicity. The EPA technique for evaluating toxicity is the Toxicity Characteristic Leaching Procedure ("TCLP"). The TCLP regulation establishes regulatory levels for 39 chemical constituents. If, after applying the TCLP to a particular waste, the waste extract contains concentrations of chemical constituents above any one of the 39 chemical specific regulatory levels, the waste is classified as hazardous.

The constituents that may be found in treated wood depend on the type of preservative used. Further, some preservatives do not contain any TCLP constituents. Where TCLP constituents are contained in the wood treatment chemicals the user may be required to demonstrate the TCLP status of the used treated wood before the material will be accepted for disposal. This evaluation may be accomplished through actual physical testing or by the use of "generator knowledge" (based on knowledge of the materials or the processes used.)

C. TCLP TEST RESULTS - "Generator Knowledge"

TCLP testing of penta and creosote treated wood has conclusively demonstrated **that treated wood products are not a "hazardous waste"**. Under EPA's rules such generator knowledge can be utilized in place of testing to determine that a waste is not hazardous. The following two sections provide data that can be used to support generator knowledge that penta and creosote treated wood products are not hazardous waste.

1. Penta Treated Wood Products

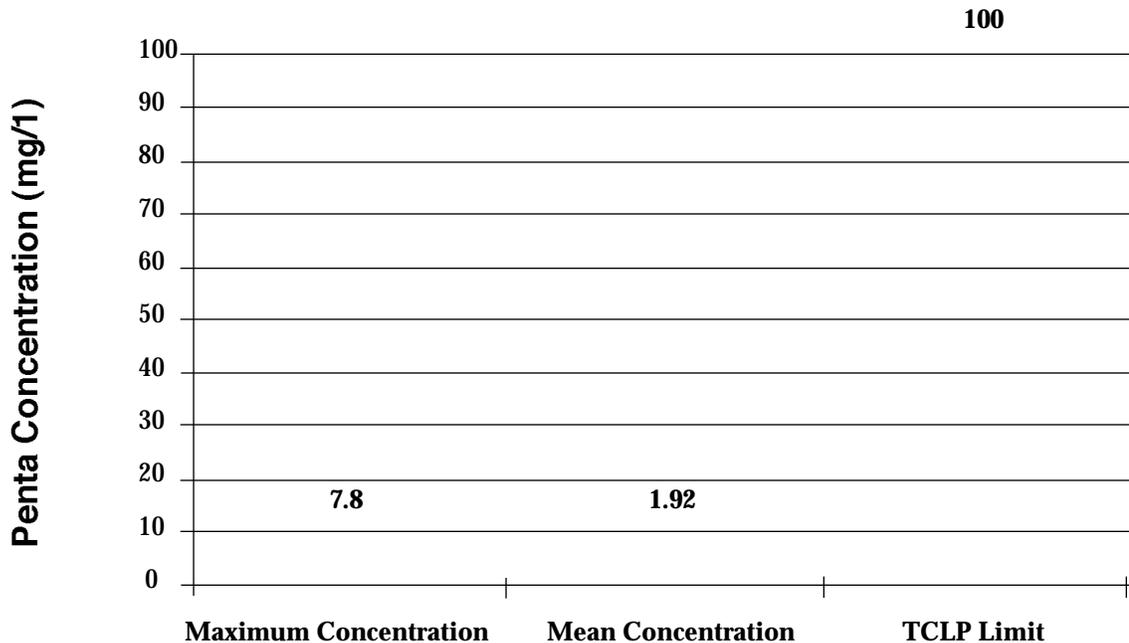
Research by the Electric Power Research Institute (EPRI) in 1991 found extract levels for penta-treated poles and crossarms to be well below the TCLP penta limits. In a diverse set of 47 samples from 13 poles and 9 crossarms, the TCLP test results for penta showed a mean concentration of 1.92 mg/1 (i.e., 1.92 parts per million), one-fiftieth of the regulatory level of 100 mg /1. The leachate levels ranged from a high of 7.8 mg/1 to below the 0.05 mg/1 detection level. (See Figure 1.) No other TCLP constituents were found above regulatory levels.³

This report concludes that:

[T]he concentration of Pentachlorophenol (PCP) in extracts derived from application of the U.S. Environmental Protection Agency's [TCLP] to PCP-treated wood poles and crossarms are well below levels that would cause these materials to be classified as hazardous waste under [RCRA].

These research efforts can support "generator knowledge" that penta treated wood is not a hazardous waste.

**FIGURE 1
EPRI PENTA DATA**



2. Creosote Treated Wood Products

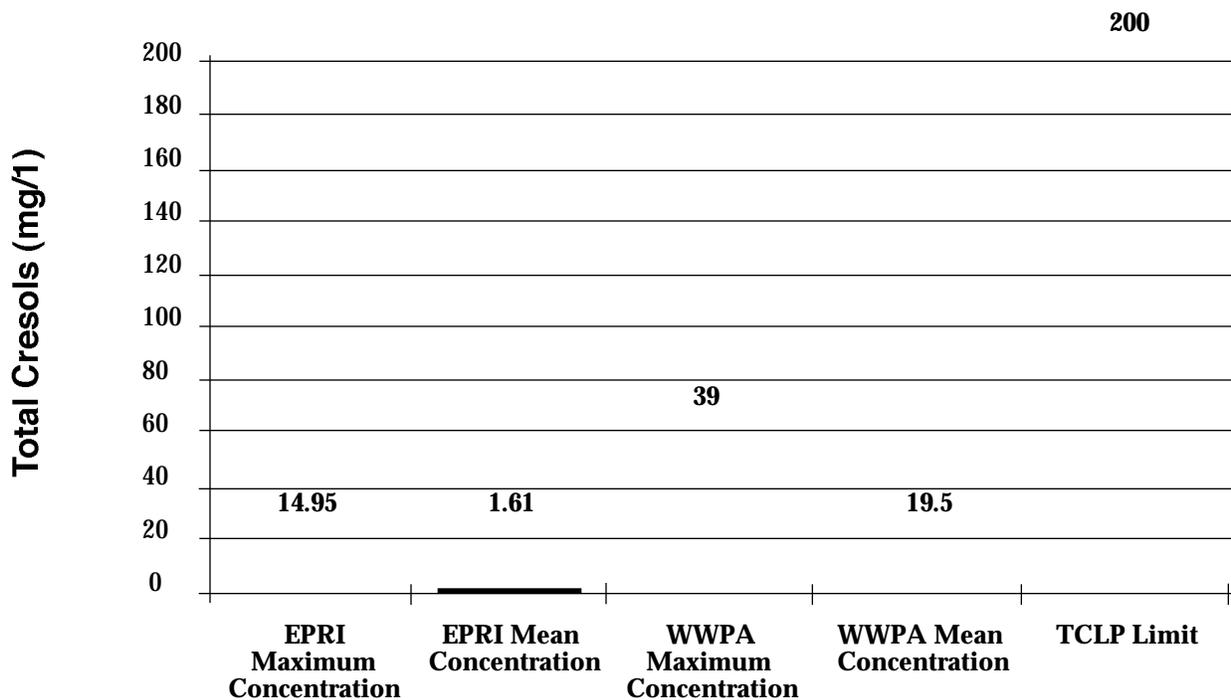
In 1992 EPRI completed research on creosote treated wood poles and crossarms and found extract levels to be well below the TCLP limits for cresols. The study examined the TCLP characteristics of 54 diverse samples provided by 15 utilities. The samples were taken from 17 poles and 6 crossarms, ranging in age from 10 to 57 years, from Douglas fir, Southern pine, and Western red cedar. The results found a mean concentration of total cresols in the TCLP extracts of 1.61 mg/1 (i.e., 1.61 parts per million), compared to regulatory level of 200 mg/1. The results range from below detection limits to a high of 14.95 mg/1. (See Figure 2.)⁴

The impact of this research, according to EPRI, is as follows:

Thus, these results provide the basis for utilities to continue managing creosote-treated poles and crossarms as non-hazardous solid waste and to forgo expenses and operational hindrances associated with TCLP testing.

In 1992, Landau Associates, Inc., on behalf of the Washington Public Ports Association ("WPPA"), performed TCLP testing on creosote treated wood products used in the waters of Puget Sound. The study found that "[C]reosote-treated marine timbers and pilings are not a Federal hazardous waste under 40 C.F.R. Part 261." The analysis examined 36 samples from material produced and placed in service between the mid -1920s and the 1980s. The TCLP results for cresol concentrations ranged from 0.02 to 39 mg/1, well below the regulatory level of 200 mg/1. See Figure 2.) The research also examined 36 samples for penta and found 35 samples at non-detectable levels and one sample at 0.017 mg/1, all far below the TCLP criteria

**FIGURE 2
EPRI AND WWPA CREOSOTE DATA**



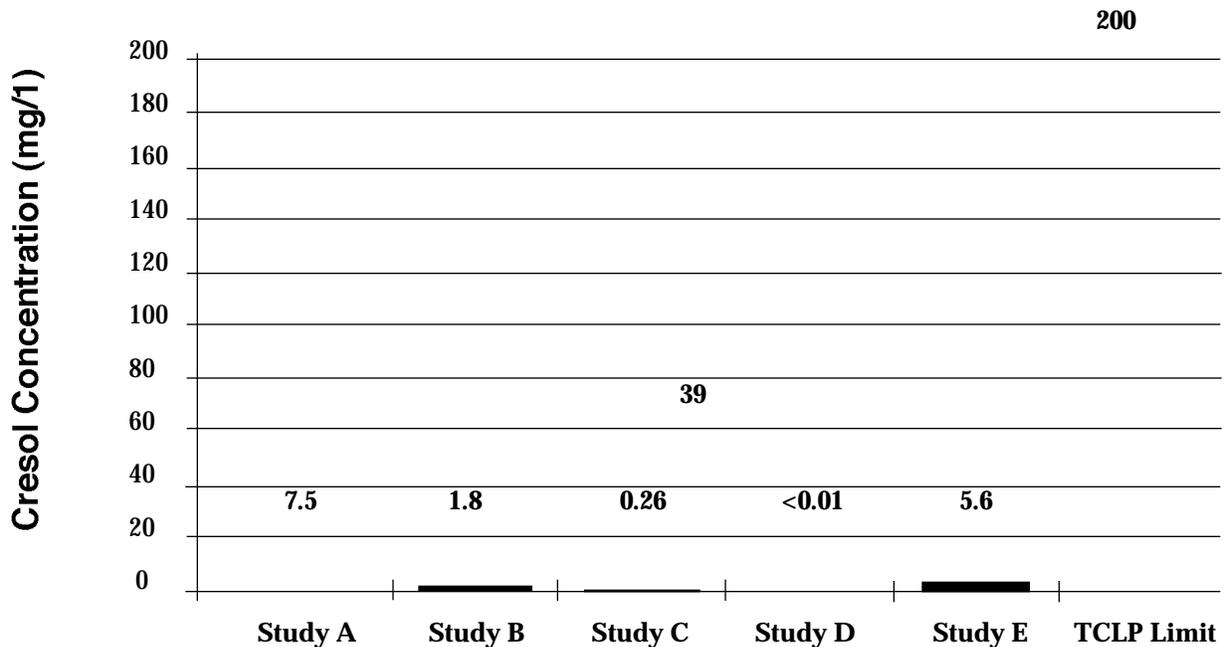
of 100 mg/1. The TCLP results for 12 samples examined for pyridine all showed values less than 1 mg/1, well below the TCLP standard of 5.0 mg/1. Five samples were examined for benzene and all were at or below 0.01 mg/1, compared to the TCLP standard of 0.5 mg/1.⁵

In 1994, the Association of American Railroads completed a review of TCLP Testing of railroad crossties.⁶ The study examined the TCLP characteristics of 28 individual samples, representing at least two dozen crossties from all over the U.S. The samples were taken from crossties ranging in age from new ties to 50 years, from white and red oak, red and black gum, and other hardwoods. Virtually all crossties were treated with creosote, thus the only extractable organics expected to be present to any extent are the o-, m-, and p- isomers of cresol, along with pentachlorophenol and phenol. The highest level of any cresol isomer detected in the leachate was 7.5 mg/1 which is far below the regulatory level of 200 mg/1 (Figure 3). This report concludes that:

Results of TCLP testing over two dozen crossties... show that, in general, railroad crossties would not be classified as hazardous waste.⁷

These research efforts can support "generator knowledge: that creosote treated wood is not a hazardous waste.

**FIGURE 3
EPRI AND WWPA CREOSOTE DATA**



D. REGULATORY EXEMPTION FOR ARSENICALLY TREATED WOOD PRODUCTS

Arsenically treated wood products disposed by the end user are exempt from classification as a federal hazardous waste regardless of the TCLP results for specified constituents from any individual sample. (If the wood exceeds the TCLP regulatory levels for any other constituent, it would be classified as a hazardous waste.) In July of 1992 the EPA published in the Federal Register a correction to the hazardous waste rules reaffirming an exclusion from hazardous waste designation for arsenical-treated wood:

40 C.F.R. § 261.4(b). *Solid Wastes which are not hazardous wastes: The following solid wastes are not hazardous wastes:*

(9) *Solid waste which consists of discarded arsenical-treated wood or wood products which fails the test for the Toxicity Characteristic for Hazardous Waste Codes D004 through D017 [arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, endrin, lindane, methoxychlor, toxaphene, 2-4-D; and Silvex] and which is not a hazardous waste for any other reason in the waste is generated by persons who utilize the arsenical-treated wood and wood product for these materials' intended end use.⁸*

E. PRODUCTS TREATED WITH OTHER WOOD PRESERVATIVES

There are numerous other preservatives that are and have been used to treat wood. Many of these preservatives contain no TCLP constituents and therefore do not exhibit the toxicity characteristic under federal hazardous waste rules. The generator of the used treated wood must determine whether the preservative contains any TCLP constituents.



V. THE MATERIAL IS NOT A NON-HAZARDOUS SOLID WASTE -- NOW WHAT?

Treated wood removed from service that is not destined for reuse and is not a hazardous waste can be disposed a solid waste. State and local jurisdictions may have particular guidelines which the user should be aware of and follow. The Consumer Information Sheets also contain information on disposal practices, including warnings never to burn treated wood in fireplaces, open fires, or wood stoves or to permit haphazard or random disposal. Following are some disposal practices for treated wood.

Landfilling. As a non-hazardous material, discarded treated wood and construction wastes may generally be disposed at municipal landfills approved to receive the material by the state and / or local authorities. Some non-hazardous waste landfills may classify treated wood as a "special waste" and require documentation of its status.

Energy Recovery. Treated wood removed from service has energy value and therefore can be considered an energy resource. There are facilities that utilize untreated as well as treated wood waste as a fuel. The treated wood waste is generally creosote or penta treated materials. This option is currently expanding and offers the advantages of permanent disposal and increased utilization of our timber and energy resources in meeting our country's energy needs.

Bioremediation. Some research and development efforts are taking place in the area of bioremediation, also known as biodegradation, where a combination of physical, chemical and biological processes are used to remove and / or reclaim the preservative chemical and render the wood product suitable as fibre. While such technologies are welcomed and encouraged, they are generally not available on a large scale basis for the management of non-hazardous treated wood wastes.

Hazardous Waste Facilities. Although treated wood is not a federal hazardous waste, disposal in hazardous waste incinerators or landfills may be an available option. However, the high cost and unnecessary use of a limited resource for disposal of non-hazardous materials make this option generally inappropriate. In examining the disposal of penta-treated utility poles alone, the Electric Power Research Institute has estimated that, "by avoiding the hazardous waste designation, the utility industry will save \$15 billion between 1989 and 1993." When expanded to all treated wood, the savings could exceed several billions of dollars each year.



INFORMATION SOURCES

If you have additional questions regarding the disposal of treated wood, you are encouraged to contact the members of the Treated Wood Life Cycle Management coalition, including the American Wood Preservers Institute, Association of American Railroads, Edison Electric Institute, National Rural Electric Cooperative Association, National Timber Piling Council, The Railway Tie Association, and the Western Wood Preservers Institute.

For further information contact:

American Wood Preservers Institute
1945 Old Gallows Road, Suite 150
Vienna, Virginia 22182
(703) 893-4005

Association of American Railroads
50 F Street, N.W.
Washington, D.C. 20001
(202) 639-2839

Edison Electric Institute
701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
(202) 508-5645

National Rural Electric Cooperative Association
Energy and Environmental Policy Division
1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036
(202) 857-9606

National Timber Piling Council
446 Park Avenue
Rye, New York 10580
(914) 835-0006

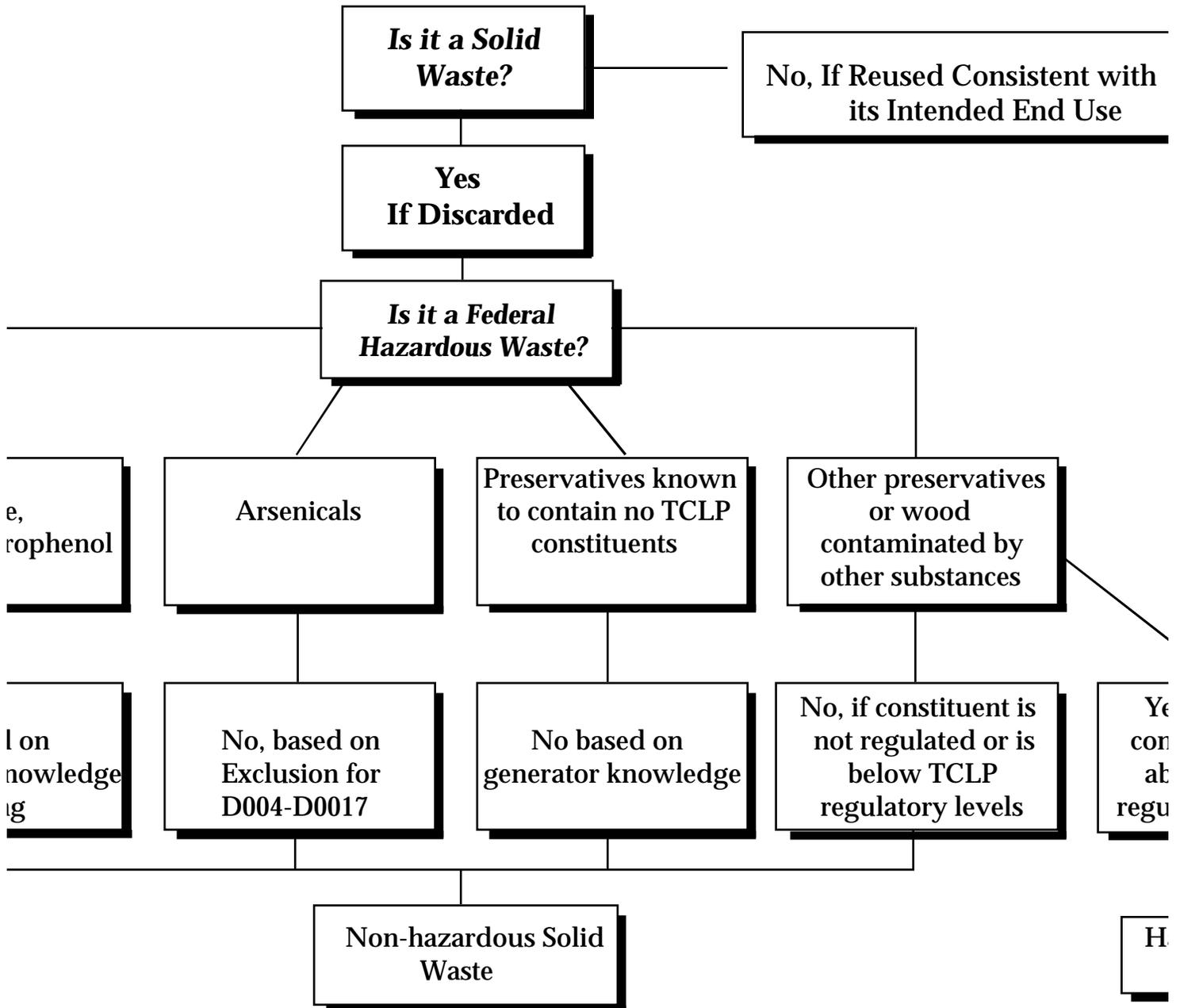
The Railway Tie Association
140 Cove Avenue
Gulf Shore, Alabama 36547
(205) 968-5927

Western Wood Preservers Institute
601 Main Street, Suite 401
Vancouver, Washington 98660
(206) 693-9958

**END NOTES**

- 1 **In the Matter of Chapman Chemical Co., et al., FIFRA DKT. No. 529, et al., Decision on Threshold Legal Issues** (June 11, 1985).
- 2 "Preamble to the State of Washington Amendments to the Dangerous Waste Regulations Chapter 173-303 WAC" January 1994.
- 3 Electric Power Research Institute, "Pentachlorophenol (pcp) - Treated Wood Poles and Crossarms: Toxicity Characteristic Leach Procedure Results." **Report Summary EN 7062s**, January 31, 1992.
- 4 Electrical Power Research Institute, "Creosote - Treated Wood Poles: Sampling and Analysis for the TCLP", **Technical Brief RP 2485-9, 2879-6**, March 1992.
- 5 Landau Associates, Inc. "Petition for Exclusion of Creosote - Treated Marine Timbers and Pilings", In the matter of Washington Public Ports Association Petitioner for Exclusion Under Chapter 70.105 RCW and WAC Chapter 173-303. October 12, 1992 page 29.
- 6 Association of American Railroads, "A Review of Toxicity Characteristic Leaching Procedure Testing of Railroad Crossties," Report No. R-861 (July, 1994).
- 7 **Id.** at iii.
- 8 57 Fed. Reg. 30658 (July 10, 1992), codified at 40 CFR § 261.4(B9).

MANAGEMENT OF USED TREATED WOOD PRODUCTS



INORGANIC ARSENICAL PRESSURE-TREATED WOOD

(Including: CCA, ACA, and ACZA)

CONSUMER INFORMATION

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing inorganic arsenic to protect it from insect attack and decay. Wood treated with inorganic arsenic should be used only where such protection is important.

Inorganic arsenic penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to inorganic arsenic may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use or dispose of the treated wood.

USE SITE PRECAUTIONS

Wood pressure-treated with waterborne arsenical preservatives may be used inside residences as long as all sawdust and construction debris are cleaned up and disposed of after construction.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with honey.

Treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

When power-sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

PENTACHLOROPHENOL PRESSURE-TREATED WOOD

CONSUMER INFORMATION

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing pentachlorophenol to protect it from insect attack and decay. Wood treated with pentachlorophenol should be used only where such protection is important.

Pentachlorophenol penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to pentachlorophenol may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use or dispose of the treated wood.

USE SITE PRECAUTIONS

Long treated with pentachlorophenol should not be used for log homes.

Wood treated with pentachlorophenol should not be used where it will be in frequent or prolonged contact with bare skin (for example, chairs, and other outdoor furniture), unless an effective sealer has been applied.

Pentachlorophenol-treated wood should not be used in residential, industrial, or commercial interiors except for laminated beams or for building components which are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied. Sealers may be applied at the installation site.

Wood treated with pentachlorophenol should not be used in interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are unlikely to crib (bite) or lick the wood, pentachlorophenol-treated wood may be used for building components which are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied. Sealers may be applied at the installation site.

Do not use pentachlorophenol-treated wood for farrowing or brooding facilities.

Do not use treated wood under circumstances where the preservatives may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with the honey.

Pentachlorophenol-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers rated at 20 million BTU/hour or greater heat input or its equivalent in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with pentachlorophenol-treated wood; when handling the treated wood, wear longsleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power-sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Urethane, shellac, latex epoxy enamel and varnish are acceptable sealers for pentachlorophenol-treated wood.

CREOSOTE PRESSURE-TREATED WOOD

CONSUMER INFORMATION

This wood has been preserved by pressure-treatment with an EPA-registered pesticide containing creosote to protect it from insect attack and decay. Wood treated with creosote should be used only where such protection is important.

Creosote penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to creosote may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use the treated wood.

USE SITE PRECAUTIONS

Wood pressure-treated with creosote should not be used where it will be in frequent or prolonged contact with bare skin (for example, chairs, and other outdoor furniture), unless an effective sealer has been applied.

Creosote-treated wood should not be used in residential interiors. Creosote-treated wood in interiors on industrial buildings should be used only for industrial building components which are in ground contact and are subject to decay or insect infestation and wood block flooring. For such uses, two coats of an appropriate sealer must be applied. Sealers may be applied at the installation site.

Wood treated with creosote should not be used in interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are unlikely to crib (bite) or lick the wood, creosote-treated wood may be used for building components which are in ground contact and are subject to decay or insect infestation if two coats of an effective sealer are applied. Sealers may be applied at the installation site.

Do not use creosote-treated wood for farrowing or brooding facilities.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with honey.

Creosote-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Do not use creosote-treated wood where it may come into direct or indirect contact with drinking water for domestic animals, or livestock, except for uses involving incidental contact such as docks and bridges.

HANDLING PRECAUTIONS

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with creosote-treated wood; when handling the treated wood, wear longsleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power-sawing and machining, wear goggles to protect eyes from flying particles.

After working with the wood, and before eating, drinking, and use of tobacco products, wash exposed areas thoroughly.

If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Coal tar pitch and coal tar pitch emulsion are effective sealers for creosote-treated wood-block flooring. Urethane, epoxy, and shellac are acceptable sealers for all creosote treated wood.