

**ENVIRONMENTAL PROTECTION AGENCY**

40 CFR Part 429

[WH-FRL 1697-8]

**Timber Products Processing Point Source Category****AGENCY:** Environmental Protection Agency.**ACTION:** Final rule.

**SUMMARY:** EPA is today issuing final regulations which limit the discharge of pollutants into navigable waters and publicly owned treatment works from existing and potential new sources in the timber products industry. The intended effect of these regulations is to reduce the amount of conventional and toxic pollutants presently discharged by the timber industry. Today's action revises part but not all of the existing effluent limitations and standards for the timber industry. Nevertheless, for the sake of completeness, the regulations published in this notice incorporate both the changes to the existing timber effluent limitations and standards made in the course of this rulemaking and the limitations and standards which were not changed. The published regulations thus completely supersede all previously existing effluent limitations and standards for the timber products processing point source category.

**DATE:** These regulations shall become effective March 11, 1981.

**FOR FURTHER INFORMATION CONTACT:** Richard Williams 202-426-2554.

**SUPPLEMENTARY INFORMATION:** In accordance with 40 CFR 100.01 (45 FR 26048), the regulations developed in this rulemaking shall be considered issued for purposes of judicial review at 1:00 p.m. Eastern time on February 6, 1981. The compliance date for the newly issued BCT regulations is as soon as possible, but in any event no later than July 1, 1984. The compliance date for the newly issued NSPS and PSNS regulations is the date the new source subject to those regulations commences discharge.

Under section 509(b)(1) of the Clean Water Act judicial review of these regulations is available only by the filing of a petition for review in the United States Court of Appeals within ninety days of the date these regulations are considered issued for purposes of judicial review. Under section 509(b)(2) of the Clean Water Act, the requirements which are the subject of today's notice may not be challenged later in civil or criminal proceedings

brought by EPA to enforce these requirements.

Those portions of the existing timber effluent guidelines limitations and standards that are not substantively amended by this notice are not subject to judicial review nor is their effective date altered by this notice.

Proposed on October 31, 1979, the regulations developed in this rulemaking have been exposed to extensive public comment. This Section describes the legal authority and background, the technical and economic data bases, the changes made since proposal, and other aspects of these regulations. This section also summarizes the public comments received on the proposal and sets forth the Agency's response.

These regulations are supported by four major documents, all of which are available from EPA. Analytical methods are discussed in *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants*. EPA's technical conclusions are detailed in *Development Document for Effluent Limitations Guidelines New Source Performance Standards and Pretreatment Standards for the Timber Products Processing Point Source Category*. The Agency's economic analysis is presented in *Economic Impact Analysis of Alternative Pollution Control Technologies, Wood Preserving Subcategories of the Timber Products Industry*, and *Economic Impact Analysis of Alternative Pollution Control Technologies, Wet Process Hardboard and Insulation Board Subcategories of the Timber Products Industry*.

Technical information may be obtained from Richard E. Williams, Effluent Guidelines Division (WH-552), EPA, 401 M Street SW., Washington, D.C. 20460, or through calling (202) 426-2554. Copies of the technical document may be obtained from the Distribution Officer at the above address, or through calling (202) 426-2724. The economic analyses may be obtained from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

The Record will be available for public review three weeks after the [Federal Register publication date of the regulations] in EPA's Public Information Reference Unit, Room 2404 (Rear) (EPA Library), 401 M St. SW., Washington, D.C. The EPA information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

**I. Legal Authority**

These regulations are being promulgated under the authority of sections 301, 304, 306, 307 and 501 of the Clean Water Act (the Federal Water

Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., as amended by the Clean Water Act of 1977, Pub. L. 95-217) (the "Act"). These regulations are also being promulgated in response to the Settlement Agreement in *Natural Resources Defense Council, Inc. v. Train*, 8 ERC 2120 (D.D.C. 1976), as modified at 12 ERC 1833, March 9, 1979).

**II. Scope of this Rulemaking**

The Timber Products Processing Industry (timber industry) consists of a diverse group of manufacturing plants whose primary raw material is wood and whose products range from finished lumber and other wood building products to hardboard and preserved wood. This industrial group is comprised of thousands of industrial operations, including nearly 11,000 sawmills, 3,000 millwork and finishing operations, 500 veneer and plywood plants, more than 415 wood-preserving plants, 75 particleboard plants, 16 dry process hardboard plants, 11 wet process hardboard plants, 10 insulation board plants, and 5 plants producing both wet process hardboard and insulation board. The size of these operations ranges from small family-owned concerns to facilities with over a thousand employees. Their geographical distribution follows the natural range of timberland in the Pacific Northwest, Southeast, North Central and Northeastern United States.

These regulations establish or amend best practicable control technology currently available (BPT), and best conventional pollutant control technology (BCT) effluent limitations guidelines, new source performance standards (NSPS), and pretreatment standards for new sources (PSNS) for some subcategories of the Timber Products Processing Point Source Category. They effectively build upon the water pollution control requirements already instituted for the timber industry in the previous round of rulemaking, which took place in 1973-1976. The previous round of rulemaking was accomplished in three phases. In the first phase, EPA promulgated BPT, BAT, NSPS, and PSNS regulations for a number of subcategories of the timber industry (April 18, 1974, 39 FR 13942; 40 CFR Part 429, Subparts A-H). In the second phase, EPA promulgated BPT, BAT, NSPS and PSNS regulations for the remaining subcategories of the timber industry (January 16, 1975, 40 FR 2804; 40 CFR Part 429, Subparts I-M). In the third phase, EPA promulgated PSES regulations for all the timber subcategories (December 9, 1976, 41 FR 53930; 40 CFR Part 429, Subparts A-M).

The current round of rulemaking takes these already promulgated regulations as a starting point and modifies them, where necessary, to bring them into conformity with the 1977 Amendments' emphasis on the control of toxic pollutants and their alteration of the pollution control requirements for direct dischargers of conventional pollutants. These final regulations—the product of the current rulemaking effort—do not differ markedly from the old regulations. Changes are being made in eight of the preexisting timber industry subcategories. These changes consist of the following:

(1) the old Wet Process Hardboard subcategory is being divided into two parts and the two old Insulation Board subcategories are being combined into one subcategory,

(2) a new no discharge of process wastewater PSNS is being promulgated for the Wood Preserving-Water Borne or Nonpressure subcategory (previously the Wood Preserving subcategory).

(3) a new no discharge of process wastewater NSPS for the Wood Preserving Steam subcategory and a new no discharge of process wastewater PSNS for the Wood Preserving Steam and Boulton subcategories are being promulgated.

(4) new BPT, BCT, and NSPS limitations and standards are being promulgated for the Hardboard and Insulation Board subcategories.

(5) the previously promulgated BAT limitation for the Hydraulic Barking subcategory is being withdrawn.

(6) NSPS for the wood furniture and fixture production with water wash spray booths or laundry facilities subcategory is being amended to make it conform with the existing BAT for this subcategory, which requires no discharge of process wastewater pollutants.

The Agency's methodology in developing these new regulations and its rationale for them are summarized below.

### III. Legal Background

#### A. The Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (section 101(a)). By July 1, 1977, existing industrial dischargers were required to achieve "effluent limitations requiring the application of the best practicable control technology currently available" ("BPT") (section 301(b)(1)(A)); and by July 1, 1983, these dischargers were required to achieve

"effluent limitations requiring the application of the best available technology economically achievable (BAT), which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants" (section 301(b)(2)(A)). New industrial direct discharges were required to comply with new source performance standards (NSPS) under section 306, based on best available demonstrated technology (BADT); and new and existing dischargers to publicly owned treatment works (POTW) were subject to pretreatment standards under sections 307 (b) and (c) of the Act. While the requirements for direct dischargers were to be incorporated into National Pollutant Discharge Elimination System (NPDES) permits issued under section 402 of the Act, pretreatment standards were to be enforceable directly against dischargers to POTW (indirect dischargers).

Although section 402(a)(1) of the 1972 Act authorized the setting of requirements for direct dischargers on a case-by-case basis, Congress intended that, for the most part, control requirements would be based on regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of BPT and BAT and regulations setting forth new source performance standards. In addition, sections 304(f), 307(b) and 307(c) required promulgation of regulations for pretreatment standards and section 307(a) required promulgation of effluent standards applicable to all dischargers of toxic pollutants.

The EPA was unable to promulgate many of these guidelines and standards by the dates contained in the Act. In 1976, EPA was sued by several environmental groups and in settlement of this lawsuit, EPA and the plaintiffs executed a "Settlement Agreement," which was approved by the Court. This Agreement required EPA to develop a program and adhere to a schedule for promulgation for 21 major industries of BAT effluent limitations guidelines, and pretreatment standards for 65 "priority" pollutants and classes of pollutants. See *Natural Resources Defense Council, Inc., v. Train*, 8 ERC 2120 (D.D.C. 1976), modified March 9, 1979; 12 ERC 1833.

On December 27, 1977 the President signed into law the Clean Water Act of 1977. Although this law makes several important changes in the Federal water pollution control program, its most significant feature is its incorporation of many of the basic elements of the Settlement Agreement program for toxic pollutant control. Sections 301(b)(2)(A)

and 301(b)(2)(C) of the Act now require the achievement by July 1, 1984, of effluent limitations requiring application of BAT for control of toxic pollutants, including the 65 "priority" pollutants, and classes of pollutants which Congress declared "toxic" under section 307(a) of the Act. Likewise, EPA programs for new source performance standards and pretreatment standards are now aimed principally at control of toxic pollutants. Moreover, to strengthen the toxics control programs, section 304(e) of the Act authorizes the Administrator to prescribe "best management practices" (BMP) to prevent the release of toxic and hazardous pollutants from plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage associated with, or ancillary to, the manufacturing or treatment process.

In keeping with its emphasis on toxic pollutants, the Clean Water Act of 1977 revises the control program for nontoxic pollutants. Instead of BAT for "conventional" pollutants identified under section 304(a)(4), (including Biochemical Oxygen Demand, suspended solids, fecal coliform, oil and grease and pH), the new section 301(b)(2)(E) requires achievement by July 1, 1984 of "effluent limitations requiring the application of the best conventional pollutant control technology" (BCT). For nontoxic, nonconventional pollutants, sections 301(b)(2)(A) and 301(b)(2)(F) require achievement of BAT effluent limitations within three years after their establishment, or July 1, 1984, whichever is later, but not later than July 1, 1987.

A somewhat more in depth review of the meaning of BPT, BAT, BCT, NSPS, PSES and PSNS is provided below.

#### 1. Best Practicable Control Technology (BPT).

The Clean Water Act requires existing industrial dischargers to achieve "effluent limitations requiring the application of the best practicable control technology currently available" (BPT) by July 1, 1977. Attainment of BPT level technology thus constitutes the first step in the two step reduction of existing direct discharger effluent levels contemplated by the Act.

BPT is generally based on the average of the best existing performance by plants of various sizes, ages, and unit processes within the industry or subcategory. This average is not based on a broad range of plants in an industry subcategory but on performance levels achieved by the best plant or plants.

In establishing BPT limitations, the Agency considers the total cost of the application of technology in relation to

the effluent reduction benefits to be achieved from the technology. The cost/benefit inquiry for BPT is a limited balancing, which does not require the Agency to quantify benefits in monetary terms. See, e.g., *American Iron and Steel Institute v. EPA*, 526 F. 2d 1027 (3rd Cir. 1975); In balancing costs in relation to effluent reduction benefits, EPA considers the volume and nature of existing discharges, the volume and nature of discharges expected after application of BPT the general environmental effects of the pollutants and the costs and economic impacts of the required pollution control level. The Act does not require or permit consideration of water quality problems attributable to particular point sources or industries, or water quality improvements in particular water bodies. See, *Weyerhaeuser Company v. Costle*, 590 F. 2d 1011 (D.C. Cir. 1978).

#### 2. Best Available Technology (BAT).

The Clean Water Act of 1977 requires the achievement by July 1, 1984, of effluent limitations requiring the application of the "best available technology economically achievable" (BAT) for control of toxic and nonconventional pollutants. It thereby establishes BAT as the principal national means of controlling the discharge of toxic and nonconventional pollutants directly to navigable waters. BAT is not based on the average of the best performance within an industrial subcategory but on the very best existing performance in the industrial subcategory or category or, alternatively, the best performance capable of being achieved by transfer of technology.

In arriving at BAT, the Agency need not consider the costs of applying a technology in relation to the effluent reduction benefits to be achieved from the technology. No such cost/benefit analysis is required. All that is required is that the Agency consider the cost of applying the technology at some point. The Agency thus retains considerable discretion in assigning the weight to be accorded costs in its BAT determination. See, *Weyerhaeuser v. Costle*, *supra*; *American Paper Institute v. Train*, 543 F.2d 328 (D.C. Cir. 1976).

#### 3. Best Conventional Pollutant Control Technology (BCT).

The 1977 amendments added sections 301(b)(2)(E) and 304(b)(4)(B) to the Act, which revises the control program for conventional pollutants by replacing BAT limitations with limitations based on the "best conventional pollutant control technology" (BCT) for discharges of conventional pollutants from existing sources. Section 304(a)(4) defines conventional pollutants to include BOD,

TSS, fecal coliform pH and any additional pollutants defined by the Administrator as "conventional." (Note: The Administrator defined Oil and Grease as a conventional pollutant on July 30, 1979, 44 FR 44501).

BCT requires that limitations for conventional pollutants be assessed in light of a new "cost reasonableness" test. This test is described and defined in Best Conventional Pollutant Control Technology, Reasonableness of Existing Effluent Limitation Guidelines (44 FR 50732, August 29, 1979). The BCT test compares the cost incurred by an industrial point source in removing a pound of conventional pollutants (BOD and TSS) beyond BPT limitations, to the cost incurred by an average size POTW in removing a pound of BOD and TSS. If the industrial cost is lower, the proposed limitation passes the cost reasonableness test. Details concerning the methodology of the cost test used to determine BCT are contained in Section IX of the Development Document.

#### 4. New Source Performance Standards (NSPS).

Section 306 of the Act requires promulgation of standards of performance for new sources. The basis for these new source performance standards (NSPS) is the best available demonstrated technology. New plants have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. Congress therefore directed EPA to base NSPS on the best demonstrated process changes, in-plant controls, and end-of-pipe treatment technologies which reduce pollution to the maximum extent feasible.

#### 5. Pretreatment Standards for Existing Sources (PSES).

Section 307(b) of the Act requires EPA to promulgate pretreatment standards for existing sources (PSES), which must be achieved within three years of promulgation. PSES are designed to prevent the discharge of pollutants which pass through a POTW untreated or inadequately treated or which interfere with or are otherwise incompatible with the operation of POTW. As noted in the legislative history of the Clean Water Act of 1977, they are to be technology based, analogous to the best available technology for removal of toxic pollutants.

One of the objectives of PSES is to ensure parity between the treatment of indirect dischargers' wastewater and the treatment of direct dischargers' wastewater. At a minimum, Congress intended that the pollutant reduction achieved by the combination of pretreatment and treatment at the

municipal treatment works would equal the pollutant reduction achieved by a direct discharger applying BAT treatment. Consequently, where removal by a POTW of an indirect discharger's toxic effluent is less than the removal achieved, by a comparable direct discharger's BAT system, pretreatment is needed. Another objective of PSES is to ensure that toxic pollutants in POTW influent do not contaminate the sludge and thereby limit POTW sludge management alternatives, including the beneficial use of sludges on agricultural lands. The general pretreatment regulations which served as the framework for the pretreatment regulations for the timber industry, can be found at 40 CFR Part 403.

#### 6. Pretreatment Standards for New Sources (PSNS).

Section 307(c) of the Act requires EPA to promulgate pretreatment standards for new sources (PSNS) at the same time that it promulgates NSPS. Like PSES, these standards should prevent the discharge of pollutants which pass through, interfere with, or are otherwise incompatible with the operation of the POTW. New indirect dischargers have the opportunity to incorporate the best demonstrated process changes, in-plant controls, and to use plant site selection to ensure adequate treatment system installation. Consequently, PSNS is somewhat analogous to the best available demonstrated technology.

### IV. Summary of Methodology and Data Gathering Efforts

In developing these regulations, EPA's first basic task was to decide whether the subcategorization scheme employed in the previous regulation remained appropriate. This inquiry required gathering data on such factors as raw materials, final products, manufacturing processes, equipment, age and size of plants, water usage, wastewater constituents, treatment technology availability and cost to determine whether these factors were sufficiently alike to justify applying the same effluent limits to all facilities within each established subcategory.

The second basic step was to decide which subcategories required altered effluent limitations or standards, given the change in emphasis mandated by the 1977 Amendments, and to decide what those altered effluent limits would be. This step required gathering data on the wastewater characteristics of the various subcategories, the wastewater treatment technologies capable of controlling these pollutants, the degree of control achieved by these technologies and the economic impact of

requiring these or comparable technologies.

Existing sources of data for these inquiries included past regulation development studies of the industry, and information obtained from EPA Regions, State regulatory offices, academic institutions, and trade associations. Review of this data indicated, however, that EPA needed additional information on (1) the sources and volumes of wastewater; (2) the amount of pollutants in the wastewater (toxic and otherwise); and (3) wastewater control techniques and their costs; i.e. both in-process and end-of-process treatment and disposal systems either in use or capable of being used by the industry.

EPA undertook to acquire this additional data in two ways. First, under the authority of section 308 of the Act, EPA sent a technical data collection portfolio (DCP) to 315 timber industry plants (243 of which responded). A companion DCP was sent to timber industry plants to collect economic information. Second, EPA visited production facilities to interview personnel, examine treatment plant design and historical operating data, and sample plant waste streams. The principal object of the sampling program was to determine to what extent any of the toxic pollutants identified by EPA as "priority" toxic pollutants were present in timber industry wastewaters and to what extent they were removed by existing technologies. This sampling was conducted in two phases. In the first, or "screening" phase, the purpose was merely to determine whether any of the priority pollutants were present. In the second, or "verification" phase, the Agency retested certain subcategories singled out in the first phase for further study because of the levels of toxic pollutants present. Nineteen plants in three segments were visited, including seven wood preserving plants, seven hardboard plants, and five insulation board plants. Nine plants were visited twice.

Following the above sampling program and identification of the subcategories which appeared to require additional effluent limitations and standards, EPA identified several distinct control and treatment technologies, including both in-plant and end-of-process technologies which are either in use or capable of being used in the timber industry. The Agency compiled and analyzed both historical and newly generated data on the effluent quality resulting from the application of these technologies. The long term performance, operational limitations, and reliability of each of the

treatment and control technologies were also identified. In addition, EPA considered the nonwater quality environmental impacts of these technologies, including impacts on air quality, solid waste generation, and energy requirements.

The Agency then estimated the costs of compliance to the industry for each control and treatment technology, relying upon two separate methodologies. NSPS and PSNS costs were derived from unit cost curves applied to model plant characteristics (production, flow and pollutant loads) developed for each subcategory. BPT and BCT costs for the wet process hardboard segment and PSES costs for the wood preserving subcategories were derived from unit cost curves applied on a plant-by-plant basis. This estimate, prepared for every potentially affected plant in the technical data base, took into consideration plant specific wastewater characteristics and flows, as well as technology currently in place. The costs themselves were derived from unit cost curves developed by standard engineering analysis for each unit process within a control and treatment technology system (pump station, settling basin, etc.). These unit process costs were added to yield total cost at each treatment level. After confirming the reasonableness of both methodologies by comparing EPA cost estimates to treatment system costs supplied by the industry, the Agency evaluated the economic impacts of these costs.

Upon consideration of each of these factors, EPA identified various control and treatment technologies as BPT, BCT, PSES, PSNS, and NSPS. The Agency then formulated effluent limitations guidelines and standards which required the attainment of the effluent reduction achieved by the proper operation of these or equivalent technologies. (A more complete description of the Agency's methodology, data gathering efforts and analytical sampling procedures can be found in the Development Document Section III and in the Preamble to the Proposed Regulation [44 FR 62810, October 31, 1979].

#### V. Additional Data Gathering

Between the time of proposal and the date of promulgation, the Agency engaged in a number of additional data gathering activities. These activities may be summarized as follows: (1) the Agency studied the ten plants which were considered closure candidates under the proposed wood preserving PSES to determine whether its original closure estimate was valid and whether

these plants had alternative means to achieve the proposed standard; (2) the Agency collected additional data on the performance of POTW in treating and removing PCP; (3) the Agency collected additional effluent data from the wet process hardboard industry; and (4) the Agency conducted a detailed study of one plant in the wet process hardboard industry which exhibited an atypically high raw waste load. The purpose of this study was to develop information to assist in developing a regulatory strategy for this plant.

With the exception of the effluent data from the wet process hardboard industry, the additional data gathered was either corroborative of the data originally gathered or had no bearing on the Agency's final decision. The additional wet process hardboard data, which had some bearing on the final effluent limitations set for that industry, were collected in response to the industry's criticisms. The data were provided by industry members. Consequently, the Agency did not specifically make any of the additional data gathered available for a new round of public comment.

A full discussion of the results of these additional data gathering efforts and their relevance to the final rulemaking can be found below in the relevant sections of this preamble.

### VI. Summary of Proposal and Changes From Proposal

#### A. Wood Preserving Segment

##### 1. Industry profile.

There are more than 415 wood preserving plants operated by over 300 companies in the United States. The plants are concentrated in two areas, the Southeast from east Texas to Maryland and along the Northern Pacific Coast. These areas correspond to the natural ranges of the southern pine and Douglas fir—western red cedar, respectively.

Approximately 250 million cubic feet of preserved wood products are produced each year. The most commonly treated woods are southern pine, Douglas fir, and oak, although railroads use large quantities of other hardwoods where they are available. Railroad ties constitute the largest use of treated wood, accounting for 95 million cubic feet in 1976. Lumber and timbers accounted for 67 million cubic feet, and treated poles accounted for 53 million cubic feet. These three classes accounted for 84 percent of the volume of wood products which were treated in 1976.

The wood preserving process consists of two basic steps: (1) conditioning the

wood to reduce its natural moisture content and to increase its permeability; and (2) impregnation of the wood with preservatives. The conditioning of wood raw material ensures that the preserving chemicals are absorbed in sufficient amounts. It may be performed through a variety of methods including (1) air drying, which consists of long term storage in the open air; (2) dry kiln conditioning, which consists of applying dry heat to the wood in an enclosed structure; (3) steam conditioning, which involves subjecting the wood to a steam pressure in a pressurized treating cylinder, followed by a vacuum cycle which removes moisture from the wood; and (4) Boulton conditioning, which involves heating the wood in the treating cylinder immersed in oily preservative under a partial vacuum.

After conditioning, the wood can be treated with preservatives through the use of either nonpressure processes, which involve immersing the conditioned wood in an open tank containing the preservative chemicals, or pressure processes, which rely on pressure to force the preservative into the wood. The most commonly used preservatives in these treatment processes are creosote, pentachlorophenol (PCP), and various formulations of water soluble inorganic chemicals. Eighty percent of the plants use at least two of the three types of preservatives. Many plants treat with one or two preservatives and a fire retardant consisting of inorganic salts.

The principal determinant of the amount of wastewater generated by wood preserving plants is the conditioning process employed. Air and kiln drying generate the least amount of wastewater followed by the Boulton and the steam conditioning processes. The principal determinant of the actual wastewater composition is the kind of preservative used to treat the wood. Wastewaters from plants which treat solely with inorganic salts contain high concentrations of copper, chromium, arsenic, and other heavy metals. These wastewaters, which are almost invariably generated by plants which employ the air or kiln drying process, are low in volume and are recycled for use as make up water in new preservative batches. Wastewaters from plants which treat with creosote or pentachlorophenol contain toxic organic pollutants such as pentachlorophenol, benzene, toluene, and the polynuclear aromatic components (PNAs) of creosote that are contained in the entrained oils. These wastewaters, generated by plants which use the Boulton or steam conditioning

processes, tend to be acidic and contain high oil and COD concentrations. They may also contain traces of heavy metals at plants which use the same retort for both waterborne salts and oil type preservatives, or which apply dual treatments to the same stock i.e., treat with two preservatives, one organic and one inorganic.

About 125 plants use both organic and inorganic preservatives to treat wood, although the organic preservative wood treating system usually is separate from the inorganic system. Analytical data generated during this study and earlier analyses of wood preserving wastewaters concluded that, even when the organic and inorganic process water/wastewater systems are kept separate, there is often some inorganic material ("fugitive metals") in the organic treatment system. This cross contamination occurs from such activities as the use of the same carts to move wood in and out of both organic and inorganic treating cylinders, and drippage from the inorganic operation into the organic side. Analytical data show that the total concentrations of fugitive metals are always less than 5 milligrams per liter, and generally well below 1 mg/l.

#### 2. *Previously Applicable Subcategorization Scheme and Effluent Limitation Guidelines and Standards.*

The effluent limitation guidelines and standards promulgated in the 1973-1976 round of rulemaking divided the wood preserving segment into three subcategories: Wood Preserving, Wood Preserving—Steam, and Wood Preserving—Boultonizing. See 40 CFR Part 429.

The primary basis for this subcategorization scheme was the conditioning process used preparatory to preservative treatment. This scheme was employed because the conditioning process tended to correlate closely with the volume of process wastewater generated and with the existence of effective wastewater technology. This correlation between conditioning process and treatment capability is reflected in the old effluent limitations and standards for the various subcategories. For instance, the previously promulgated BPT, BAT, NSPS and PSES limitations and standards for the Wood Preserving subcategory—which for the most part included plants employing air and kiln drying conditioning methods—required no discharge of process wastewater pollutants, because such plants generated low volumes of wastewater and had available a widely used recycling technology which could achieve zero discharge. Similarly, the

previously promulgated BPT, BAT, and NSPS limitations and standards for the Boultonizing subcategory—which included plants utilizing the Boulton conditioning process—required no discharge of wastewater pollutants because these plants also were able to meet a no discharge limitation (although PSES and PSNS for this subcategory allowed the introduction of process wastewater into a POTW). On the other hand, the previously promulgated BPT, BAT, NSPS, PSES and PSNS effluent limitations and standards for the Wood Preserving—Steam subcategory plants—which for the most part included plants employing the steam or vapor drying conditioning processes—allowed the direct discharge of wastewater pollutants to navigable waters and the introduction of process wastewater into a POTW because these plants tended to generate more wastewater than plants in other subcategories.

#### 3. *Summary of the Proposed Regulation and Changes from the Proposal.*

##### a. *Subcategorization.*

In the proposed regulation, EPA elected to retain the subcategorization scheme employed in the previously promulgated regulations with a few minor exceptions. These exceptions consisted of changing the title of the "Wood Preserving" subcategory to "Wood Preserving-Water Borne or Nonpressure;" changing the language of the "Wood Preserving—Water Borne or Nonpressure" subcategory description; and shifting from the Wood Preserving—Steam to the Wood Preserving—Water Borne or Nonpressure subcategory those plants which treated with the preservative fluorochromium-arsenic-phenol (FCAP). EPA proposed this latter change because FCAP is a waterborne solution which, though capable of being applied to steam conditioned wood, can also be recovered by the same zero discharge recycling technique as other waterborne preservatives.

The Agency received no comments concerning its proposed subcategory changes. Therefore, with the exception of a few minor clarifying word changes, it is adopting the proposed subcategorization scheme in the final regulation.

##### b. *Water Borne or Nonpressure Subcategory.*

With the exception of PSNS, EPA proposed no alteration in the existing effluent limitations and standards for the Water Borne or Nonpressure subcategory. This was because the existing BPT, BAT, NSPS, and PSES limitations and standards already required no discharge of process wastewater pollutants. EPA proposed to

alter the PSNS requirement—from compliance with general pretreatment requirements to no discharge—because it was considered anomalous to have a no discharge requirement for existing indirect dischargers and not have a similar requirement for new source indirect dischargers. After all, new source indirect dischargers generally have greater opportunities than existing indirect dischargers to install the requisite control technology.

The Agency received no comments specifically directed to its proposed alteration of the PSNS requirement and is accordingly adopting the proposal in the final regulation.

*c. Boulton and Steam Subcategories.*

(i) BPT, BCT, BAT, NSPS—Boulton.

EPA proposed no alteration in the existing BPT, BAT and NSPS limitations for Boulton subcategory plants because the existing BPT, BAT and NSPS limitations require no discharge of process wastewater pollutants. These existing limitations, which are believed necessary to control the Boulton subcategory plants' toxic pollutant discharge, will therefore continue in force. Because of the existing zero discharge BPT limitation, no BCT is being promulgated.

(ii) BPT, BCT, BAT, NSPS—Steam.

The Agency considered developing new BAT and BCT limitations for the Wood Preserving-Steam subcategory plants, since the existing BAT and BPT limitations permit the discharge of wastewater pollutants subject to limits on the pollutants Oil and Grease, pH, COD and phenols as measured by *Standard Methods*. The Agency's study of wood preserving plants, however, identified only one plant in the Steam subcategory which could be described as a direct discharger of process wastewater. This plant is an intermittent direct discharger, discharging only when precipitation occurs with such frequency and magnitude that the plant's wastewater treatment system cannot contain the precipitation and the plant's runoff. The Agency concluded that national effluent limitations were inappropriate for this single plant and proposed to withdraw the existing BAT limitations for the Steam subcategory, leaving the appropriate controls and limitations for this plant to be determined by the permit issuer using best engineering judgment. It also proposed to refrain from developing BCT limitations. Because no commenter objected to the Agency's proposed decision to withdraw the existing BAT limitations and refrain from developing BCT limitations, the Agency's proposal has been incorporated in the final regulations.

The proposed regulation amended the existing NSPS for Steam subcategory plants to require no discharge of process wastewater. This was done for several reasons. First, since at least ninety percent of all wood preserving plants are already achieving zero discharge, EPA considered new source Steam subcategory plants to be capable of achieving this level of control. Second, new source Steam subcategory plants have opportunities, not readily available to existing ones, to install treatment technology such as spray evaporation or spray irrigation which can eliminate the discharge of contaminated wastewater. Third, the Agency's economic impact analysis concluded that the cost of designing and installing the proper systems needed to achieve zero discharge status would not hinder the addition of new capacity. No commenter took issue with this proposed alteration of Steam subcategory NSPS requirements. Consequently, the proposed NSPS has been adopted in the final regulation.

(iii) PSES—Boulton and Steam. The most significant and the most controversial aspect of the Agency's proposal for the wood preserving segment was its proposal to amend the existing PSES requirements for the Steam and Boulton subcategories to include a prohibition on the discharge of pentachlorophenol (PCP). The rationale for the proposed no discharge PCP limitation was: (1) the relatively high PCP concentrations in Boulton and Steam subcategory wastewaters; (2) the Agency's opinion that PCP passes through, is not effectively treated by, or is otherwise incompatible with publicly owned treatment works; and (3) the availability of a demonstrated and widely utilized technology for achieving zero discharge. The Agency calculated that the proposed no discharge requirement for PCP would eliminate the discharge of approximately 16 pounds per day of PCP and would cost the 27 affected Boulton and Steam plants \$4,087,000 and \$1,037, in capital and annualized costs, respectively. The Agency's economic impact analysis estimated that between 3 and 10 plants employing 83 to 404 workers might close if this standard were promulgated.

The Agency received a number of comments attacking its proposed zero discharge of PCP standard. The commenters argued that (1) the Agency has failed to meet the statutorily-required showing that PCP interferes with, passes through, or is otherwise incompatible with a POTW, (2) the effluent reduction achieved—the elimination of 16 pounds per day of PCP

discharge spread over 27 affected plants—does not justify the economic costs involved, (3) EPA has underestimated the economic costs and impact of the zero discharge PCP limitation, because all indirect discharging plants, i.e., a total of 42 plants rather than the 27, would be required to eliminate the discharge of all process wastewater, since PCP can be detected in wastewater from all wood preserving plants, regardless of whether or not the plants treat with PCP and (4) the zero discharge PCP limitation will simply transfer PCP to the air or to wastewater treatment sludge. One commenter argued that EPA should strengthen the proposed limitation by adding a direct limitation on PNAs.

After careful consideration of these comments, the Agency has come to the conclusion that the proposed zero discharge limitation for the Boulton and steam subcategories was too stringent and that it should simply let the existing PSES limitations continue in force. Several considerations play a part in this decision, no one of which is determinative.

The first such consideration is the economic impact of the proposed regulation. Since the proposed regulation was published the economic impact picture has changed: the Agency has learned that two of the ten plants identified as closure candidates have eliminated the discharge of process wastewater to a POTW and one plant has gone out of business. Therefore, these plants would not be affected by the proposed no discharge standard. Also, as a result of the Agency's detailed study of the remaining seven plants identified as closure candidates, cost of compliance estimates were revised for some plants. Because of these cost revisions, two plants were removed from the list of possible closure candidates, leaving three to five potential closures. Nevertheless, the Agency is concerned that for this industry the several million dollar costs associated with the proposed no discharge standard and the current projection of three to five closures out of a total of twenty-four affected plants is too high. This is especially true in light of the fact that the present oil and grease pretreatment requirement of 100 mg/1 effectively guarantees control of PCP to the level of 15 mg/1. This existing standard ensures significant reduction in the concentration of PCP in wood preserving wastewater and thus reduces the Agency's concern for PCP pass through. Another consideration is that the effluent reduction benefits of the

proposed no discharge PSES, though of some consequence, are not compelling.

EPA would like to emphasize that its decision to drop the no discharge of PCP pretreatment standard for existing sources is a close one and does not reflect a belief that PCP is a pollutant compatible with the operation of a POTW. Data which has come into the Agency's hands since proposal and theoretical considerations strongly suggest that PCP passes through POTW inadequately treated and is thus deserving of concern. Indeed, EPA's final PSNS limitation of zero discharge, discussed below is to a large extent based on EPA's concern for PCP pass through. Consequently, EPA would like to alert POTW to the potential desirability of requiring monitoring for PCP and PNAs should Boulton and Stream subcategory plants not be meeting their 100 mg/1 Oil and Grease limitation.

(iv) PSNS—Boulton and Steam. The proposed regulation changed the PSNS requirement for both the Steam and Boulton subcategories, from compliance with the general pretreatment regulations to a prohibition on the introduction of process wastewater pollutants into publicly owned treatment works. The Agency's rationale for this proposed no discharge pretreatment standard was an extension of its rationale for the proposed PSES standard: (1) the presence in Boulton and steam subcategory wastewaters of pollutants such as PCP, and PNAs, which either pass through or are otherwise incompatible with publicly owned treatment works and (2) the availability of a demonstrated and widely utilized technology for achieving zero discharge of process wastewater pollutants.

Commenters objected to EPA's proposed PSNS standard on basically two grounds. First, they argued that EPA's proposed zero discharge PSNS standard incorrectly assumes that NSPS and PSNS require the same level of control and ignores the statutory language that PSNS standards are merely intended to prevent the discharge into treatment works of pollutants which "may interfere with, pass through, or otherwise be incompatible with such works." Second, they argued that PSNS should be no more stringent than PSES, since it is based on the same statutory criteria as PSES.

EPA has considered these comments and has decided to promulgate the no discharge of process wastewater PSNS standard as proposed. Reconsideration of the proposed PSES persuaded EPA to withdraw that standard, primarily

because of the high projected costs, the presence of existing controls and the limited pollution reduction achievable. The issue of costs is, however, of lesser consequence in the case of new source pretreatment standards. Unlike existing sources, new sources have flexibility in equipment selection, plant design, and plant siting that is not always available to an existing plant and that allows a new source to achieve a no discharge of process wastewater pollutants level of control without prohibitive costs. In substantiation of this, the Agency's economic impact analysis of the timber industry concludes that the cost of installing no discharge technology will not hinder the addition of new capacity. Furthermore, the pretreatment goal of ensuring parity in the treatment of indirect and direct dischargers' effluent assumes special importance in the case of new sources, since such sources have a better opportunity than existing sources to choose their method of discharge. In the absence of a PSNS, such sources might be motivated to discharge their wastewater pollutants to a POTW rather than comply with the no discharge NSPS.

The no discharge PSNS will prevent the introduction into publicly owned treatment works of pollutants such as PCP which, as noted above, has a demonstrated tendency to pass through the operation of the treatment works. It will thereby ensure that the treatment of PCP in indirect, dischargers' effluent is at least as good as the treatment provided by comparable direct discharger NSPS systems capable of achieving zero discharge. See Comments 1 and 5 for a more complete discussion of these issues.

#### 4. Cost and Economic Impact.

The results of the economic analysis are summarized in the preamble to the proposed timber regulations (44 FR 62810, October 41, 1979) and the *Economic Impact Analysis of Alternative Pollution Control Technologies, Wood Preserving Subcategories of the Timber Products Industry*, EPA 440/2-80-087, December 1980, EPA 440/2-70-018.

The results of the analysis are also summarized here.

#### Direct Discharging Plants

**Limitations—BPT, BCT, BAT.** The Agency has not promulgated any new BPT, BCT, or BAT limitations for wood preserving plants. Therefore, there are no costs or economic impacts associated with BPT, BCT or BAT.

#### Indirect Discharging Plants—PSES.

The economic analysis of the proposed pretreatment standards concluded that, of the 27 indirect discharging wood preserving plants affected by the

proposed requirements, three to ten were potential closure candidates. These plants might be forced to close because of the costs associated with achieving zero discharge status. In light of that fact, EPA undertook a study of these potentially affected plants to determine whether the closure estimate was valid, and whether there were alternative means available to these plants to achieve the proposed limitations. Revised cost estimates for the 10 potential plant closures revealed that 2 of the candidates are now in the nonclosure category. In addition, one plant has closed and 2 others have met the proposed regulation and are therefore no longer affected.

The projected cost of removing the less than 16 lbs/day of PCP is over \$4 million dollars for total investment and approximately 1 million dollars for annualized costs. The EPA has determined that, for the reasons stated above, these costs are too high.

Because the Agency has decided not to promulgate the proposed standard for zero discharge of PCP, or any new pretreatment standard for zero discharge of PCP, or any new pretreatment requirements for this sector, there are no increased costs or economic impacts associated with PSES.

**New Sources—NSPS and PSNS.** The proposed new source standards may require capital investment of \$161,030-\$209,200 and \$223,810-\$327,500 which represent from 4.9-6.3 percent or 3.4-5.0 percent of the estimated capital investment for new 2 and 5 cylinder plants, respectively. The operating costs resulting from the regulation may range from \$35,150 to \$39,480 for 2 cylinder plants and \$46,260 to \$57,280 for 5 cylinder plants. These costs are not expected to hinder the construction of new plants.

**RCRA Costs.** EPA has not conducted a formal analysis of the effect that the hazardous waste regulations promulgated under the authority of the Resource Conservation and Recovery Act (RCRA) will have on the costs of complying with the wood preserving regulations. However, as explained in more detail in Comment 3, the Agency has estimated that for most facilities subject to these regulations the RCRA costs will be either slight or nonexistent. EPA was unable to conduct such an analysis because RCRA standards governing the treatment, storage and disposal of hazardous wastes were not promulgated in time to conduct such a study.

#### 5. Nonwater Quality and Effluent Reduction Benefits.

Sections 304(b) and 306 of the Clean Water Act require EPA to consider the

nonwater quality environmental impacts and energy requirements of effluent guidelines and standards. Consideration of these factors is necessary because the elimination or reduction of one form of pollution may aggravate other environmental problems. In compliance with these provisions, EPA has considered the effect of these regulations on air pollution, solid waste generation and energy consumption. This regulation was reviewed and approved by EPA personnel responsible for nonwater quality programs. While it is difficult to balance pollution problems against each other and against energy use, EPA believes this regulation best serves often competing national goals.

*a. Air Pollution.* The preamble to the proposal discussed preliminary information in the Agency's possession which indicated that there may be some transfer of PCP from the water medium to the air medium when evaporative technology used to achieve zero discharge is applied to wood preserving wastewaters containing PCP. The preamble requested information regarding the transfer of pollutants from water to air caused by the application of evaporative technologies. Although neither hard data nor information confirming transfer was submitted in response to this solicitation, the Agency's Office of Research and Development has initiated studies to provide additional information regarding this question. This information is not available for inclusion in this rulemaking.

Since the Agency has elected not to promulgate the proposed PSES requiring zero discharge of PCP and since the previously promulgated PSES (which is being retained in these regulations) does not require the application of evaporative technology, any potential for any increase in air pollution attributable to the PSES is eliminated. NSPS and PSNS, which require zero discharge of all process wastewater, may, however, result in the application of evaporative technology. Upon the completion of the studies on whether evaporation of wood preserving wastewater results in transfer of toxic pollutants from water to the air, the Agency will further consider this matter.

*b. Solid Wastes.* Solid wastes generated by the wood preserving segment of the timber industry contain toxic pollutants as well as conventional and nonconventional pollutants. Pentachlorophenol (PCP) and polynuclear aromatic compounds (PNAs) are found in solid wastes generated by plants that use PCP as a preservative or treat wood with

creosote. Small amounts of toxic metals are also found in solid wastes generated by plants treating with either or both preservatives. The RCRA hazardous waste regulations promulgated on May 19, 1980 identify wood preserving bottom sludges as hazardous wastes subject to these regulations.

Information presented in the preamble to the proposed regulations indicated that the volume of sludge generated did not vary appreciably with the wastewater treatment practices employed by the plants. About 48 plants provided information regarding sludge volume. This information indicated that plants meeting BPT level of control generated about 0.014 cubic yard of sludge per thousand cubic feet of wood treated; plants meeting a no discharge of process wastewater level of control generated an estimated 0.016 cubic yard of sludge per thousand cubic feet of wood treated, and plants meeting the previously promulgated PSES are generating about 0.018 cubic yard of sludge per 1,000 cubic feet of wood treated. Inasmuch as safe disposal of this sludge will be effectuated under RCRA, the Agency anticipates no adverse environmental impacts resulting from the generation of this sludge.

*c. Energy Requirements.* The Agency originally estimated that the twenty-seven plants (now twenty-four) that would have been affected by a no discharge of PCP standard would be required to spend approximately \$59,000 per year (1,180 megawatts) for energy in order to achieve the no discharge status. Because the no discharge of pentachlorophenol (PCP) standard is not being promulgated, these costs will not be incurred.

Energy requirements for wastewater pollution control for new sources in the wood preserving segment are estimated to be \$3,200 per year (64 megawatts or 105 barrels of oil) for a steam plant producing 6,000 cubic feet per day; \$3,770 per year (75 megawatts or 124 barrels of oil) for a steaming plant producing 15,000 cubic feet per day; \$8,160 per year (163 megawatts or 269 barrels of oil) for a Boulton plant producing 3,200 cubic feet per day; and \$16,130 per year (323 megawatts or 531 barrels of oil) for a Boulton Plant producing 8,000 cubic feet per day. The average wood preserving plant has a total operating energy requirement of 15,600 megawatts, or 26,000 barrels of oil per year.

#### *B. Wet Process Hardboard/Insulation Board Segment*

##### *1. Industry Profile.*

Wet process hardboard and insulation board are sheet materials made from

wood reduced to lignocellulosic fibers by mechanical or thermomechanical means, i.e., by grinding wood chips under atmospheric pressure or under steam induced pressure, which are then reformed into a solid board. Hardboard is compressed fiberboard, with a density greater than 31 pounds per cubic foot, which is made with either one side (S1S) or both sides smooth (S2S). Insulation board is a noncompressed fiberboard, with a density between 9.5 and 31 pounds per cubic foot. Some hardboard products such as paneling and exterior siding are used in the construction industry while other hardboard products are used in the automotive, furniture and small appliance industries. Insulation board products, which included such things as ceiling tile, sheathing, and insulating board, are used primarily in the construction industry.

There are twenty six plants in the wet process hardboard/insulation board segment. Ten produce insulation board only; of these, 2 are direct dischargers, 5 are indirect, and 3 are nondischargers. Eleven produce hardboard only; of these, 9 are direct dischargers, 1 is indirect, and 1 is a nondischarger. Five plants produce both hardboard and insulation board; of these, 3 are direct dischargers, 1 is indirect and 1 is a nondischarger. Note: Since proposal of these regulations one of the plants which produced insulation board only, and which was a nondischarger, has ceased operation.

Water is essential to wet process hardboard and insulation board manufacturing, serving as the fiber transporting medium during the production process. After the wood chips are reduced to fiber and fiber bundles, water carries the wood to a forming machine, drains through a wire mesh, and either returns to the process water system or is discharged as wastewater.

Pollutants present in process wastewater are mainly water soluble wood constituents high in BOD and TSS, the result of the leaching of wood constituents into the process water. Additives used to improve product quality also contribute to the waste load. These may include wax emulsion, paraffin, starch, polyelectrolytes, aluminum sulfate, vegetable oils, ferric sulfate, and thermoplastic and thermosetting resins. Although the wastewater in the two subcategories is similar, there are more wood constituents in hardboard wastewater because hardboard manufacture requires that the wood chips be reduced to finer fibers. Also, more additives are used in hardboard manufacture.



Data obtained from the sampling and analysis program conducted during the study show that the only toxic pollutants present in raw or treated wastewaters from this segment are very low concentrations of heavy metals such as copper and zinc, and the organics benzene, toluene, and phenol. There is no control technology with the exception of a no discharge technology currently available to reduce further the low concentrations of these pollutants and none of these pollutants are present at levels high enough to interfere with the operation of a POTW, pass through a POTW inadequately treated or limit sludge disposal alternatives.

### 2. Previously Applicable Subcategorization Scheme and Effluent Limitations Guidelines and Standards.

The previously promulgated or proposed effluent guidelines limitations and standards for the hardboard/insulation board segment divided this segment into three subcategories: (1) Wet Process Hardboard (which included both S1S and S2S plants), (2) Insulation Board-Mechanical Refining and (3) Insulation Board-Thermomechanical Refining. The wet process hardboard subcategory was segregated from the insulation board subcategories because wet process hardboard wastewater has a higher raw waste load. Insulation board plants were divided into two subcategories because of the differences in wastewater characteristics between the mechanical and thermomechanical refining processes.

BPT, BAT, NSPS and PSNS for the wet process hardboard subcategory were promulgated April 18, 1974 (39 FR 13942). BPT, BAT and NSPS established numerical limits on BOD, TSS, and pH. PSNS required compliance with general pretreatment standards. PSES for this subcategory was promulgated December 9, 1976 (41 FR 53930) and required compliance with general pretreatment standards. BPT, BAT and NSPS for the wet process hardboard subcategory were withdrawn by the Agency on September 27, 1977, because the Agency was presented with information which indicated the need to revise the subcategorization scheme.

BPT, BAT, NSPS and PSNS for the insulation board subcategory were proposed August 26, 1974 (39 FR 30892) but were never promulgated. BPT, BAT and NSPS proposed numerical limits on BOD, TSS and pH. PSNS required compliance with general pretreatment standards. The PSES for the subcategory was promulgated on December 9, 1976, and required compliance with general pretreatment standards.

### 3. Summary of the Proposed Regulation and Changes from the Proposal.

*a. Subcategorization.* In the proposed regulation, the Agency changed the subcategorization scheme for the hardboard and insulation board subcategories. With respect to the mechanical and thermomechanical insulation board subcategories, the Agency determined that although the wasteloads from the two pulp preparation processes are slightly different, there is only one mechanical refining plant which is a direct discharger, and this plant has a raw waste load equivalent to the average thermomechanical refining plant. Therefore, the Agency decided for practical reasons to combine these two subcategories into one "Insulation Board" subcategory. With respect to the wet process hardboard subcategory, the Agency found that plants which produce S2S hardboard exhibit significantly greater raw wasteloads than do S1S hardboard plants because S2S hardboard requires finer fibers, which requires more cooking and refining of the wood chips. For this reason, the proposed regulations divided the wet process hardboard subcategory into two parts, S1S Hardboard and S2S Hardboard.

The Agency received no comments objecting to the proposed subcategorization changes. Consequently, the proposed changes in the subcategorization scheme are being adopted in the final regulations.

*b. BPT and BCT.* Because BPT had been withdrawn in the hardboard subcategory and never promulgated in the insulation board subcategory, it was necessary to designate a BPT treatment level in this round of rulemaking, as a minimum level of control applicable to all direct dischargers and as a baseline against which to compare the costs of achieving the BCT level of control.

For the smooth-one-side (S1S) part of the wet process hardboard subcategory, the Agency proposed a BPT based on the performance of a plant producing only S1S hardboard which demonstrated consistently good removal of the conventional pollutants using a biological treatment system. For the S2S subpart, EPA proposed a limit which could be achieved if the treatment used at the S1S BPT plant were applied to the higher raw waste load at the S2S plant. EPA elected to use this approach because the one direct discharging plant producing S2S hardboard only demonstrated BOD and TSS removal well above that usually associated with BPT. This plant's performance was deemed to be representative of BCT,

rather than BPT. Therefore, in the absence of an appropriate model plant for BPT, the Agency chose to extrapolate from the performance of the S1S BPT candidate plant. This approach seemed the most rational, especially in view of the fact that all but one of seven plants producing S2S hardboard currently achieve the BPT limitation so derived.

In setting BCT limits for the S1S and S2S portions of the wet process hardboard subcategory, EPA identified only one treatment and control option capable of providing pollutant removal beyond that required by BPT limitations. This option was to upgrade the existing BPT biological treatment and control technology by providing additional detention time and aeration capacity. Achievement of this control option was demonstrated by the performance of one plant in both the S1S and S2S portions of the wet process hardboard subcategory. Consequently, EPA based its proposed BCT limitations on the performance of these two plants. These proposed BCT limitations passed the BCT "cost reasonableness" test.

For the insulation board subcategory, the Agency proposed BPT limits based on the performance of one of the two direct discharging plants. Although both of these plants performed very well using a combination of biological treatment and recycle of treated effluent as process water, the performance of the thermomechanical plant was chosen as the basis for BPT because all the plants affected by these regulations are thermomechanical plants.

In setting BCT for the insulation board subcategory, the Agency determined that the treatment system upon which the proposed BPT limitations were based was an exemplary system which needed no further upgrading. Consequently, the Agency proposed BCT limitations which equaled the proposed BPT limitations.

The Agency received a number of comments concerning its proposed BPT and BCT limitations. A number of commenters criticized EPA's statistical methodology and argued that EPA had failed to adequately take seasonal variation into account. Others argued that there were problems with the data base and that the data base was inadequate.

EPA has given careful consideration to these comments and has, as a result thereof, altered the proposed BPT and BCT limitations for both the wet process hardboard and insulation board subcategories. In satisfaction of many of the commenters concerns, it has collected a year's worth or more of additional data on treatment system

performance, and revised its statistical methodology in order to account for both seasonality and autocorrelation of the data. It has also reanalyzed all the data using the improved methodology, with the result that daily maximums for the S1S hardboard and insulation board subcategories are approximately the same, daily maximums for the S2S hardboard portion are more restrictive and thirty day limits for both subcategories are more lenient. A detailed discussion of the revised calculations and methodology can be found in the Development Document, Appendix G and at comment 2.

*c. BAT.* EPA did not propose BAT limits for either the hardboard or insulation board subcategories. This is because review of the information available to the Agency indicated that few toxic pollutants are found in the wastewaters from hardboard and insulation board plants and those that are present occur in such low concentrations that it is not feasible to reduce them by any of the technologies known to EPA. The only technique available to existing plants to reduce these discharge levels would be no discharge of process wastewater pollutants. However, this option is not feasible for these plants for both technical and economical reasons. Most existing plants do not have sufficient land available for land disposal of treated wastewaters. Recycling of treated wastewater by existing plants would probably require redesign of process water and wastewater flow systems. Such redesign would also require the replacement of some existing equipment, and the installation of considerable amounts of new equipment.

The Agency received no objections to its decision not to promulgate a BAT limit for the insulation board and wet process hardboard subcategories. Consequently, no BAT is being promulgated.

*d. NSPS.* The Agency proposed new source performance standards for both the hardboard and insulation board subcategories which required no discharge of process wastewater pollutants. EPA believed this requirement appropriate primarily because five of the existing twenty-six plants in the two subcategories were achieving no discharge of process wastewater. It therefore considered new sources, which have more flexibility to plan as necessary to achieve no discharge, to be capable of meeting the standard. This proposed no discharge limitation can be achieved by a number of methods, including recycle and reuse

of treated wastewater, spray irrigation of excess process wastewater and in-plant controls designed to minimize the wastewater generated. In the absence of significant adverse comment, this standard is being promulgated as proposed.

*e. PSNS and PSES.* The Agency proposed pretreatment standards for new and existing sources in the hardboard/insulation board segment that do not establish numerical limitations on the introduction of process wastewater to a POTW but rather simply required compliance with the general pretreatment standards (40 CFR Part 403). This is because the process wastewaters generated by the wet process hardboard/insulation board segment of the industry do not contain toxic pollutants at levels sufficient to warrant concern about pass through, sludge contamination or POTW interference and because the conventional pollutants present in these wastewaters, primarily BOD and TSS, are treatable by a POTW. Since there were no comments criticizing this proposal, the promulgated rule makes indirect dischargers subject only to the general pretreatment standards.

#### 4. Cost and Economic Impact.

A regulatory analysis was conducted for the hardboard/insulation board segment of the timber industry. The results of that analysis are contained in *Economic Impact Analysis of Alternative Pollution Control Technologies, Wet Process Hardboard and Insulation Board Subcategories of the Timber Products Industry*, EPA 440/2-80-089, December 1980. The results are summarized here.

*Direct Discharging Plants*—BPT, BCT, BAT, NSPS. Of the 26 plants that produce hardboard or insulation board, 14 are direct dischargers.

#### *Insulation Board.*

No BPT regulations have been promulgated previously for the insulation board industry. The promulgated BPT and BCT limits for BOD, TSS and pH are the same. These limits will not result in any increase in costs or economic impacts for insulation board plants because all of the plants currently are meeting the promulgated limits. The Agency is not promulgating BAT regulations for insulation board plants.

Since demand in the insulation board industry is expected to decrease by 5 percent yearly, no new capacity will likely be built. Therefore, no economic impact is expected to result from the promulgated NSPS. In any event, the cost of complying with NSPS is not expected to hinder the addition of new capacity.

*Wet Process Hardboard.* Three wet process hardboard plants are required to upgrade their wastewater treatment systems to achieve the BPT level of control. Increased detention and aeration time are required for BPT. For two of the plants, total capital investment costs could total \$2,290,000 with annualized costs of \$758,500. Price changes required for the remaining plants to recover compliance costs may range from 1–14 percent for BPT. The third plant, employing 250–400 people, may close as a result of BPT regulations.

Seven wet process hardboard plants will be required to upgrade their wastewater treatment systems to meet the BCT level of control. The same plant that may close under the BPT regulation may also shut down under the BCT regulation. For six of the plants, total capital investments required to meet BCT could total \$10,619,000 above the cost of compliance with BPT, with associated annualized costs of \$3,270,300 greater than for BPT.

For five of the six plants, negligible to 14 percent price increases would be required to recover compliance costs due to BCT. The last plant would require a 23 percent price increase to fully recover compliance costs. However, the Agency does not expect price increases of twenty-three percent for this plant because it will likely not attain complete cost pass through. After careful review of the cost pass through analysis for this plant, the Agency concluded that a portion of the costs would probably be passed on to the consumer in the form of higher prices and the remainder would be absorbed from the plants' profits. Plant viability would still be maintained after pollution control costs have been covered. The amount of costs absorbed would not bring the firm below the average profit level for the industry.

The Agency expects decreased profitability in this sector if price increases do not occur, but plants should still be able to cover the cash costs and depreciation. Compliance costs can most likely be recovered by increased prices because affected plants represent 44 percent of capacity and 45 percent of hardboard production (1976 data). Impacts on communities are not likely, except in the case of the closure candidate, where there may be secondary effects.

The Agency is not promulgating BAT regulations for the hardboard industry. Thus, there will be no economic impacts associated with BAT.

Model new plant costs estimates for a hardboard plant are \$170,648 per MMSF (1/8") for capital investment and \$82,594 per MMSF (1/8") for operating costs. Compliance costs for model plants range

from \$7,792 to \$16,933 per MMSF ( $\frac{1}{8}$ "') for total investment costs and \$1,398 to \$2,722 per MMSF ( $\frac{1}{8}$ "') for operating costs. The compliance costs associated with NSPS should not hinder the construction of new plants.

The Agency does not expect any new sources in this segment of the industry because market concentration causes significant barriers to entry for new companies. Incremental expansion or conversion from insulation board to hardboard capacity will be cheaper for existing firms than building new plants because capacity can be added in smaller increments.

In conclusion, the Agency does not expect any new firms to enter the industry and does not expect that new source requirements (no discharge of process wastewater pollutants) would affect the rate of new hardboard construction by existing companies.

**Indirect Discharging Plants—PSES, PSNS.** Because wet process hardboard producing plants and insulation board producing plants discharge primarily conventional pollutants, indirect dischargers are subject only to the general pretreatment requirements specified in 40 CFR Part 403. Therefore, no new treatment is required to meet PSES and PSNS for this sector, and no economic impacts will result.

#### 5. Nonwater Quality Effects and Effluent Reduction Benefits.

As noted above, sections 304(b) and 306 of the Clean Water Act require EPA to consider the nonwater quality environmental impacts and energy requirements of effluent guidelines and standards. In compliance with these provisions, EPA has considered the effect of these regulations on air pollution, solid waste generation and energy consumption and has obtained approval for the regulations from EPA personnel responsible for non-water quality programs. While it is difficult to balance pollution problems against each other and against energy use, EPA believes this regulation best serves often competing national goals.

**a. Air Pollution/Solid Waste.** The Agency has identified no adverse effects on air quality which might result from the wastewater treatment required for this segment. These wastewater treatment practices include biological treatment prior to discharge to the navigable waters, disposal on land, or recycle to the board plant.

Similarly, no adverse solid waste impacts are anticipated. As discussed above, toxic pollutants are not present in appreciable amounts in this segment. The promulgated limitations will require a higher degree of biological treatment for as many as seven of the fourteen

direct discharging plants in this segment which will in turn increase the generation of biological solids. The characteristics of this sludge are, however, not toxic or believed to be hazardous under the RCRA hazardous waste regulations. Consequently, this sludge will prove amenable to disposal either by recycle to the plant or disposal on land without special handling and disposal requirements.

Presented below are estimates of the total volume of sludge generated currently by the industry and under the BPT limitations and BCT limitations.

Current, 500,000 cubic yards per year.  
BPT, 534,000 cubic yards per year.  
BCT, 583,000 cubic yards per year.

**Note.**—These sludge volumes are 1.14 cubic yards per wet ton (15% solids).

**b. Energy Requirements.** Plants in the S1S portion of the wet process hardboard subcategory will incur energy costs of approximately \$129,000 per year (2,580 megawatts or 4,250 barrels of oil) to achieve the BPT limitations. The one plant producing S2S hardboard will incur energy costs of about \$1,400,000 per year (28,000 megawatts or 46,000 barrels of oil) to achieve BPT level of control. Five S1S producing plants will incur about \$303,000 per year (6,060 megawatts or 10,000 barrels of oil) in energy costs to achieve BCT. Two S2S producing plants will incur about \$1,780,000 per year (35,600 megawatts or 58,500 barrels of oil) in energy costs to achieve BCT. The average hardboard/insulation board plant has a total energy requirement of 1,000,000 megawatts, or 1,650,000 barrels of oil per year. The energy requirements associated with BPT limitations are estimated to be about 0.5 percent of a plant's total energy requirements. BCT energy requirements are 0.7 percent. No other plants are expected to incur additional energy costs.

#### C. Hydraulic Barking

##### 1. Profile.

There are approximately 14 plants in the hydraulic barking portion of the barking subcategory. The most recent installation of a hydraulic barking system in the United States occurred in 1969. Apparently energy and environmental considerations make hydraulic barking less attractive to potential customers than mechanical barking, which generates a small amount of easily disposed of wastewater. In addition, the capital cost of installing a hydraulic barking system is estimated to be about one and one-half times the cost of installing a mechanical barking system with the same throughput capacity and capital

investment and annual operating costs for hydraulic barking wastewater treatment are significantly higher than the costs of treatment of mechanical barking wastewaters.

##### 2. Previously Applicable Effluent Limitations and Standards.

In the previous round of rulemaking (1973-74), EPA established BPT, BAT, NSPS, PSES and PSNS effluent limitations and standards for the hydraulic barking portion of the barking subcategory. The most stringent of these was the BAT limitation, which prohibited the discharge of all process wastewater pollutants. The BAT limitation was based on the performance of a hydraulic barking plant located in northern California. This plant installed a hydraulic barker in 1969 which was designed to operate by recycling 80+ percent of the process water and disposing of the excess water by spray-irrigation. The Agency concluded that after a few years experience with this wastewater treatment and recycle system, a completely closed (no discharge) status could be achieved by all plants. Somewhat less stringent than the BAT limitation were the BPT and NSPS limitations, which established numerical limits on BOD, TSS and pH, and the PSES and PSNS standards, which required compliance with general pretreatment standards.

##### 3. Summary of the Proposed Regulation and Changes from the Proposal.

As part of its development of the current guidelines and standards, the Agency surveyed the existing hydraulic barking operations. What it found tended to call into question the appropriateness of a no discharge BAT limitation. First, although most hydraulic barking installations practice some degree of barking water recycle, the plant identified in 1974 as recycling at 80+ percent is still at that level, apparently unable to increase the amount of recycle. Second, analysis of a hydraulic barking system's wastewater revealed the presence of only one toxic pollutant, phenol, at levels above the analytical limits of detection. This analysis suggested that an earlier 1976 analysis, which had revealed the presence of a number of toxic pollutants in hydraulic barking wastewater, may have reflected pollutants from other timber processing operations. On the basis of these discoveries and in recognition of hydraulic barking's limited growth potential, EPA proposed completely withdrawing the existing no discharge BAT limitation. In addition, because it had not collected sufficient information to enable it to calculate the

BCT "cost reasonableness" test, EPA proposed not to establish BCT limitations for the hydraulic barking subcategory.

EPA received no comments concerning its proposed deletion of the existing BAT limitation and decision not to develop BCT limitations. Consequently, it is adopting its proposal in the final regulation.

#### VII. Pollutants Not Regulated and Subcategories Not Subject to Revised Effluent Limitations Guidelines and Standards

The Settlement Agreement in *NRDC v. Costle*, *supra*, authorized the exclusion from regulation, in certain instances, of toxic pollutants and industry subcategories. These provisions have been rewritten in a Modified Settlement Agreement which was approved by the District Court for the District of Columbia on March 9, 1979, 12 ERC 1833.

##### 1. Pollutants Not Regulated.

In accordance with the terms of this Settlement Agreement, the Agency set out in the preamble to the proposal certain proposed exclusions of toxic pollutants from regulation. Inasmuch as no comments were received concerning these proposed exclusions, the Agency is going forward with these exclusions. These exclusions are summarized below.

Paragraph 8(a)(iii) of the Modified Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants not detectable by section 304(h) analytical methods or other state-of-the-art methods. Appendix B lists the toxic pollutants not detected and therefore excluded from regulation.

Paragraph 8(a)(iii) of the Modified Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants detected in the effluent from a small number of sources and uniquely related to those sources. Appendix C lists the toxic pollutants which were detected in the effluents of only one or two plants, which are uniquely related to these sources, and which, therefore, are excluded from regulation.

Paragraph 8(a)(iii) of the Modified Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants which are detected only in trace amounts and which are not likely to cause toxic effects. Appendix D lists the toxic pollutants detected at or below the nominal limit of analytical detection and quantification and which therefore are excluded from regulation.

##### 2. Subcategories Not Subject to Revised Effluent Limitations Guidelines and Standards.

After initially reviewing the established effluent guidelines and standards for the timber industry to determine if revisions were necessary, the Agency concluded that most of the existing subcategories did not require the development of new effluent limitations and standards. Accordingly, pursuant to the terms of paragraph 8 of the Modified Settlement Agreement, the Agency excluded most of these subcategories from further regulation development. No comments were received concerning the Agency's action in this regard.

A brief summary of the Agency's reasons for retaining the old limitations and standards for these subcategories is presented below:

##### a. Veneer, Plywood, Dry Process Hardboard, Log Washing, Sawmills and Planing Mills, Finishing, Particleboard Manufacturing.

The existing BAT and NSPS regulations for these subcategories (and in many cases the existing BPT regulations) require no discharge of process wastewater pollutants. The existing PSES and PSNS regulations require compliance with general pretreatment standards.

The Agency has retained the existing BAT and NSPS regulations for these subcategories because of the existing zero discharge requirement and because of the demonstrated presence of toxic pollutants in these subcategories' wastewaters. The Agency has decided not to develop more stringent pretreatment standards for these subcategories because either the amount of toxic pollutants discharged is low or the number of plants discharging to a POW is small.

##### b. Wet Storage.

The existing BPT, BAT and NSPS regulations for wet storage facilities require that no debris be discharged and that the pH of wastewaters be kept within the range of 6.0 to 9.0. The existing PSES and PSNS regulations require compliance with general pretreatment standards.

The amount of wastewater discharged by wet storage facilities and the amenability of this discharge to treatment is dependent largely on the amount of precipitation. During dry periods, the industry can achieve no discharge by containing or recycling the effluent. During wet periods, the industry could achieve a level of control more stringent than the existing limitations only by utilizing large containment basins. The size of such basins would vary from plant to plant

and the concentrations of pollutants contained in the basin wastewater would be so low as to make treatment difficult.

In view of the dependence of treatment effectiveness on the variable factor of precipitation and the difficulties of designing a treatment system that could handle surges in wastewater, the Agency has concluded that it is not technically feasible to require a level of control beyond that provided for by the existing BAT and NSPS regulations.

##### c. Wood Furniture and Fixture Production Without Water Wash Spray Booths or Laundry Facilities.

The existing BPT, BAT and NSPS regulations for wood furniture manufacturing facilities without water wash spray booths or laundry facilities require no discharge of process wastewater pollutants. The existing PSES and PSNS require compliance with general pretreatment standards.

In its review of the various timber industry subcategories to determine the need for revised effluent limitations guidelines and standards, the Agency concluded that wood furniture manufacturing did not fall within the purview of the NRDC Consent Decree. Therefore, no consideration was given to developing revised effluent limitations guidelines or standards for either of the wood furniture manufacturing subcategories, except as noted below.

#### VIII. Technical Amendment

##### 1. Wood Furniture and Fixture Production with Water Wash Spray Booths or Laundry Facilities.

The BAT regulation for this subcategory, promulgated in 1975, required no discharge of process wastewater pollutants because five of the twenty-four direct discharging facilities investigated were achieving no discharge and it was felt that by the arrival of the 1984 (then 1983) statutory deadline for BAT, all direct dischargers could achieve no discharge. The NSPS regulation, however, allowed the discharge of process wastewater pollutants because no discharge technology was not considered to be completely proven at the time.

While it was appropriate for NSPS to be less stringent than BAT in 1975, it is clearly inappropriate and anomalous for NSPS to be less stringent than BAT as the BAT statutory deadline approaches. Since no comment has been received protesting the severity of the BAT no discharge limitation, EPA believes and assumes that BAT no discharge technology is presently demonstrated. Consequently, although the Agency

through oversight neglected in the proposal to adjust the NSPS for the above wood furniture subcategory to no discharge, it has rectified this oversight in the final regulation. This modification of the NSPS for the above wood furniture subcategory is considered to be in the nature of a technical or conforming amendment.

#### IX. Best Management Practices

Section 304(e) of the Clean Water Act gives the Administrator authority to prescribe "best management practices" (BMPs). EPA intends to develop BMPs which are (1) applicable to all industrial sites; (2) applicable to a designated industrial category; and (3) offer guidance to permit authorities in establishing BMPs required by unique circumstances for a given plant.

This rulemaking does not address BMPs applicable to the wood preserving, hardboard, insulation board, or barking segments, or other segments of the timber products industry. The technical study supporting the regulations presented here was already underway before the passage of the Clean Water Act Amendments of 1977, the law that gives the Agency responsibility for developing BMPs. Rather than delay the publication of the regulations included in this rulemaking, the BMP publication will be postponed. The Agency plans to develop BMP support information in the near future. Areas of interest include: minimizing contamination of precipitation, controlling runoff from raw material storage areas, control of spillage or leaks and sludge disposal.

#### X. Upset and Bypass Provisions

A recurring issue of concern has been whether industry guidelines should include provisions authorizing noncompliance with effluent limitations during periods of "upset" or "bypass." An upset, sometimes called an "excursion," is unintentional noncompliance occurring for reasons beyond the reasonable control of the permittee. It has been argued that an upset provision in EPA's effluent limitations guidelines is necessary because such upsets will inevitably occur because of limitations in even properly operated control equipment. Because technology based limitations are to require only what technology can achieve, it is claimed that liability for such situations is improper. When confronted with this issue, courts have divided on the question whether an explicit upset or excursion exemption is necessary, or whether upset or excursion incidents may be handled through EPA's exercise of enforcement

discretion. Compare *Marathon Oil Co. v. EPA*, 564 F. 2d 1253 (9th Cir. 1977) with *Weyerhaeuser v. Costle*, supra and *Corn Refiners Association, et al. v. Costle*, No. 78-1069 (8th Cir., April 2, 1979). See also *American Petroleum Institute v. EPA*, 540 F. 2d 1023 (10th Cir. 1976); *CPC International, Inc. v. Train*, 540 F. 2d 1320 (8th Cir. 1976); *FMC Corp. v. Train* 539 F. 2d 973 (4th Cir. 1976).

While an upset is an unintentional episode during which effluent limits are exceeded, a bypass is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. Bypass provisions have, in the past, been included in NPDES permits.

EPA has determined that both upset and bypass provisions should be included in NPDES permits and has promulgated Consolidated Permit regulations which include upset and bypass permit provisions (See 40 CFR 122.60, 45 FR 33290 (May 19, 1980)). The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology based effluent limitations. The bypass provision authorizes bypassing to prevent loss of life, personal injury or severe property damage. Consequently, although permittees in the timber industry will be entitled to upset and bypass provisions in NPDES permits, these proposed regulations do not address these issues.

#### XI. Variances and Modifications

Upon the promulgation of final regulations, the effluent limitations for the appropriate subcategory must be applied in all federal and state NPDES permits thereafter issued to timber industry direct dischargers. In addition, on promulgation, the pretreatment limitations are directly applicable to indirect dischargers.

For the BPT and BCT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. See *E. I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112 (1977); *Weyerhaeuser Co. v. Costle*, supra. This variance recognizes factors concerning a particular discharger which are fundamentally different from the factors considered in this rulemaking. Although this variance clause was set forth in EPA's 1973-1976 industry regulations, it now will be included in the NPDES regulations and will not be included in the timber or other industry regulations. See the NPDES regulations at 40 CFR 125.30, 44 FR 32854 (June 7, 1979) and 45 FR 33290 (May 19, 1980) amending 125.30(b) for the text and explanation of the "fundamentally different factors" variance.

The BAT limitations in these regulations also are subject to EPA's "fundamentally different factors" variance. BAT limitations for nonconventional pollutants are subject to modifications under sections 301(c) and 301(g) of the Act. These statutory modifications do not apply to toxic or conventional pollutants. According to section 301(j)(1)(B), applications for these modifications must be filed within 270 days after promulgation of final effluent limitations guidelines. See 43 FR 40895 (Sept. 13, 1978). Pretreatment standards for existing sources are subject to the "fundamentally different factors" variance and credits for pollutants removed by POTW (See 40 CFR 403.7, 403.13).

Pretreatment standards for new sources are subject only to the credits provision in 40 CFR § 403.7. New source performance standards are not subject to EPA's "fundamentally different factors" variance or any statutory or regulatory modifications. See *du Pont v. Train*, supra.

#### XII. Relationship to NPDES Permits

The BPT, BCT and NSPS limitations in these regulations will be applied to individual timber products processing plants through NPDES permits issued by EPA or approved state agencies, under section 402 of the Act. As discussed earlier in the preceding section of this preamble, these limitations are required to be applied in all federal and state NPDES permits except to the extent that variances and modifications are expressly authorized. Other aspects of the interaction between these limitations and NPDES permits are discussed below.

One issue which warrants consideration is the effect of these regulations on the powers of NPDES permit issuing authorities. The promulgation of these regulations does not restrict the power of any permitting authority to act in any manner consistent with law and these or any other EPA regulations, guidelines or policy. For example, the fact that these regulations do not control a particular pollutant does not preclude the permit issuer from limiting such pollutant on a case-by-case basis when necessary to carry out the purposes of the Act. In addition, to the extent that State water quality standards or other provisions of State or Federal law require limitation of pollutants not covered by these regulations (or require more stringent limitations on covered pollutants), such limitations must be applied by the permit-issuing authority.

A second issue which warrants discussion is monitoring. The Agency

intends to establish a regulation which requires permittees to conduct additional monitoring when they violate their permit limitations. The provisions of such monitoring requirements will be specified for each permittee and may include analysis for some or all of the toxic pollutants or the use of biomonitoring techniques. The additional monitoring will be designed to determine the cause of the violation, necessary corrective measures, and the identity and quantity of toxic pollutants not specifically limited in the permit which are discharged during the violation. Each violation will be evaluated on a case by case basis by the permitting authority to determine whether or not the additional monitoring contained in the permit is necessary. In addition, the Agency intends to amend either these regulations or the General Pretreatment Regulations at 40 CFR Part 403 to require monitoring by indirect discharging plants.

A third topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which have been considered in developing these regulations. The Agency wishes to emphasize that, although the Clean Water Act is a strict liability statute, the initiation of enforcement proceedings by EPA is discretionary. EPA has exercised and intends to exercise that discretion in a manner which recognizes and promotes good faith compliance efforts and conserves enforcement resources for those who fail to make good faith efforts to comply with the Act.

### **XIII. Small Business Administration (SBA) Financial Assistance**

There are two SBA programs that can be important sources of financing for the Timber Products Processing Industry Point Source Category. They are the SBA's Economic Injury Loan Program and the Pollution Control Financing Bond Guarantees.

Section 8 of the FWPCA amended section 7 of the Small Business Act, 5 U.S.C. 636, to authorize the SBA through its Economic Injury Loan Program to make loans to assist small business concerns in effecting additions to or alterations in equipment, facilities, or methods or operation in order to meet water pollution control requirements under the Federal Water Pollution Control Act if the concern is likely to suffer a substantial economic injury without such assistance. This program is open to small business firms as defined by the Small Business Administration. Loans can be made either directly by SBA or through a bank using an SBA guarantee. The interest on direct loans

depends on the cost of money to the federal government and is currently set at 8¼ percent. Loan repayment periods, depending on the ability of the firm to repay the loan may extend up to thirty years but will not exceed the useful life of the equipment.

Firms in the Timber Products Processing Industry Point Source Category may be eligible for direct or indirect SBA loans. For further details on this Federal loan program write or telephone any of the following individuals at EPA headquarters or in the ten EPA regional offices:

**Headquarters—Ms. Frances Desselle, Office of Analysis and Evaluation (WH-586), Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460, Telephone: (202) 426-7874**

**Region I—Mr. Ted Landry, Enforcement Division, Environmental Protection Agency, J. F. Kennedy Federal Building, Boston, MA 02203, Telephone: (617) 223-5061**

**Region II—Mr. Gerald DeGartano, Enforcement Division, Room 432, Environmental Protection Agency, 26 Federal Plaza, New York, NY 10007, Telephone: (212) 284-4711**

**Region III—Mr. Bob Gunter, Environmental Protection Agency, Curtis Building, 31R20, 6th and Walnut Streets, Philadelphia, PA 19106, Telephone: (215) 597-2564**

**Region IV—Mr. John Hurlbaeus, Grants Administrative Support Section, Environmental Protection Agency, 345 Courtland Street NE., Atlanta, GA 30308, Telephone: (404) 881-4491**

**Region V—Mr. Arnold Leder, Water and Hazardous Material, Enforcement Branch, Environmental Protection Agency, 230 South Dearborn Street, Chicago, IL 60605, Telephone: (312) 353-2114**

**Region VI—Ms. Jan Horn, Enforcement Division, Environmental Protection Agency, 1st International Building, 1201 Elm Street, Dallas, TX 75270, Telephone: (214) 729-2760**

**Region VII—Mr. Paul Walker, Water Division, Environmental Protection Agency, 1735 Baltimore Avenue, Kansas City, MO 64108, Telephone: (816) 374-2725**

**Region VIII—Mr. Gerald Burke, Office of Grants, Water Division, Environmental Protection Agency, 1860 Lincoln Street, Denver, CO 80203, Telephone: (303) 327-4579**

**Region IX—Ms. Linda Powell, Permits Branch, Enforcement Division (E-4), Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105, Telephone: (415) 556-3450**

**Region X—Mr. Danforth Bodien, Enforcement Division, Environmental**

**Protection Agency, 1200 6th Avenue, Seattle, WA 98101, Telephone: (206) 442-1352**

Interested persons may also contact the Assistant Regional Administrators for Financial Assistance in the Small Business Administration Regional offices for more details on federal loan assistance programs. For further information, write or telephone any of the following individuals:

**Region I—Mr. George H. Allen, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 60 Batterymarch, 10th Floor, Boston, MA 02110, Telephone: (617) 223-3891**

**Region II—Mr. John Axiotakis, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 26 Federal Plaza, New York, NY 10007, Telephone: (212) 264-1452**

**Region III—Mr. David Malone, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 231 St. Asaphs Road, West Lobby, Suite 646, Bala Cynwyd, PA 19004, Telephone: (215) 596-5908**

**Region IV—Mr. Merritt Scoggins, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1375 Peachtree Street, N.E., Atlanta, GA 30367, Telephone: (404) 881-2009**

**Region V—Mr. Howard Bondruska, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 219 South Dearborn Street, Chicago, IL 60604, Telephone: (312) 353-4534**

**Region VI—Mr. Till Phillips, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1720 Regal Row, Suite 230, Dallas, TX 75202, Telephone: (214) 767-7873**

**Region VII—Mr. Richard Whitely, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 911 Walnut Street, 23rd Floor, Kansas City, MO 64016, Telephone: (816) 374-3210**

**Region VIII—Mr. James Chuculate, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1405 Curtis Street, Executive Tower Building, 22nd Floor, Denver, CO 80202, Telephone: (303) 837-3686**

**Region IX—Mr. Larry J. Wodarski, Deputy Assistant Regional Administrator for Financial Assistance, Small Business Administration, 450 Golden Gate Avenue, San Francisco, CA 94102, Telephone: (415) 556-7782**

**Region X—Mr. Jack Welles, Regional Administrator, Small Business**

Administration, 710 2nd Avenue, Dexter Horton Bldg, 5th Floor, Seattle, WA 98104, Telephone: (202) 442-1455

In addition to the Economic Injury Loan Program, the Small Business Investment Act, as amended by Pub. L. 94-305, authorizes SBA to guarantee the payments on qualified contracts entered into by eligible small businesses to acquire needed pollution facilities when the financing is provided through tax-exempt revenue or pollution control bonds. This program is open to all eligible small businesses as defined by the Small Business Administration. Bond financing with SBA's guarantee of the payments makes available long term (20-30 years), low interest (7 percent) financing to small businesses. For further details on this program write to the SBA, Pollution Control Financing Division, Office of Special Guarantees, 1815 North Lynn Street, Magazine Bldg., Rosslyn, VA 22209, (703) 235-2900.

Dated: January 7, 1981.

Douglas M. Costle,  
Administrator.

(Secs. 301, 304, 306, 307 and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., as amended by the Clean Water Act of 1977, Pub. L. 95-217) (the "Act"))

#### Appendix A—Summary of Public Participation

Numerous agencies and groups have participated during the development of these effluent guidelines and standards. Following the publication of the proposed rules on October 31, 1979 in the Federal Register, the Agency provided the Development Document supporting the proposed rules to industry, government agencies and the public sector for comments. On February 15, 1980, in Washington, D.C., a public hearing was held on the proposed timber pretreatment standards.

The following organizations responded with comments: American Hardboard Association; Abitibi-Price Corporation; American Wood Preservers Institute; American Paper Institute/National Forest Products Association; Southern Wood Piedmont Company; U.S. Department of Commerce; Champion International; National Council of the Paper Industry for Air and Stream Improvement; Council on Wage and Price Stability; and the New Jersey Department of Environmental Protection.

1. *Comment:* Two participants stated that in setting pretreatment standards for the wood preserving steam and Boulton subcategories, the Agency has failed to produce the statutory required

showing that PCP passes through, interferes with, or is otherwise incompatible with a POTW. These participants argued that the PCP discharged by wood preserving plants is being reduced through biological activity in POTW, and does not pass through inadequately treated or interfere with the operation of a POTW nor accumulate in POTW sludge in sufficient levels to preclude beneficial use. One participant also stated that the Agency cannot have pretreatment standards based on POTW sludge disposal considerations until guidelines for disposal and use of POTW sludge are established. One of the participants presented influent, effluent and sludge data from three POTW which receive PCP contaminated wastewater from wood preserving plants. Also presented were several literature citations which purport to demonstrate the nonmigration of PCP and the biodegradation of PCP in soil, wastewater, and sludge.

*Response:* The Agency has thoroughly reviewed the information presented by these participants along with other relevant data obtained by the Agency since the proposal. The information accumulated to date by the Agency demonstrates that PCP does indeed pass through POTW inadequately treated and that the percentage removal achieved by POTW is often significantly less than the complete removal achieved by direct discharge BAT or NSPS systems. The data show that significant biodegradation of PCP in POTW does not occur at the low levels of PCP commonly found in POTW influent. This conclusion is supported by data presented to the Agency by one of the industry participants. Recent sampling was conducted at a POTW which exhibits higher than normal influent levels of PCP and which receives PCP wastes from a wood preserving plant. Results of this sampling effort confirmed that although measurable amounts of PCP were being removed, pass through of considerable levels of PCP was also occurring. The Agency does not dispute the validity of the literature references regarding biodegradability and nonmigration of PCP but does dispute the applicability of this data to removal of PCP by POTW. None of the biodegradability experiments described in the literature were conducted under conditions closely simulating the conditions existing at most POTW. Also, the detection limits for PCP analysis were often not reported in the literature references or were greater than the detection limits achievable using the GC/MS analysis employed in collecting the sampling data relied on by the

Agency. The literature references, discussed in the document supporting these regulations, thus do not refute the recent physical evidence of PCP pass through. After review of the available information, as well as the comments received on the proposed rules, the Agency concludes that there is sufficient evidence of PCP pass through at POTW to justify a no discharge standard for new and existing sources in the wood preserving segment. The costs associated with eliminating the discharge of PCP from existing indirect discharging plants are, however, too high.

2. *Comment:* Several participants commented on the EPA statistical methodology used to calculate performance-variability factors for the insulation board/wet process hardboard segment model treatment systems. The comments can be summarized as follows: (a) the Agency's data base was criticized as being limited in that it contains too few data points to provide more than a rough estimation of long term averages, (b) the Agency's nonparametric statistical methodology is flawed because it assumes the data consists of independent observations, when in fact the data are time and temperature (seasonally) dependent; (c) the Agency incorrectly relied upon the assumption that the monthly means are normally distributed in their analysis of 30-day variability factors, resulting in the BPT and BCT model plants' failure to achieve the proposed limitations at the 99th percentile confidence level; (d) the use of a "moving annual average" is a more appropriate method of developing a standard level of performance for wet process hardboard biological treatment system; (e) 30-day effluent limitations should be derived by fitting the monthly means to a log normal distribution.

*Response:* As a result of continuing study and review of comments received, the Agency has revised its statistical methodology, resulting in a number of modifications to the variability factors, and hence to the effluent limitations for the insulation board and wet process hardboard subcategories. The objectives of the statistical reevaluation were to: (a) evaluate the effects of autocorrelation ("nonindependence") on the proposed daily and 30-day limitations; (b) evaluate the effects of seasonality and temperature dependence of treated effluent load on the proposed daily and 30-day limitations taking into account the companies' extended data bases, i.e., data provided by the companies covering a time period contiguous to and

later than the original data base used to determine the proposed limitations; (c) develop variability factors and effluent limitations based on statistical techniques which account for both seasonality and autocorrelation of the data, if appropriate. Extended data bases, in most cases representing one year or more of additional treated effluent and production data, were requested from each of the model treatment systems used to determine the proposed effluent limitations for the wet process hardboard and insulation board subcategories. All but one plant provided this requested data. The SIS hardboard BPT model treatment plant did not provide the requested data on the basis that it was unrepresentative of normal treatment system operation because of a 1978 flood which washed out a solids settling lagoon.

Analyses of the extended data bases were then conducted to determine the sensitivity to autocorrelation of the nonparametric statistical method for determining daily variability factors. In deriving the proposed regulations, a nonparametric method of estimating the 99th percentile of the daily treated effluent loadings was used. A nonparametric method does not assume the data fit a specific distribution. This approach was used because goodness-of-fit tests showed that the commonly used normal and log normal distributions did not fit the data well. An autocorrelation analysis confirmed that the daily data are moderately time dependent.

In spite of this observed time dependence, however, an analysis of the effect of dependence on the 99th percentile estimates determined that the nonparametric estimators of the 99th percentile previously used to calculate variability factors are relatively insensitive to autocorrelation of the data. In fact, the previous calculations yielded variability factors which were conservatively high. The effects of seasonality on the daily variability factors are implicit in the nonparametric statistical calculation since they are based on the larger observed treated effluent loads in the two to three year data base. The nonparametric statistical methodology was retained, therefore, for determination of daily variability factors and promulgated effluent limitations. Daily variability factors were recalculated using the extended data bases according to the nonparametric techniques applied originally. The promulgated daily effluent limitations are essentially unchanged, therefore, from the proposed limitation.

The 30-day variability factors used to derive the proposed effluent limitations were calculated using a statistical method known as the Central Limit Theorem.

This theorem assures the approximate normality of the distribution of the monthly means regardless of the form of the distribution of the daily data, assuming that the number of observations comprising the mean is sufficiently large. Sample sizes of 25 to 30 points are usually sufficient to satisfy this assumption, however; as few as 10 to 15 observations may be sufficient, provided the data is not excessively skewed.

The variance of the distribution of monthly measurements, and the proposed limitations were based on the assumption of 30 daily measurements per month. This point was overlooked or misunderstood in the industry comments received which indicated that the model plants were in violation of the standard on the basis of fewer than 10 to 15 data points per month in some instances.

The Agency recognizes, however, that even when the 30-day limitation is adjusted for the actual number of daily measurements comprising the mean, the number of actual monthly values which exceed the proposed limitations is greater than would be expected on the basis of using a 99th percentile estimator. Recognizing that this fact is probably attributable to the seasonality and autocorrelation of the data, a statistical model was developed to account for these effects. The details of this analysis are presented in the Development Document. Revised 30-day variability factors were calculated using the above described model.

A moving average effluent guideline, as suggested by several commenters, was considered by the Agency in its review of the statistical methodology. This approach was rejected, however, because although moving averages do account somewhat for seasonality, they are highly autocorrelated and hence highly dependent. Time series modeling of the data is considered an appropriate statistical technique for accounting for seasonality and autocorrelation in the data. Thus, time series methods were used by the Agency to derive the promulgated regulations for the insulation board/wet process hardboard segment.

The Agency considered the issue of calculating 30-day effluent limitations using a log normal distribution of monthly means. This approach was rejected because the data violate the assumptions necessary to fit a distribution to a set of data, that is, the data are not independent and identically

distributed. The data are not independent because of the proven existence of autocorrelation and seasonality. In addition, the monthly means are not identically distributed because different numbers of observations were used to compute the monthly means.

3. *Comment:* A number of commenters stated that the Agency should assess the impact that RCRA regulations will have on the costs of sludge disposal, and factor these costs into its calculation of the economic impacts of the proposed limitations. One of these commenters suggested that, given the shortage of secure hazardous waste disposal facilities and the untested ability of RCRA to compel safe disposal, imposing more stringent effluent guidelines and standards on the timber industry might, by transferring toxic materials to wastewater treatment sludge, result in a net increase in environmental harm. This participant recommended that EPA take into consideration such solid waste-related environmental effects when promulgating effluent limitations guidelines and standards.

*Response:* The Agency agrees with the participant's recommendation that EPA should take into account solid waste-related environmental impacts when promulgating effluent limitations and standards. Indeed section 304(b) of the Act specifically requires it to do so. The Agency disagrees, however, with the participant's suggestion that the transfer of toxic materials from wastewater to treatment sludge might result in a net increase in environmental harm. The Agency is confident that the RCRA regulations will insure safe disposal of wood preserving generated hazardous waste and concludes, from this, that the environmental benefits of removing toxic materials from the wood preservers' effluent justify any environmental harm associated with the creation of toxic sludge.

The Agency considered conducting a detailed inquiry into the impact of the RCRA regulations on sludge disposal costs. It does not feel that such a study is warranted in this instance, however, because for most of the regulated subcategories, such a study would not, in the Agency's estimation, influence the ultimate shape of these regulations. The Agency's PSES standards for wood preservers do not differ from the standards previously promulgated and will thus impose no RCRA costs that would not be incurred in the absence of this rulemaking effort. In addition, the hardboard/insulation board subcategories do not appear to generate any waste subject to the RCRA



regulations and will thus not incur any additional RCRA costs as a result of these regulations.

Furthermore, such a study, which might delay promulgation of these regulations by several months, does not appear to the Agency to be compatible with the time constraints imposed by the NRDC consent decree. Moreover, until the final RCRA standards governing treatment, storage, and disposal are promulgated, the Agency will not be in a position to fully and adequately gauge the impact of RCRA on sludge disposal costs.

4. *Comment:* Several commenters argued that the Agency's proposed no discharge of PCP pretreatment standard is tantamount to a prohibition on the discharge of all wood preserving process wastewater for several reasons. First, PCP is used to control sapstain on freshly cut wood and therefore is present in a wood preserving plant's raw material and will be present in the plants effluent regardless of whether or not the plant treats with PCP. Second, PCP can still be detected in wastewater long after the plant discontinues the use of PCP as a preservative or segregates the PCP containing wastewater and treats and disposes of this wastewater separately. Third, PCP will always be present in a wood preserving plants' wastewater because of background levels in the environment. The commenters concluded that the Agency cannot promulgate regulations requiring no discharge of PCP because no discharge of all process wastewater would result in too severe economic consequences.

*Response:* Inasmuch as the Agency has decided not to promulgate the proposed no discharge standard for PCP, the participants' concern about the effect of a no discharge PCP standard for PSES is speculative. Had the Agency promulgated the proposed standard, however, it believes that it would have had to alter the standard somewhat to accommodate background and residual levels of PCP. In addition, the Agency would have exercised reasonable judgment with respect to those who made a good faith effort to achieve the PCP standard, but were unable to eliminate trace or background levels of PCP.

5. *Comment:* Two commenters argued that in setting a no discharge PSNS standard for Boulton and Steam subcategory wood preserving plants, EPA has mistakenly interpreted the Act to require that PSNS be based on the same considerations as NSPS, thereby ignoring the statutory command that PSNS only be established for pollutants which "may interfere with, pass through,

or otherwise be incompatible with" publicly owned treatment works. These commenters further argued that the statutory criteria for the establishment of PSES and PSNS are the same and that therefore the PSNS standard for Boulton and Steam subcategory plants should be no more stringent than the PSES standard.

*Response:* Contrary to the participants' assertions, EPA has not mistakenly equated NSPS with PSNS. Rather, its PSNS for Boulton and Steam subcategory plants is specifically designed to provide the maximum level of control economically achievable for pollutants which may interfere with, pass through or which are otherwise incompatible with POTWs. These pollutants include PCP, heavy metals and oil and grease. Data in EPA's record shows that PCP and heavy metals pass through publicly owned treatment works. EPA's no discharge PSNS standard insures that no pass through of these substances will occur.

EPA does not believe that PSES and PSNS must always prescribe the same level of control. Although the net goal is the same—to prevent the discharge of pollutants which may interfere with, pass through, or otherwise be incompatible with treatment works—economic considerations often allow new sources to install more effective treatment technology than existing sources. As demonstrated by the present case, new sources have greater flexibility and are often not subject to the retrofitting costs and space limitations which make the installation of no discharge treatment technology economically prohibitive for existing sources. Where this is the case, PSNS can be made more stringent than PSES.

6. *Comment:* One participant stated that the Agency cannot justify pretreatment standards based on POTW sludge disposal considerations until it establishes guidelines for disposal and use of POTW sludge under section 405 of the Clean Water Act.

*Response:* Although the Agency was concerned with the possibility that PCP is accumulating in POTW sludge, the driving force behind the proposed PSES and PSNS for the Boulton and Steam subcategories of the wood preserving industry was the Agency's concern that PCP is passing through POTW.

7. *Comment:* Several commenters pointed out that, although the previously promulgated regulation excludes rainfall runoff from the definition of process wastewater for the wood preserving segment, the information surveys (data collection portfolios) distributed by the Agency and perhaps the contractor's draft report include such runoff as part

of process wastewater. The commenters expressed some concern that the definition of process wastewater, if expanded in the final rules, will result in a substantial additional cost burden on all wood preservers, resulting in additional economic impact.

*Response:* The final rules promulgated here do not change the definition of process wastewater utilized in the previously promulgated regulations. Excluded from the definition of process wastewater for the wood preserving segment are: cooling water, material storage yard runoff (either raw material or processed wood storage), and boiler blowdown. The definition of process wastewater was expanded in the information surveys (308 letters) so that the Agency would have a complete understanding of the industry.

8. *Comment:* One participant stated that the Agency should establish a numerical limitation on the indirect discharge of polynuclear aromatics (PNAs) and PCP from wood preserving plants instead of inferring that control of Oil and Grease will control the discharge of these toxic compounds. The commenter stated that there is no obvious correlation between removal of Oil and Grease and removal of PNAs and PCP especially if wood preserving plants use technology different than the technology described in the Development Document.

*Response:* PNAs and PCP are extremely insoluble in water and very soluble in oil and, therefore, any effective oil-water separation technique will reduce the concentrations of these compounds in water. Data contained in the Development Document and the Agency's record demonstrates that effective control of PNAs and PCP is achieved by several oil-water separation techniques including gravity oil-water separation, chemical flocculation, slow-sand filtration, and the application of oil absorbing media. The Agency believes that application of such technology provides reasonable assurance of PNA and PCP control, although a specific level of total PNAs and PCP in the wastewater cannot be guaranteed.

9. *Comment:* One participant noted that even if polynuclear aromatics (PNAs) are controlled to 1 mg/l in wood preserving discharges and are diluted by other wastewaters prior to entering a POTW, water quality violations may result from the presence of PNAs in the POTW effluent.

*Response:* The Agency recognizes that, depending on the volume and flow of industrial discharge, the volume and flow of the receiving waters, and water quality requirements, the possibility of

water quality violations always exists. However, it considers such an occurrence very unlikely in the case of PNAs discharged from wood preserving plants. In the event wood preserving industry effluents cause the POTW to violate water quality standards for PNAs, then the POTW has the authority under 40 CFR 403 to restrict the discharge of PNAs from these sources so that the standards will not be violated.

10. *Comment:* One participant stated that the United States Department of Agriculture Rebuttable Presumption Against Registration (RPAR) Assessment Team found that the wood preserving industry statistics used in the Development Document and the Economic Impact Analysis Report understated the number of wood preserving plants and the volumes of products produced. The participant felt that EPA's data should be corrected prior to promulgation of final regulations.

*Response:* The Agency believes that the plant population used to develop information on the wood preserving industry leading to the promulgated regulations includes a cross section of plants in all age and size categories, process variations, and geographical locations. These plants also represent a full range of in-process and end-of-pipe control and treatment technologies. Since the Agency is not promulgating the proposed PSES and is not altering the existing regulations for existing direct dischargers, wood preserving plants identified as a result of the USDA RPAR assessment activities will not be subject to any additional costs as a result of this regulation. The Development Document has been revised to include available information on the additional plants.

11. *Comment:* One participant questioned the validity of data presented in the Development Document which showed that a greater volume of process wastewater was generated by wood preserving plants that treat a significant amount of dry stock than plants that use closed steaming conditioning.

*Response:* The data presented in the Development Document was provided by the plants in their response to the data collection portfolio; additionally, each of the plants was contacted during a follow-up telephone survey to ensure proper interpretation of the data. The information generated by the telephone survey revealed that many of the plants listed as treating a significant amount of dry stock also treat a considerable amount of green stock by open or modified (semi-closed) steam

conditioning which results in the apparent discrepancy.

12. *Comment:* One participant stated that the treatment system at wood preserving plant 593, (Table VII-10 of the Development Document), which was described as being less than the equivalent of BPT treatment technology, is actually representative of a BAT system since it achieves zero discharge.

*Response:* Table VII-10 of the Development Document presents the results of sampling conducted at plant 593 during the 1975 pretreatment study. At the time of sampling, plant 593 did not have its no discharge spray irrigation system installed, and the plant was not achieving the current BPT limitations for Wood Preserving-Steam plants because of insufficient aeration capacity of the plant's facultative lagoon system. The fact that the plant is currently a nondischarger, a fact duly noted in Table VII-5 of the Development Document, does not invalidate the sampling results obtained during the 1975 pretreatment study.

13. *Comment:* Two participants stated that the Agency has underestimated sludge disposal costs for the wood preserving industry. One of these participants presented documentation of sludge disposal costs for a wood preserving plant that are considerably higher than the costs presented in the Development Document.

*Response:* Estimates for sludge handling and disposal developed by the Agency are based primarily on information provided by the industry and are believed to be representative of the industry's costs. The possibility exists, however, that an occasional plant will experience sludge handling and disposal costs considerably higher or lower than those predicted in the development document. In any event, the limitations promulgated for wood preserving plants in this regulation will not result in an increase in the amount of sludge generated by existing plants and will only slightly increase the amount of sludge generated by new sources. Any increase in sludge disposal costs resulting directly from these regulations will, therefore, be minimal.

14. *Comment:* Two comments stated that the Agency understated the costs of land, equipment, energy and other components of the total cost of complying with the proposed PSES for the Wood Preserving-Steam and Wood Preserving-Boulton subcategories. One of the commenters presented information demonstrating that individual wood preserving plants experienced higher costs for installation or construction of selected treatment units than those presented in the

Development Document. The commenters generally felt that the costs of compliance outweighed the environmental benefits achieved and that the proposed standard would result in a substantial number of plant closures.

*Response:* The issue of whether the Agency properly estimated the cost of compliance is mooted by the Agency's decision not to promulgate the proposed PSES standard. Nevertheless, after reevaluating the costs presented in support of the proposed standard, the Agency has concluded that the costs presented were correct. The estimated costs of compliance for the wood preserving industry were based on a thorough and carefully conducted cost analysis of treatment technologies applicable to this industry. Actual vendor's quotes for pollution control equipment and conventional engineering design, construction and installation costs were used and updated several times during this analysis. The Agency recognizes that the cost to individual plants for specific treatment units or construction elements may be higher or lower than the Agency's estimate because of regional cost differences and site specific requirements. A factor equal to fifteen percent of the total estimated capital cost was added to each cost estimate to account for this potential variation in costs.

15. *Comment:* One commenter stated that the Agency failed to take into consideration the multiplier effect of the plant closings that the proposed PSES would cause. He stated that this effect, which takes into account the secondary and tertiary consequences of plant closures, indicates that the closures estimated by EPA would result in significantly greater economic consequences than indicated in the Economic Impact Analysis.

*Response:* Inasmuch as the Agency is not promulgating the proposed PSES standard there is no need to consider the multiplier effects of the plant closings projected to occur as a result of this standard. Moreover, the Agency does not believe that such a potentially unlimited analysis is required by the Act nor does it currently possess the data necessary to perform a quantitative analysis of the secondary and tertiary economic impacts of its regulations. In any event information that the Agency has on hand suggests that the multiplier effects would be minimal. The small plants are the ones that would be subject to potential closure. These closures would not cause a loss of supply for the industry but should instead produce shifts among the

remaining plants to cover the production loss from the small plants. The Agency's information on capacity utilization indicates that any resulting production bottlenecks would not be excessive even in the short run.

16. *Comment:* One participant questioned the statement in the Economic Impact Analysis that the prices of preserved wood products are set by larger wood preserving companies and that inflation eventually will allow for cost recovery. The commenter stated that the larger companies operate on an areawide or national basis and are generally locked into local prices set by the smaller companies. The commenter added that inflation cannot always be relied upon to provide partial environmental cost recovery.

*Response:* The Agency believes that the commenter's assertion is valid for certain regions of the country. This, however, does not imply that the economic impact of the proposed regulations on the larger wood preserving plants is understated. If prices are set in local markets by the small companies, the large firms are thereby provided a price umbrella because they face proportionately lower costs. This reduces the firms' dependence on inflation for allowing partial cost recovery.

17. *Comment:* A participant argued that the Agency failed to adequately take into account the cumulative economic impact that overlapping air, water and solid waste regulatory requirements would have on the wood preserving industry if the proposed no discharge of PCP pretreatment standards were promulgated. The commenter also felt that the proposed regulations would result in the diversion of PCP from media where it is biodegradable (water) to media where it is not readily degraded (air and sludge).

*Response:* The Agency has attempted to take into account the full economic impact of the proposed regulations, including the costs attributable to other environmental programs. To the extent that the Agency has not taken into consideration such costs, it has done so because it believed that consideration of such costs would not affect the shape of the final regulations. See response to Comment 3.

The Agency is not aware of any confirmed air pollution problems associated with the application of evaporative technologies to wood preserving wastewater and is conducting a study to determine the possibility of transfer. Although the PSNS standard will undoubtedly result in the transfer of PCP from wastewater

to sludge, the Agency does not consider this to be a problem, given that the RCRA regulations will ensure safe disposal of such wastes.

18. *Comment:* One participant supported the proposed no discharge of PCP standard for the indirect discharging portions of the Wood Preserving-Steam and Wood Preserving-Boulton subcategories on the grounds that implementation of this standard would prevent the potential discharge of dioxins, sometimes associated with the preservative PCP.

*Response:* Approximately 25 percent (39 of 143) of the raw and treated wastewaters from the wood preserving segment were analyzed for 2, 3, 7, 8 tetrachlorodibenzo-p-dioxin (TCDD). This dioxin was never detected. No other dioxin compounds were analyzed. The Agency solicits information on the presence of other dioxin compounds in wood preserving wastewater and will be willing to reconsider its action if other dioxins are shown to be present in environmentally significant amounts.

19. *Comment:* One participant expressed the concern that workers in close proximity to wood preserving wastewater evaporation systems may be affected by toxic pollutants transferred from the wastewater to the ambient air. The participant felt that this possibility should be investigated prior to promulgation of a regulation which would require the use of evaporative technology.

*Response:* At the time of this rulemaking, the majority of wood preserving plants currently achieving a no discharge of process wastewater status are achieving this level with the application of some form of evaporative technology. The Agency is not aware of any ill effects suffered by workers exposed to wood preserving wastewater evaporation systems. Information on this possibility was requested in the Solicitation of comments section of the proposed rules for the timber industry. No information was received, except the concern expressed in this comment. The Agency continues to request information, and will consider all information received.

20. *Comment:* One participant noted that the arsenic concentrations presented in the Development Document for raw and treated effluents from one wood preserving plant appear to be abnormally high and unrepresentative of wood preserving plants which treat with organic preservatives only.

*Response:* The Agency agrees that the arsenic values reported for this plant are abnormally high and unrepresentative of plants which treat with organic preservatives only. The arsenic

concentrations for this plant have been deleted from the average raw and treated effluent calculations presented in Sections V and VII of the Development Document.

21. *Comment:* One participant noted that the oil and grease content of the final effluent from wood preserving plant 499, as presented in Table VII-10 of the Development Document, appears to be abnormally high. This participant requested verification.

*Response:* Table VII-10 lists plants whose treatment systems represent less than the equivalent of BPT treatment technology. The treatment system at plant 499 consisted solely of primary gravity oil-water separation at the time of the sampling; hence the oil and grease concentration listed for this plant is not abnormally high.

22. *Comment:* One participant pointed out that Table VII-45 of the Development Document shows that wood preserving treated effluent has a higher metal concentration than the untreated wastewaters. This participant requested verification.

*Response:* Table VII-45 presents average raw and treated wasteloads of heavy metals for wood preserving plants with current pretreatment technology in place. Current pretreatment technology, which consists of gravity oil-water separation followed by chemical flocculation and filtration, is not designed to remove heavy metals from wastewater. Close examination of the data which comprise Table VII-45 reveals remarkable consistency in the raw and treated wasteloads presented, considering the low concentrations at which the heavy metals are present and the small number of data points which make up each average figure reported.

23. *Comment:* One participant argued that, in its estimation of wood preserving pretreatment costs, the Agency improperly assumed that 50 percent of the costs of the wood preserving primary oil-water separation treatment are offset by the value of the oil recovered. The participant stated that the lower quality of the recovered oil was not taken into account.

*Response:* Although the Agency did not specifically account for the potentially lower quality of the recovered oil in its analysis, a conservative value, which is considerably below the current market value of this commodity, was used. Furthermore, since the Agency has decided not to go forward with the proposed PSES for the Wood Preserving-Boulton and Wood Preserving-Steam subcategories, no incremental compliance costs will be incurred.

24. *Comment:* One reviewer noted that the Agency has allowed the discharge of pentachlorophenol (PCP) for the leather tanning industry, but has proposed pretreatment standards for existing sources of no discharge of PCP in the Wood Preserving-Steam and Wood Preserving-Boulton subcategories of the timber industry, even though total PCP discharge for both industries is comparable. The commenter questioned this apparent inconsistency in controlling a given pollutant across industry categories.

*Response:* The no discharge limitation for PCP proposed in the timber industry was a technology based standard, already demonstrated in the majority of the wood preserving segment of the timber industry. Similar technology to achieve no discharge of PCP is not available or demonstrated in the leather tanning industry because of significant differences in the wastewater characteristics, particularly flow, of the industries. As discussed in the Development Document and elsewhere in this preamble, the volume of wastewater generated, the characteristics of the wastewater, the availability of technology, and the cost of technology, as well as the industry's or industry segment's ability to absorb those costs are all considerations that enter into the Agency's decision regarding regulatory approaches to a given industry or subcategory. Consequently, the level of control of a specific pollutant may differ considerably from category to category, or even subcategory to subcategory.

25. *Comment:* One participant criticized the Agency's analysis of the cost estimates for the zero discharge technology in the Wood Preserving-Steam indirect discharge subcategory. The commenter stated that the calculation of revenue required to recover cost did not include interest charges and the cost of external financing was not addressed.

*Response:* The revenue required to recover costs of the installation of pollution control equipment for the Wood Preserving-Steam subcategory did not include interest charges. External financing costs were not taken into account because the Agency felt that a more accurate indication of the regulation's impact would be seen by utilizing internal cash flow financing. Wood preserving companies are generally small and therefore would have limited access to external financing. The 308 financial survey revealed that wood preserving firms do not have debt, are not accessible to equity markets, and have an average

capital rate of return equaling 12 percent. External financing for companies with these specifications would require prime lending rates plus 1-2 percent more to account for risk. This amount would be greater than a 12 percent rate of return on capital. This is discussed in the Economic Impact section and Limits of the Analysis section of the *Economic Impact Analysis of Alternative Pollution Control Technologies: Wood Preserving Subcategories of the Timber Product Industry* in more detail.

26. *Comment:* A participant stated that the Agency underestimated the cost of constructing a new wood preserving plant. The participant stated that his company incurred costs significantly greater than the Agency's cost estimate when his company built a wood preserving plant similar to the model plant the Agency used as a basis for its estimate.

*Response:* The cost estimates for building new wood preserving plants were derived from interviews conducted with a cross-section of the industry. The plants were of varied sizes, locations and product mixes. Average costs for model plant construction were drawn from this representative sample. Variation around the average estimated costs for building new wood preserving plants is expected due to specific conditions in each region. EPA expects that observed costs will vary around the model plant cost estimates, which are in 1977 dollars. If plant construction costs are indeed substantially higher than estimated by EPA, the costs of NSPS and PSNS pollution control will be even less of a hindrance to new source construction than presently expected.

27. *Comment:* One participant stated that the Agency has not adequately addressed the issue of wet process hardboard biological treatment system performance variability and, therefore, has underestimated the cost of complying with the proposed regulations.

*Response:* The Agency agrees that an error in the statistical methodology used to calculate 30-day variabilities resulted in the inability of wet process hardboard model plants to consistently meet the proposed 30-day effluent limitations. The participants concern appears to be that compliance costs are understated because they are based on design criteria derived from model treatment systems unable to meet the proposed limitations. The Agency has, however, corrected its statistical methodology and is promulgating revised 30-day limitations which are being met by all model plants. Compliance costs, therefore, are not understated with

respect to the demonstrated ability of the model plants to comply with the promulgated limitations.

28. *Comment:* Several participants claimed that EPA failed to take into account the effects of geographical location and temperature variations upon treatment system performance in developing effluent limitations for the hardboard and insulation board segment. These participants contended that as a result of the Agency's failure to adequately address this issue, the costs of compliance were understated because they do not account for the costs that plants will be required to incur insulating their treatment systems from the cold. One participant suggested that the Agency promulgate separate limitations for winter and summer seasons as a method of accounting for seasonal temperature variations. One participant requested that the Agency include in the record data previously provided by the participant which demonstrated the effect of temperature shock on one plant's biological system.

*Response:* The Agency recognizes that temperature variations influence the performance of biological treatment systems. The Agency has taken into account the effects of seasonality and temperature extremes by deriving effluent limitations which are based on the actual performance of biological treatment systems located in geographical areas subject to wide temperature extremes and prolonged periods of freezing or near freezing temperatures.

The promulgated limitations are based on a thorough analysis of all effluent data from each exemplary biological system over a two to three-year period, including periods of temperature shock and seasonal upset. The limitations are statistically derived and represent wasteloads which are not exceeded by the exemplary plants 99 percent of the time, which means that the limitations are based on the highest levels of effluent discharge experienced by the treatment systems in time of stress.

The Agency evaluated all data in the record concerning the effects of temperature shock on biological treatment systems, including the data submitted by the above respondents, and believes that its statistical methodology accounts for all temperature-related upsets which are part of the normal operation of a biological treatment system. The Agency considered setting separate limitations for winter and summer seasons. Preliminary evaluation of seasonal limitations indicated that they would result in effluent limitations at least as stringent as the promulgated

limitations. For reasons of administrative and enforcement efficiency, the Agency has elected to establish a single limitation for the entire year.

The exemplary treatment systems, upon whose demonstrated performance the effluent limitations are based, do not require insulation or external heat. The costs of these temperature control items, therefore, are not appropriate elements of compliance costs and have not been included in compliance cost estimates appearing in the Development Document.

29. *Comment:* A comment was made that the Agency failed to consider the effects of raw material wood species, cooking conditions and whole tree chipping operations on raw wasteload variations of the wet process hardboard subcategory.

*Response:* The Agency thoroughly evaluated all data pertaining to the factors affecting the raw wasteload and determined that insufficient data existed to accurately quantify the effects of wood species variations, cooking conditions or the use of whole tree chips. The data did show, however, that these factors have a very small effect on raw wasteload compared to the type of hardboard produced.

30. *Comment:* One participant questioned the appropriateness of using the performance of an S1S hardboard plant wastewater treatment system as a basis for establishing Best Practical Control Technology (BPT) for the S2S hardboard subcategory.

*Response:* The Agency used the performance of an S1S hardboard plant wastewater treatment system as a basis for setting BPT because the only plant that produces solely S2S hardboard demonstrates removal capability much higher (94.3 percent removal of BOD and 91.5 percent removal of TSS) than that normally associated with BPT. The Agency's approach is the most rational one available, given the absence of an existing S2S facility meeting the general criteria for the BPT level of control. The reasonableness of this approach is demonstrated by the fact that, of seven plants producing S2S hardboard, all but one plant currently achieve the BPT limitation so derived from the S1S plant.

31. *Comment:* One participant noted that the specific engineering design criteria for BPT S1S plant is essentially the same as the specific design criteria for S1S BCT plant. The participant questioned how BCT effluent limitations could be met if BCT engineering design criteria is presently in use and only BPT effluent limitations are being met.

*Response:* The above question stems from a fundamental misunderstanding in

how the BPT and BCT specific engineering design criteria must be applied. Because there is substantially more BOD to be removed by the BCT system, the BCT aeration basin and aeration horsepower requirements are substantially higher than those of the BPT system. The engineering design criteria for the BCT and BPT settling basins are expressed as a surface overflow rate in the Development Document and are markedly different.

32. *Comment:* One participant questioned the validity of the Agency's assumption that a primary clarifier followed by an activated sludge system would perform as well as the Infilco<sup>®</sup> solids contact units installed at the plant upon which the S2S model BCT system is based. (The Infilco<sup>®</sup> units provide a combination of primary settling and preliminary biological treatment).

*Response:* The record contains several examples of primary clarifiers followed by activated sludge units which are installed in wet process hardboard and insulation board plants and which perform as well or better than the proprietary Infilco<sup>®</sup> units in question.

33. *Comment:* The Agency received several comments that, because some plants in the hardboard industry have land availability constraints, Best Conventional Pollutant Control (BCT) effluent limitations were not achievable or were not achievable at the cost estimated in the Development Document.

*Response:* The Agency recognizes the problem of land availability experienced by some plants. There are, however, alternative approaches available to achieve compliance with the BCT limitations which are not land area intensive. These approaches include the use of biological treatment systems which utilize pure oxygen and do not require large aerated lagoons and the application of in-plant controls to reduce the volume of wastewater generated. Several plants have successfully implemented either or a combination of these two approaches in reducing their effluent wasteloads. At least one of these alternatives, in-plant controls to increase the recycle of process water within the plant, has been demonstrated by several wet process hardboard plants to be less costly than the BCT biological treatment system.

34. *Comment:* One participant stated that a new source in the wet process hardboard industry may not always have the ability to choose locations with enough land to accommodate spray irrigation technology and therefore might not be able to achieve the proposed NSPS of no discharge of process wastewater.

*Response:* The achievement of the proposed no discharge NSPS is not necessarily tied to the installation of any particular technology. If a new source cannot find a site with land suitable for spray irrigation, it can select an alternative method of achieving the new source performance standard, such as recycle. If this is not appropriate it should expand its efforts to find an appropriate plant site.

35. *Comment:* One participant stated that higher board quality requirements, a high percentage of aspen in the plants' raw material and other unique aspects of the production process cause this participant's S2S hardboard mill to exhibit raw wasteloads significantly exceeding those of other S2S producing plants. For this reason, the participant contended that his plant should receive special consideration by the permitting authority.

*Response:* The Agency has conducted a special study to evaluate the production processes and operating procedures employed at the plant in question. The study did not identify any quantifiable factor or factors that could justify a separate subcategory or regulatory approach appropriate for this plant. Because this plant could not be placed in a different subcategory from the other S2S hardboard producing plants, technology needed by this plant to meet the limitations has been identified, and the plant's costs of installation and operation have been presented. The Agency acknowledges that the costs that must be incurred by this plant in order to achieve the BCT limitations are extremely high. The plant has the opportunity to request consideration of the above listed factors during proceedings for issuance of a NPDES permit. (See 40 CFR 125.30-32).

36. *Comment:* Two participants identified errors in the Development Document concerning the description of the wastewater treatment system at Plant 207, which is the Best Practical Control Technology model plant for the S1S portion of the wet process hardboard subcategory. These participants noted that the size of the aeration basin at the model plant was understated and that consequently the design criteria for the BPT aeration basin, as well as the cost estimates for other facilities to provide the required aeration, were understated.

*Response:* Errors in the description of the plant have been corrected and the BPT design criteria and associated compliance costs revised accordingly. As a result of these corrections, estimated compliance costs for BPT have increased but the BPT effluent reduction benefits still justify the

compliance costs. The errors identified were the result of incorrect information provided by the PBT model plant in a data collection portfolio response.

37. *Comment:* One participant stated that a major in-plant retrofitting program conducted in 1976 at the S1S hardboard BPT model plant renders the raw wasteload and treated effluent data atypical since the latter half of 1976. This participant further contended that the effluent data for 1976 and 1977 are insufficient to accurately determine long term treated effluent averages or to accurately determine the variability upon which the BPT limitations are based, because the winters of 1976 and 1977 were two of the driest and mildest winters on record.

*Response:* The Agency thoroughly reviewed the 1976 and 1977 raw and treated effluent data for the BPT model plant. No significant differences were observed for either raw or treated wasteloads during the years 1976 and 1977, in spite of the retrofitting program conducted by the plant. The Agency requested data from the plant for 1978 and 1979 so that an extended data base could be included in the derivation of the S1S BPT effluent limitations. In response to the request for additional data the plant stated 1978 and 1979 data are markedly unrepresentative of normal wastewater treatment system operations primarily because of the effects of a 1978 flood which washed out a solids settling lagoon. The Agency, in the absence of additional data, used the data base available to derive PBT limitations for the S1S hardboard subcategory. The fact that seven out of nine existing S1S subcategory plants currently comply with these PBT limitations is a clear indication of their appropriateness for the S1S subcategory.

38. *Comment:* One participant commented that the capital and operating costs reported in the Development Document for plant 207 to achieve compliance with BCT are not appropriate because of limited land available for treatment system expansion, the periodic cold weather experienced in the region of the plant, and the underestimation of sludge disposal costs for the plant.

*Response:* The Agency recognizes the problem of land availability experienced by some plants, however there are alternative approaches available to achieve compliance with the BCT limitations which are not land area intensive and which several plants have adopted to reduce their effluent waste loads. At least one of these alternative methods, partial process water recycle has been demonstrated at several S1S

hardboard plants to be less costly than the model BCT biological treatment system. The promulgated BCT limitations for S1S wet process hardboard plants are based on demonstrated performance over a three year period of a biological treatment system operating in a climate subject to wide temperature extremes. The system does not require external temperature controls in order to achieve its demonstrated performance. For this reason the cost of temperature controls is not an appropriate element of the costs of compliance reported in the Development Document. The plant has apparently misinterpreted the Agency's definition of the costs of compliance required to achieve BCT. The costs reported are incremental costs above and beyond those costs required to comply with BPT limitations. Since all wet process hardboard plants with BPT biological treatment facilities must already have facilities in-place to handle and dispose of the sludge generated in their treatment systems, the costs of handling and disposing of the relatively small increase in the amount of sludge generated are low compared to existing sludge operating costs. For plant 207, \$24,400 (1977 dollars) per year incremental operating costs were estimated as part of the handling and disposal of the incremental sludge.

39. *Comment:* One commenter stated that the laboratory study referenced in the Development Document, which was conducted by EPA-IERL concerning the generation of raw waste loads from hardboard production, does not represent the raw waste load from full scale hardboard plant processes. The commenter indicated that the cooking conditions do not duplicate any plants cooking conditions, and as a result understate BOD generation and overstate yield.

*Response:* The study referenced in the Development Document was not used to quantify raw waste loads in the hardboard industry. Raw waste generation values presented in the Development Document are based solely on industry supplied untreated effluent data.

40. *Comment:* One participant complimented the Agency on its good judgement in not proposing BAT limitations for the toxic pollutants detected at low levels in treated effluents of the insulation board and hardboard segment.

*Response:* The Agency has found that there is no economically feasible treatment technology or economically feasible which is capable of reducing these low levels of pollutants in hardboard and insulation board

effluents. Therefore, the Agency did not propose BAT regulations for these pollutants.

41. *Comment:* One reviewer stated that since the Development Document indicates that BPT technology is sufficient to remove toxic pollutants from hardboard wastewaters, the imposition of BCT for this industry segment is unnecessary.

*Response:* BCT is a level of control for conventional, as opposed to toxic pollutants. Therefore, the fact that a BPT technology might control toxics does not obviate the need for a BCT requirement.

42. *Comment:* One participant questioned the Agency's statement that the differences in sludge generation between Best Practical Technology (BPT) and Best Conventional Technology (BCT) systems for the hardboard industry are negligible. A few participants stated that the sludge disposal costs presented for the hardboard industry were understated.

*Response:* The increase in sludge generation from BPT to BCT is estimated to be 48,785 cubic yards per year (a 9 percent increase over estimated BPT sludge generation). The cost for handling this additional 9 percent of relatively non-hazardous sludge is small, relative to the total capital and operating cost of achieving the BCT limitation. The sludge disposal costs estimated by the Agency for compliance with BPT and BCT are based on costs reported to the Agency by the plants in response to the data collection portfolio for the hardboard industry.

43. *Comment:* Two participants stated that the *Standard Methods* procedure used for the analysis of total phenols, as applied to insulation board/hardboard wastewaters, can result in a positive response because of the presence of nontoxic natural wood derivatives in the raw wastewater. These participants added that this positive response could occur even in the absence of any specific toxic phenolic substances in the wastewater.

*Response:* This rulemaking does not include any limitations on total phenols as measured by *Standard Methods*. Nonetheless, the pollutant parameter phenols, as measured by *Standard Methods*, is considered by the Agency to be a significant parameter and may be used as a control parameter in the future.

44. *Comment:* One participant felt that the Agency incorrectly concluded that the use of phenolic thermosetting resin in S1S hardboard manufacture is the sole reason that total phenols, as measured by *Standard Methods*, are observed at higher levels in S1S

hardboard raw wastewater than in S2S hardboard raw wastewater.

*Response:* The Agency identified the use of phenolic thermosetting resins as one cause of the higher total phenols level in S1S hardboard raw wastewater—not as the sole cause.

45. *Comment:* One participant questioned the validity of the analytical result which reported 10 micrograms per liter of toluene in a hardboard plant's intake water. The participant pointed out that the plant's source of water is a relatively pure mountain stream.

*Response:* Inasmuch as these regulations place no specific limitation on toluene, this comment is relevant only to the general reliability of the Agency's analytical methods. Toluene was found at 10 µg/l, which is the detection limit for this compound, in the plant's intake water. The Agency recognizes the constraints involved in interpreting data which is reported at, or near, analytical detection limits. The Agency has compiled a considerable data base on potable water sources which demonstrates that few surface waters are entirely free of trace organic contaminants.

46. *Comment:* Several comments were received criticizing EPA's BCT methodology. One criticism was that EPA has incorrectly assumed the law mandates the setting of BCT limitations at a level of treatment higher than BPT limitations if the BCT technology passes the cost reasonableness test. A second criticism was that in assessing "effluent reduction benefits," EPA failed to take into consideration the improvement in the quality of the receiving water which will result from application of BCT technology. A third criticism was that EPA's BCT methodology omits consideration of the "reasonableness" of the cost of treatment beyond BPT levels compared to the "benchmark" cost of BPT, as required by section 304(b)(4)(B) of the Act. A fourth criticism was that EPA's BCT methodology improperly bases POTW removal costs on the expected incremental POTW costs of moving beyond secondary treatment instead of on the incremental costs actually being experienced by POTW—many of which have not yet installed secondary treatment. A final comment was that EPA should develop information enabling it to base its cost reasonableness figure on marginal costs which narrowly straddle secondary treatment, rather than on the marginal costs of moving from secondary to advanced secondary treatment. This commenter noted that EPA admitted in its BCT review of secondary industries that an increment which narrowly straddles secondary treatment would

have been preferable in identifying marginal costs, had the data existed.

*Response:* On August 29, 1979, EPA promulgated BCT limitations for a number of secondary industries and set forth its general BCT methodology (44 FR 50732). The validity of those regulations and the underlying BCT methodology is presently being litigated in the U.S. Court of Appeals for the Fourth Circuit *American Paper Institute, et al. v. EPA* (No. 79-1511 et al.). In the course of promulgating these secondary industry BCT limitations, EPA reviewed and fully responded to all of the above criticisms of the BCT methodology. Therefore, no further response to these criticisms is deemed necessary. It should be noted, however, that the commenters have taken out of context EPA's statement that a narrower increment than secondary to advanced secondary treatment would be preferable in identifying the marginal costs of secondary treatment (44 FR 50735). As the preamble clearly states, the approximation of the costs of secondary treatment was only one of a range of reasons for the Agency's selecting the secondary treatment to advanced secondary treatment increment. No new data has been presented which warrants revision of the Agency's methodology nor does the Agency believe it necessary to acquire such data. The issue of whether the Agency's approach satisfies the language and intent of section 304(b)(4)(B) will be addressed in the current litigation.

47. *Comment:* One participant requested additional information regarding the methodology used by the Agency in developing effluent limits for industrial sources. The commenter requested information on: the factors considered in selecting the technologies upon which the standards were based; the extent to which the proposed standards minimize the cost of achieving desired control levels; and the extent to which the proposed level of control for individual toxic substances adequately reflects differences in the degree of toxicity, persistency, etc.

*Response:* The effluent limitations and standards promulgated here are based on performance of technology determined from a logical progression of information collection and evaluation procedures. The wastewaters generated by the industry were characterized in terms of volume, and kinds of pollutants present. The treatment technologies available to reduce these pollutant levels were evaluated. The performance reliability of each of these technology applications was determined. In

addition, the costs of installation and operation of these technology options were determined. Concurrently with the evaluation of the technology options, the Agency conducted economic analyses of the industry. The objective of these analyses was to determine the economic/financial viability of various segments of the industry. In particular, these analyses focused on the economic effect of adding various levels of pollution control costs to the annual operating costs of plants or different groups of plants (e.g., large plants, small plants, one product plants, etc). In addition, the Agency evaluated, after wastewater characteristics information became available, the potential effect of the discharge of specific pollutants on receiving water quality. Following the collection of the information discussed above, the Agency evaluated the information and weighed and balanced the technical and economic considerations; as well as considerations of the degree of toxicity and persistence of specific pollutants present. The regulations promulgated here represent, in the Agency's judgment, the most stringent control of toxic pollutants reasonably and economically achievable.

48. *Comment:* One participant suggested that the Agency establish priorities for controlling different toxic pollutants.

*Response:* The Clean Water Act of 1977 listed sixty-five compounds and classes of compounds as toxic pollutants, without regard the relative toxicity of these compounds. In a sense, the Agency has established priorities among these 65 pollutants and classes of pollutants by singling out 129 specific toxic pollutants for particular study from the potentially thousands of specific pollutants included in the 65. However, within the class of 129 specific pollutants which are the focus of the Agency's rulemaking efforts, the Agency establishes no priorities, nor does it think it wise to do so.

49. *Comment:* Two participants expressed concern over uncertainties in the Agency's toxic pollutant data base. Statements were received that the protocols are inadequate, and that the Agency should provide further information on the precision and accuracy of the methods employed. One commenter stated that to the extent that screening and verification phase data are inaccurate they should not be relied on in proposing these regulations.

*Response:* The sampling and analytical protocols used and refined throughout the course of this rulemaking program represent state-of-the-art methods. Information concerning these

methods is provided in the Federal Register notice of December 3, 1979 (44 FR 69532) and the thirty-eight documents, data sets and reports referenced in the December 3, 1979 Federal Register notice which the Agency made available to the public in March 1980. These documents include reports on precision and accuracy from fourteen industrial studies, including the timber industry (45 FR 15950, March 12, 1980). The guidelines and standards promulgated here do not establish limits on specific toxic pollutants. Therefore, the precision and accuracy of the analytical methods is not a factor in this rulemaking.

**50. Comment:** Several participants commented that the Agency should carefully consider whether the environmental benefits of the proposed regulations on the timber industry outweigh the economic impacts.

**Response:** The Agency conducted a thorough economic impact analysis of the regulations on the industry and carefully considered the environmental benefits that would result. For the wood preserving segment, there should be no adverse economic impact associated with the regulations promulgated here. For the hardboard and insulation board segment, the cost of attaining the BCT limitations required by the promulgated regulation is well within the \$1.15 per pound "cost reasonableness" yardstick for BOD and TSS removal. One closure candidate in the hardboard segment has been identified.

**51. Comment:** One participant stated that the Agency's rulemaking activities should encourage the introduction of new technologies for the control of toxic, conventional and nonconventional pollutants. The participant requested information on the effect these regulations will have on technological progress.

**Response:** Although the Agency's rulemaking activities here do not require the application of any particular technology, they are "technology-forcing" in the sense that some plants will be required to install more effective treatment technology to meet the effluent limitations being promulgated. The Agency is normally constrained, however, in the extent which it can "force" the introduction of innovative or novel technology because its effluent limitations and standards must be capable of being achieved by demonstrated technology. Section 301(k) of the Act specifically addresses itself to this matter by empowering the Agency to extend the BAT compliance date for a discharger who proposes to install innovative technology which will enable it to achieve significantly greater

effluent reduction than required by BAT or to achieve BAT at a significantly lower cost. The Agency has recently set forth its proposed approach for implementing section 301(k) at 45 FR 62509 (September 19, 1980).

**52. Comment:** Several commenters objected to EPA's "indicator" strategy. These objections were many and varied. A paramount objection was that the Clean Water Act requires EPA to set numerical limitations for specific toxic pollutants and does not permit the use of indicators. A second objection was that EPA has failed to demonstrate that there is a statistically significant correlation between the removal of conventional "indicator" pollutants and the removal of toxic pollutants.

Consequently, noted the commenters, the use of conventional pollutants as indicators may result in unnecessarily stringent control of conventional pollutants with no significant corresponding reduction in toxic pollutants. A third objection, along somewhat the same lines, was that use of conventional pollutants as indicators in pretreatment regulations requires treatment of pollutants which are compatible with POTW and thus imposes unnecessary and redundant treatment requirements. A fourth objection was that using conventional pollutants as indicators forces the discharger to choose technology based on the technology's ability to remove indicators rather than toxics, thereby effectively dictating the use of a specific technology and foreclosing the discharger from achieving toxic control by alternative means, such as an internal process changes, which might reduce the toxic pollutants without reducing the conventionals. A fifth objection was that EPA refuses to equate POTW removal of an indicator pollutant with POTW removal of a toxic pollutant for purposes of granting a POTW removal credit, even though EPA designation of a pollutant as an "indicator" necessarily assumes that there is a close correlation between a given technology's ability to remove the indicator and its ability to remove the toxic.

**Response:** The objections to EPA's "indicator" approach rest on the mistaken assumption that EPA is employing an "indicator" pollutant in the timber industry effluent limitation guidelines. This assumption may be attributable in large part to the Agency's statement in the preamble to the proposed rule that it was retaining the current 100 mg/1 Oil and Grease limitation as an "indicator" which would reasonably assure control of

polynuclear aromatic compounds (PNAs). Unfortunately, this remark in the preamble was misleading and does not reflect the Agency's final intention. Although the Agency's decision to retain the old 100 mg/1 Oil and Grease limitation was influenced by the recognition that Oil and Grease removal results in PNA removal, it is not employing Oil and Grease as a true "indicator" in the final regulation. Violation of the Oil and Grease standard will thus not be held to be a violation of any PNA standard. Similarly, although the Agency's decision to retain the Oil and Grease standard was influenced by the recognition that Oil and Grease removal results in the reduction of pentachlorophenol (PCP) levels, the Agency is not employing Oil and Grease as a true "indicator" for PCP. Consequently, inasmuch as there are no "indicator" pollutants in the final timber industry guidelines, there is no need to respond to the commenters' criticism of EPA's "indicator" approach.

**Comment:** Two participants expressed concern that the Agency's definition of a new source may be changing. This concern is based on their reviews of the Clean Water Act, the proposed regulations for the timber industry, and the Development Document supporting the proposed regulations.

**Response:** The definition of new source applicable to these regulations is that found at section 122.3 of the recently promulgated Consolidated Permit Regulations. See 45 FR 33290, 33422. This definition is based on the statutory definition of new source and is the same as that employed in the previously applicable NPDES regulations. The Agency's definition of new source has thus undergone no recent change.

The Agency's attempt to clarify the distinction between construction which constitutes a new source and construction which merely constitutes a modification of an existing facility has, however, undergone recent change. On September 9, 1980 the Agency suspended section 122.66(b) (1) and (2) of its Consolidated Permit Regulations which attempted to distinguish between construction which constitutes a new source and construction which merely constitutes the modification of an existing source. See 45 FR 59317. In its place the Agency proposed a new section 122.66(b) (1) and (2). See 45 FR 59344, September 9, 1980. Further information concerning this proposed change can be obtained by consulting the above cited sections of the Federal



Register and the relevant portions of the Consolidated Permit Regulations:

54. *Comment:* Several participants pointed out what appeared to be inconsistent use of the terms "phenol," "phenols," and "total phenols" in the Development Document.

*Response:* The Development Document has been revised to eliminate this inconsistency. In all cases, the terms "phenols" and "total phenols" are used to indicate analysis by the *Standard Method* procedure; the term "phenol" is used to indicate the specific chemical compound phenol (C<sub>6</sub>H<sub>5</sub>OH).

55. *Comment:* One participant pointed out that in January, 1980, EPA proposed that ammonia be designated as a toxic pollutant under section 307(a) of the Clean Water Act. The commenter stated that if ammonia is eventually designated as a toxic pollutant, operators of biological treatment systems will be forced to limit the amount of ammonia added to the treatment system in order to insure that ammonia is not present in the discharge to receiving waters. The commenter concluded that if the addition of ammonia is reduced in this manner the performance, i.e., biological activity, of the treatment system will be reduced, possibly resulting in violation of the BPT or BCT effluent limitations.

*Response:* EPA has recently withdrawn its proposal to add ammonia to the list of toxic pollutants (See 45 FR 79692, December 1, 1980). This action essentially resolves the participants concerns.

#### Appendix B—Toxic Pollutants Not Detected in Treated Effluents

##### *Insulation Board and Hardboard*

chloromethane  
dichlorodifluoromethane  
bromomethane  
vinyl chloride  
chloroethane  
methylene chloride  
trichlorofluoromethane  
1,1-dichloroethylene  
1,1-dichloroethane  
1,2-trans-dichloroethylene  
chloroform  
1,2-dichloroethane  
1,1,1-trichloroethane  
carbon tetrachloride  
dichlorobromomethane  
bis(chloromethyl) ether  
1,2-dichloropropane  
2-chloroethyl vinyl ether  
bromoform  
tetrachloroethylene  
1,1,2,2-tetrachloroethane  
chlorobenzene  
acrolein  
acrylonitrile  
trichloroethylene

chlorodibromomethane  
1,2-dichloropropylene  
bis(2-chloroethyl) ether  
1,2-dichlorobenzene  
1,3-dichlorobenzene  
1,4-dichlorobenzene  
hexachloroethane  
bis(2-chloroisopropyl) ether  
hexachlorobutadiene  
1,2,4-trichlorobenzene  
naphthalene  
hexachlorocyclopentadiene  
nitrobenzene  
bis(2-chloroethoxy)methane  
2-chloronaphthalene  
acenaphthylene  
acenaphthene  
isophorone  
fluorene  
2,4-dinitrotoluene  
2,6-dinitrotoluene  
1,2-diphenylhydrazine  
N-nitrosodiphenylamine  
hexachlorobenzene  
4-bromophenyl phenyl ether  
phenanthrene  
anthracene  
dimethyl phthalate  
diethyl phthalate  
fluoranthene  
pyrene  
di-n-butyl phthalate  
benzidine  
butyl benzyl phthalate  
chrysene  
bis(2-ethylhexyl)phthalate  
benzo(a)anthracene  
3,4-benzofluoranthene  
benzo(k)fluoranthene  
benzo(a)pyrene  
indeno(1,2,3-cd)pyrene  
dibenzo(a,h)anthracene  
benzo(g,h,i)perylene  
N-nitrosodimethylamine  
N-nitrosodi-n-propylamine  
4-chlorophenyl phenyl ether  
3,3'-dichlorobenzidine  
2,3,7,8-tetrachlorodibenzo-p-dioxin  
2-chlorophenol  
2,4-dichlorophenol  
2-nitrophenol  
parachlorometa cresol  
2,4,6-trichlorophenol  
2,4-dimethylphenol  
2,4-dinitrophenol  
4,6-dinitro-o-cresol  
4-nitrophenol  
pentachlorophenol  
aldrin  
dieldrin  
chlordan (technical mixture and metabolites)  
4,4'-DDT  
4,4'-DDE (p,p'-DDX)  
4,4'-DDD (p,p'-TDE)  
a-endosulfan-Alpha  
b-endosulfan-Beta  
endosulfan sulfate  
endrin aldehyde

heptachlor  
heptachlor epoxide  
a-BHC-Alpha  
b-BHC-Beta  
r-BHC(lindane)-Gamma  
g-BHC-Delta  
PCB-1242 (Arochlor 1242)  
PCB-1254 (Arochlor 1254)  
toxaphene

##### *Wood Preserving*

chloromethane  
dichlorodifluoromethane  
bromomethane  
vinyl chloride  
chloroethane  
methylene chloride  
trichlorofluoromethane  
1,1-dichloroethylene  
1,1-dichloroethane  
1,2;-trans-dichloroethylene  
1,2-dichloroethane  
1,1,1-trichloroethane  
carbon tetrachloride  
dichlorobromomethane  
bis-chloromethyl ether  
1,2-dichloropropane  
1,1,2-trichloroethane  
2-chloroethyl vinyl ether  
bromoform  
tetrachloroethylene  
1,1,2,2-tetrachloroethane  
chlorobenzene  
acrolein  
acrylonitrile  
trichlorethylene  
chlorodibromomethane  
1,2-dichloropropylene  
bis(2-chloroethyl)ether  
1,2-dichlorobenzene  
1,3-dichlorobenzene  
1,4-dichlorobenzene  
hexachloroethane  
bis(2-chloroisopropyl)ether  
hexachlorobutadiene  
1,2,4-trichlorobenzene  
hexachlorocyclopentadiene  
nitrobenzene  
bis(2-chloroethoxy)methane  
2-chloronaphthalene  
isophorone  
2,4-dinitrotoluene  
2,6-dinitrotoluene  
1,2-diphenylhydrazine  
N-nitrosodiphenylamine  
hexachlorobenzene  
4-bromophenyl phenyl ether  
dimethyl phthalate  
diethyl phthalate  
di-n-butyl phthalate  
benzidine  
butyl benzyl phthalate  
dibenzo(a,h)anthracene  
N-nitrosodimethylamine  
N-nitrosodi-n-propylamine  
4-chlorophenyl phenyl ether  
3,3'-dichlorobenzidine  
2,3,7,8-tetrachlorodibenzo-p-dioxin  
2,4-dichlorophenol

2-nitrophenol  
 parachlorometa cresol  
 2,4-dinitrophenol  
 4,6-dinitro-o-cresol  
 4-nitrophenol  
 aldrin  
 dieldrin  
 Chlordane (technical mixture and metabolites)  
 4,4'-DDT  
 4,4'-DDE (p,p'-DDX)  
 4,4'-DDD (p,p'-TDE)  
 a-endosulfan-Alpha  
 b-endosulfan-Beta  
 endosulfan sulfate  
 endrin aldehyde  
 Heptachlor  
 Heptachlor epoxide  
 a-BHC-Alpha  
 b-BHC-Beta  
 r-BH(lindane)-Gamma  
 g-BHC-Delta  
 PCB-1242 (Arochlor 1242)  
 PCB-1254 (Arochlor 1254)  
 toxaphene

**Appendix C—Toxic Pollutants Detected in Treated Effluents at Two Plants or Less**

*Wood Preserving*

chloroform  
 ethylbenzene  
 2-chlorophenol  
 2,4,6-trichlorophenol  
 2,4-dimethylphenol  
 beryllium

*Insulation Board and Hardboard*

benzene  
 toluene  
 phenol  
 beryllium

**Appendix D—Toxic Pollutants Detected in Treated Effluents at or Below the Nominal Limit of Detection (10 µg/l)**

*Insulation Board and Hardboard*

lead  
 arsenic  
 beryllium  
 antimony  
 cadmium  
 chromium  
 selenium  
 silver  
 thallium  
 mercury

*Wood Preserving*

benzene  
 chloroform  
 ethylbenzene  
 2-chlorophenol  
 2,4,6-trichlorophenol  
 lead  
 antimony  
 selenium  
 cadmium

silver  
 thallium  
 mercury  
 beryllium  
 Part 429 of Title 40 is revised to read as follows:

**PART 429—TIMBER PRODUCTS PROCESSING POINT SOURCE CATEGORY**

**General Provisions**

Sec.  
 429.10 Applicability.  
 429.11 General definitions.  
 429.12 Monitoring requirements [Reserved].

**Subpart A—Barking Subcategory**

429.20 Applicability; description of the barking subcategory.  
 429.21 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).  
 429.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]  
 429.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]  
 429.24 New source performance standards (NSPS).  
 429.25 Pretreatment standards for existing sources (PSES).  
 429.26 Pretreatment standards for new sources (PSNS).

**Subpart B—Veneer Subcategory**

Sec.  
 429.30 Applicability; description of the veneer subcategory.  
 429.31 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).  
 429.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]  
 429.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).  
 429.34 New source performance standards (NSPS).  
 429.35 Pretreatment standards for existing sources (PSES).  
 429.36 Pretreatment standards for new sources (PSNS).

**Subpart C—Plywood Subcategory**

429.40 Applicability; description of the plywood subcategory.  
 429.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

429.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]  
 429.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).  
 429.44 New source performance standards (NSPS).  
 429.45 Pretreatment standards for existing sources (PSES).  
 429.46 Pretreatment standards for new sources (PSNS).

**Subpart D—Dry Process Hardboard Subcategory**

429.50 Applicability; description of the dry process hardboard subcategory.  
 429.51 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).  
 429.52 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]  
 429.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).  
 429.54 New source performance standards (NSPS).  
 429.55 Pretreatment standards for existing sources (PSES).  
 429.56 Pretreatment standards for new sources (PSNS).

**Subpart E—Wet Process Hardboard Subcategory**

429.60 Applicability; description of the wet process hardboard subcategory.  
 429.61 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).  
 429.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).  
 429.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]  
 429.64 New source performance standards (NSPS).  
 429.65 Pretreatment standards for existing sources (PSES).  
 429.66 Pretreatment standards for new sources (PSNS).

**Subpart F—Wood Preserving—Water Borne or Nonpressure Subcategory**

429.70 Applicability; description of the wood preserving—water borne or nonpressure subcategory.  
 429.71 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable

control technology currently available (BPT).

- 429.72 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.73 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.74 New source performance standards (NSPS).
- 429.75 Pretreatment standards for existing sources (PSES).
- 429.76 Pretreatment standards for new sources (PSNS).

#### Subpart G—Wood Preserving—Steam Subcategory

- 429.80 Applicability; description of the wood preserving—steam subcategory.
- 429.81 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.82 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]
- 429.84 New source performance standards (NSPS).
- 249.85 Pretreatment standards for existing sources (PSES).
- 429.86 Pretreatment standards for new sources (PSNS).

#### Subpart H—Wood Preserving—Boulton Subcategory

- 429.90 Applicability; description of the wood preserving—Boulton subcategory.
- 429.91 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.94 New source performance standards (NSPS).
- 429.95 Pretreatment standards for existing sources (PSES).
- 429.96 Pretreatment standards for new sources (PSNS).

#### Subpart I—Wet Storage Subcategory

- 429.100 Applicability; description of the wet storage subcategory.
- 429.101 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable

control technology currently available (BPT).

- 429.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.104 New source performance standards (NSPS).
- 429.105 Pretreatment standards for existing sources (PSES).
- 429.106 Pretreatment standards for new sources (PSNS).

#### Subpart J—Log Washing Subcategory

- 429.110 Applicability; description of the log washing subcategory.
- 429.111 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.112 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.113 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.114 New source performance standards (NSPS).
- 429.115 Pretreatment standards for existing sources (PSES).
- 429.116 Pretreatment standards for new sources (PSNS).

#### Subpart K—Sawmills and Planing Mills Subcategory

- 429.120 Applicability; description of the sawmills and planing mills subcategory.
- 429.121 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.122 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.123 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.124 New source performance standards (NSPS).
- 429.125 Pretreatment standards for existing sources (PSES).
- 429.126 Pretreatment standards for new sources (PSNS).

#### Subpart L—Finishing Subcategory

- 429.130 Applicability; description of the finishing subcategory.
- 429.131 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable

control technology currently available (BPT).

- 429.132 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.133 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.134 New source performance standards (NSPS).
- 429.135 Pretreatment standards for existing sources (PSES).
- 429.136 Pretreatment standards for new sources (PSNS).

#### Subpart M—Particleboard Manufacturing Subcategory

- 429.140 Applicability; description of the particleboard manufacturing subcategory.
- 419.141 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.142 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.143 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.144 New source performance standards (NSPS).
- 429.145 Pretreatment standards for existing sources (PSES).
- 429.146 Pretreatment standards for new sources (PSNS).

#### Subpart N—Insulation Board Subcategory

- 429.150 Applicability; description of the insulation board subcategory.
- 429.151 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.152 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
- 429.153 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]
- 429.154 New source performance standards (NSPS).
- 429.155 Pretreatment standards for existing sources (PSES).
- 429.156 Pretreatment standards for new sources (PSNS).

#### Subpart O—Wood Furniture and Fixture Production Without Water Wash Spray Booth(s) or Without Laundry Facilities Subcategory

- 429.160 Applicability; description of the wood furniture and fixture production

without water wash spray booth(s) or without laundry facilities subcategory.

- 429.161 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.162 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.163 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.164 New source performance standards (NSPS).
- 429.165 Pretreatment standards for existing sources (PSES).
- 429.166 Pretreatment standards for new sources (PSNS).

**Subpart P—Wood Furniture and Fixture Production With Water Wash Spray Booth(s) or With Laundry Facilities Subcategory**

- 429.170 Applicability; description of the wood furniture and fixture production with water wash spray booth(s) or with laundry facilities subcategory.
- 429.171 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
- 429.172 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
- 429.173 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
- 429.174 New source performance standards (NSPS).
- 429.175 Pretreatment standards for existing sources (PSES).
- 429.176 Pretreatment standards for new sources (PSNS).

Authority: Sections 301, 304(b), (c), (e), and (g), 306(b) and (c), 307(a)(b) and (c) and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977) (the "Act"); 33 United States 1311, 1314(b), (c), (e), and (g), 1316(b) and (c), 1317(b) and (c), and 1361; 86 Stat. 815, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217.

**General Provisions**

**§ 429.10 Applicability.**

This part applies to any timber products processing operation, and any plant producing insulation board with wood as the major raw material, which discharges or may discharge process wastewater pollutants to the waters of the United States, or which introduces or may introduce process wastewater pollutants into a publicly owned treatment works.

**§ 429.11 General definitions.**

In addition to the definitions set forth in 40 CFR Part 401, the following definitions apply to this part:

(a) The term "hydraulic barking" means a wood processing operation that removes bark from wood by the use of water under a pressure of 6.8 atm (100 psia) or greater.

(b) The terms "cubic feet" or "cubic meters" of production in Subpart A means the cubic feet or cubic meters of logs from which bark is removed.

(c) The term "process wastewater" specifically excludes noncontact cooling water, material storage yard runoff (either raw material or processed wood storage) and boiler blowdown.

(d) The term "gross production of fiberboard products" means the air dry weight of hardboard or insulation board following formation of the mat and prior to trimming and finishing operations.

(e) The term "hardboard" means a panel manufactured from interfelted ligno-cellulosic fibers consolidated under heat and pressure to a density of 0.5 g/cu cm (31 lb/cu ft) or greater.

(f) The term "insulation board" means a panel manufactured from interfelted ligno-cellulosic fibers consolidated to a density of less than 0.5 g/cu cm (less than 31 lb/cu ft).

(g) The term "smooth-one-side (S1S) hardboard" means hardboard which is produced by the wet-matting, wet-pressing process.

(h) The term "smooth-two-sides (S2S) hardboard" means hardboard which is produced by the wet-matting, dry-pressing process.

(i) The term "debris" means woody material such as bark, twigs, branches, heartwood or sapwood that will not pass through a 2.54 cm (1.0 in) diameter round opening and is present in the discharge from a wet storage facility.

(j) For the subcategories for which numerical limitations are given, the daily maximum limitation is a value that should not be exceeded by any one effluent measurement. The 30-day limitation is a value that should not be exceeded by the average of daily measurements taken during any 30-day period.

**§ 429.12 Monitoring requirements [Reserved].**

**Subpart A—Barking Subcategory**

**§ 429.20 Applicability; description of the barking subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the barking of logs by plants in SIC major group 24, and by plants

producing insulation board (SIC group 2661).

**§ 429.21 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The following limitations apply to all mechanical barking installations: There shall be no discharge of process wastewater pollutants into navigable waters.

(b) The following limitations constitute the maximum permissible discharge for hydraulic barking installations:

**Subpart A**

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Metric units (kilograms per cubic meter of production)	
BOD <sub>5</sub> .....	1.5	0.5
TSS.....	6.9	2.3
pH.....	( <sup>1</sup> )	( <sup>1</sup> )
	English units (pounds per cubic foot of production)	
BOD <sub>5</sub> .....	0.09	0.03
TSS.....	0.431	0.144
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]**

**§ 429.24 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

(a) The following limitations apply to all mechanical barking installations: There shall be no discharge of process wastewater pollutants into navigable waters.

(b) The following limitations constitute the maximum permissible discharge for hydraulic barking installations:

**Subpart A**

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Metric units (kilograms per cubic meter of production)	
BOD5.....	1.5	0.5
TSS.....	6.9	2.3
pH.....	( <sup>1</sup> )	( <sup>1</sup> )
	English units (pounds per cubic foot of production)	
BOD5.....	0.09	0.03
TSS.....	0.431	0.144
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.25 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.26 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart B—Veneer Subcategory**

**§ 429.30 Applicability; description of the veneer subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from any plant which manufactures veneer and does not store or hold raw materials in wet storage conditions.

**§ 429.31 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT):

(a) The following limitations constitute the maximum permissible discharge for all veneer manufacturing installations other than those referred to in paragraph (b) and (c) of this section: There shall be no discharge of process wastewater pollutants into navigable waters.

(b) The following limitations constitute the maximum permissible discharge for softwood veneer manufacturing processes which use direct steaming for the conditioning of logs:

**Subpart B**

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of production)	
BOD5.....	0.72	0.24
pH.....	( <sup>1</sup> )	( <sup>1</sup> )
	English units (pounds per cubic foot of production)	
BOD5.....	0.045	0.015
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

(c) The following limitations constitute the maximum permissible discharge for hardwood veneer manufacturing processes which use direct steaming for the conditioning of logs:

**Subpart B**

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of production)	
BOD5.....	1.62	0.54
pH.....	( <sup>1</sup> )	( <sup>1</sup> )
	English units (pounds per cubic foot of production)	
BOD5.....	0.10	0.034
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.34 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.35 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.36 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart C—Plywood Subcategory**

**§ 429.40 Applicability; description of the plywood subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from any plywood producing plant that does not store or hold raw materials in wet storage conditions.

**§ 429.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of

process wastewater pollutants into navigable waters.

**§ 429.44 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.45 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.46 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart D—Dry Process Hardboard Subcategory**

**§ 429.50 Applicability; description of the dry process hardboard subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from any plant that produces hardboard using the dry matting process for forming the board mat.

**§ 429.51 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.52 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to

this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.54 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.55 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.56 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart E—Wet Process Hardboard Subcategory**

**§ 429.60 Applicability; description of the wet process hardboard subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from any plant which produces hardboard products using the wet matting process for forming the board mat.

**§ 429.61 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The following limitations apply to plants which produce smooth-one-side (S1S) hardboard:

**Subpart E (S1S)**

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	(kg/kg (lb/1000 lb) of gross production)	
BOD <sub>5</sub> .....	20.5	10.7
TSS.....	37.3	24.6
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

(b) The following limitations apply to plants which produce smooth-two-sides (S2S) hardboard:

**Subpart E (S2S)**

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	(kg/kg (lb/1000 lb) of gross production)	
BOD <sub>5</sub> .....	32.9	21.4
TSS.....	54.2	37.1
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

(a) The following limitations apply to plants which produce smooth-one-side (S1S) hardboard:

**Subpart E (S1S)**

Pollutant or pollutant property	BCT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	(kg/kg (lb/1000 lb) of gross production)	
BOD <sub>5</sub> .....	3.83	2.51
TSS.....	10.9	7.04
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

(b) The following limitations apply to plants which produce smooth-two-sides (S2S) hardboard:

**Subpart E (S2S)**

Pollutant or pollutant property	BCT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	(kg/kkg (lb/1000 lb) of gross production)	
BOD <sub>5</sub> .....	13.2	8.62
TSS.....	13.9	9.52
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]**

**§ 429.64 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.65 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.66 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart F—Wood Preserving—Water Borne or Nonpressure Subcategory**

**§ 429.70 Applicability; description of the wood preserving—water borne or nonpressure subcategory.**

This subpart applies to discharges and to the introduction of process wastewater pollutants into publicly owned treatment works from all nonpressure wood preserving treatment processes and all pressure wood preserving treatment processes employing water borne inorganic salts.

**§ 429.71 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of reduction attainable by the application of the best practicable

control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.72 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.73 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.74 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.75 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES): There shall be no introduction of process wastewater pollutants into publicly owned treatment works.

**§ 429.76 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS): There shall be no introduction of process wastewater pollutants into publicly owned treatment works.

**Subpart G—Wood Preserving Steam Subcategory**

**§ 429.80 Applicability; description of the wood preserving—steam subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from wood preserving processes

that use direct steam impingement on wood as the predominant conditioning method; processes that use the vapor drying process as the predominant conditioning method; direct steam conditioning processes which use the same retort to treat with both salt and oil type preservatives; and steam conditioning processes which apply both salt type and oil type preservatives to the same stock.

**§ 429.81 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

**Subpart G**

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	English units (lb/1000 cubic feet of product)	
COD.....	68.5	34.5
Phenols.....	.14	.04
Oil and Grease.....	1.5	.75
pH.....	( <sup>1</sup> )	( <sup>1</sup> )
	Metric units (kg/1000 cu m of product)	
COD.....	1,100	550
Phenols.....	2.18	.65
Oil and Grease.....	24.0	12.0
pH.....	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range of 6.0 to 9.0 at all times.

**§ 429.82 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]**

**§ 429.84 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.85 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and meet the following pretreatment standards for existing sources (PSES):

**Subpart G**

[PSES Effluent Limitations]

Pollutant or pollutant property	Maximum for any 1 day (mg/l)
Oil and grease .....	100
Copper .....	5
Chromium .....	4
Arsenic .....	4

In cases where POTWs find it necessary to impose mass limitations, the following equivalent mass limitations are provided as guidance.

Pollutant or pollutant property	Maximum for any 1 day
	Grams per cubic meter of production
Oil and grease .....	20.5
Copper .....	.62
Chromium .....	.41
Arsenic .....	.41

**§ 429.86 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS): There shall be no introduction of process wastewater pollutants into publicly owned treatment works.

**Subpart H—Wood Preserving—Boulton Subcategory**

**§ 429.90 Applicability; description of the wood preserving—Boulton subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into a publicly owned treatment works from wood preserving operations which use the Boulton process as the predominant method of conditioning stock.

**§ 429.91 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.94 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.95 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and meet the following pretreatment standards for existing sources (PSES):

**Subpart H**

[PSES Effluent Limitations]

Pollutant or pollutant property	Maximum for any 1 day (mg/l)
Oil and grease .....	100
Copper .....	5
Chromium .....	4
Arsenic .....	4

In cases where POTWs find it necessary to impose mass limitations, the following equivalent mass limitations are provided as guidance.

**Subpart H**

[PSES Effluent Limitations]

Pollutant or pollutant property	Maximum for any 1 day
Oil and grease .....	20.5
Copper .....	.62
Chromium .....	.41
Arsenic .....	.41

**§ 429.96 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS): There shall be no introduction of process wastewater pollutants into publicly owned treatment works.

**Subpart I—Wet Storage Subcategory**

**§ 429.100 Applicability; description of the wet storage subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the storage of unprocessed wood, i.e., the storage of logs or roundwood before or after removal of bark in self-contained bodies of water (mill ponds or log ponds) or the storage of logs or roundwood on land during which water is sprayed or deposited intentionally on the logs (wet decking).

**§ 429.101 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent reduction attainable by the application of the best practicable control technology currently available (BPT): There shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0



**§ 429.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**  
[Reserved]

**§ 429.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0.

**§ 429.104 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0.

**§ 429.105 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.106 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

#### **Subpart J—Log Washing Subcategory**

**§ 429.110 Applicability; description of the log washing subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the log washing process in which water under pressure is applied to logs for the purpose of removing foreign material from the surface of the log before further processing.

**§ 429.111 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently

available (BPT): There shall be no discharge of process wastewater pollutants to navigable waters containing a total suspended solids concentration greater than 50 mg/l and the pH shall be within the range of 6.0 to 9.0.

**§ 429.112 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**  
[Reserved]

**§ 429.113 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.114 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.115 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.116 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

#### **Subpart K—Sawmills and Planing Mills Subcategory**

**§ 429.120 Applicability; description of the sawmills and planing mills subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the timber products processing procedures that include all or part of the following operations: bark removal (other than hydraulic barking as defined in section 429.11 of this part), sawing, resawing, edging, trimming, planing and machining.

**§ 429.121 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.122 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**  
[Reserved]

**§ 429.123 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.124 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.125 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.126 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

#### **Subpart L—Finishing Subcategory**

**§ 429.130 Applicability; description of the finishing subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the drying, planing, dipping, staining, end coating, moisture proofing,

fabrication, and by-product utilization timber processing operations not otherwise covered by specific guidelines and standards.

**§ 429.131 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.132 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.133 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subject must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable. (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.134 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.135 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.136 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart M—Particleboard Manufacturing Subcategory**

**§ 429.140 Applicability; description of the particleboard manufacturing subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from any plant which manufactures particleboard.

**§ 429.141 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.142 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

**§ 429.143 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.144 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.145 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.146 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduce process wastewater pollutants into a publicly

owned treatment works must comply with 40 CFR Part 403.

**Subpart N—Insulation Board Subcategory**

**§ 429.150 Applicability; description of the insulation board subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from plants which produce insulation board using wood as the primary raw material. Specifically excluded from this subpart is the manufacture of insulation board from the primary raw material bagasse.

**§ 429.151 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

**Subpart N**

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kg (lb/1000 lb of gross production)	
BOD <sub>5</sub> .....	8.13	4.32
TSS.....	5.69	2.72
pH.....	(1)	

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.152 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

**Subpart N**

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kg (lb/1000 lb of gross production)	
BOD <sub>5</sub> .....	8.13	4.32

## Subpart N—Continued

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
TSS.....	5.69	2.72
pH.....		(1)

<sup>1</sup> Within the range 6.0 to 9.0 at all times.

**§ 429.153 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]**

**§ 429.154 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.155 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.156 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart O—Wood Furniture and Fixture Production Without Water Wash Spray Booth(s) or Without Laundry Facilities Subcategory**

**§ 429.160 Applicability; description of the wood furniture and fixture production without water wash spray booth(s) or without laundry facilities subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the manufacture of wood furniture and fixtures at establishments that (a) do not utilize water wash spray booths to collect and contain the overspray from spray applications of finishing materials and (b) do not maintain on-site laundry facilities for fabric utilized in various finishing operations.

**§ 429.161 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology limitations (BPT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.162 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [RESERVED]**

**§ 429.163 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.164 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

There shall be no discharge of process wastewater pollutants into navigable waters.

**§ 429.165 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**§ 429.166 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

**Subpart P—Wood Furniture and Fixture Production With Water Wash Spray Booth(s) or With Laundry Facilities Subcategory**

**§ 429.170 Applicability; description of the wood furniture and fixture production with water wash spray booth(s) or with laundry facilities subcategory.**

This subpart applies to discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the manufacture of wood furniture and fixtures at establishments that either (a) utilize water wash spray booth(s) to collect and contain the overspray from spray applications of finishing materials, or (b) utilize on-site laundry facilities for fabric utilized in various finishing operations.

**§ 429.171 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT): Settleable solids shall be less than or equal to 0.2 ml/l and pH shall be between 6.0 and 9.0 at all times.

**§ 429.172 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [RESERVED]**

**§ 429.173 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30-.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT): There shall be no discharge of process wastewater pollutants.

**§ 429.174 New source performance standards (NSPS).**

Any new source subject to this subpart must achieve the following new source performance standards (NSPS): There shall be no discharge of process wastewater pollutants.

**§ 429.175 Pretreatment standards for existing sources (PSES).**

Any existing source subject to this subpart which introduces process wastewater pollutants into a publicly

owned treatment works must comply with 40 CFR Part 403.

**§ 429.176 Pretreatment standards for new sources (PSNS).**

Any new source subject to this subpart which introduces process wastewater pollutants into a publicly owned treatment works must comply with 40 CFR Part 403.

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