ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 405, 406, 407, 408, 409, 411, 412, 415, 422, 424, 426, 429, 430, 431, 432, 433, and 440

[WH-FRL-2150-4]

Best Conventional Pollutant Control Technology; Effluent Limitation Guidelines

AGENCY: Environmental Protection Agency.

ACTION: Proposed rules.

SUMMARY: EPA proposes new and revised effluent limitation guidelines for best conventional pollutant control technology (BCT) under the Clean Water Act and a revised BCT methodology. The proposed rules cover the Dairy, Grain Milling, Fruits and Vegetables, Seafood, Sugar, Feedlots, Ferroalloys, Glass, Meat, Phosphate, Timber, Inorganic Chemicals, Ore Mining and Dressing, Metal Finishing, and Pulp, Paper, and Paperboard industries. They are based on a revised approach to the BCT methodology developed in response to judicial and agency review of the BCT methodology promulgated in August, 1979.

DATE: Comments must be submitted on or before December 28, 1982.

ADDRESSES: Send comments in triplicate on the proposal to: Ms. Renee Rico, U.S. Environmental Protection Agency, 401 M Street, S.W. (WH-586), Washington, D.C. 20460.

The Record, including copies of the development documents and economic analyses, will be available for public review in EPA's Public Information Reference Unit, Room 2404 (Rear), EPA library, 401 M St., S.W., Washington, D.C. 20460. The EPA information regulation (40 CFR Part 2) allows the Agency to charge a reasonable fee for copying.

FOR FURTHER INFORMATION CONTACT: Ms. Renee Rico, U.S. Environmental Protection Agency, Office of Analysis and Evaluation (WH-586), 401 M Street, S.W., Washington, D.C. 20460, (202) 382-5386.

SUPPLEMENTARY INFORMATION:

I. Background

A. Statutory Authority

In 1977, Congress amended the Clean Water Act (CWA) to include section 304(b)(4)(B), 33 U.S.C. 1314(b)(4)(B). This provision requires EPA to establish best conventional pollutant control technology (BCT) effluent limitations to be determined by an analysis of:

The reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived, and the comparison of the cost and level of reduction of such pollutants from the discharge of publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources.

The Act also specifies that in making BCT determinations consideration be given to the age of equipment, production process, energy requirements, and other appropriate factors.

BCT is not an additional effluent limitation for industrial dischargers, but rather replaces "best available technology economically achievable" (BAT) effluent limitations for the control of conventional pollutants. Effluent limitations representing BCT may not be less stringent than limitations representing "best practicable control technology currently available" (BPT). Conventional pollutants can be controlled to more stringent levels than BCT for dischargers in areas where water quality considerations necessitate additional control.

Section 304(a)(4) of the Act specifies that conventional pollutants include, but are not limited to, biochemical oxygen demanding materials (BOD_5), total suspended solids (TSS), fecal coliform, and pH. The Agency has also designated oil and grease as a conventional pollutant (44 FR 44501, July 30, 1979).

B. Previous Regulations

Under Section 73 of the 1977 CWA, EPA was directed to review all existing BAT effluent guidelines for conventional pollutants in those industries not covered in the Settlement Agreement reached in *National Resources Defense Council* v. *Train*, 8 ERC 2120 (D.D.C. 1976), as modifed 12 ERC 1833 (D.D.C. 1979), and to determine their suitability as BCT limitations. These industries are often referred to as "secondary industries." On August 29, 1979, EPA published its BCT methodology and promulgated BCT limitations for 41 subcategories of the secondary industries (44 FR 50732). However, EPA did not have sufficient information at that time to establish BCT limitations for all the secondary industries and therefore deferred regulation of some of them.

In developing the methodology for the 1979 regulation, EPA was guided both by the statutory language of Section 304(b)(4)(B) and by Congress' underlying objectives in establishing BCT. Congress was concerned that requirements for the control of conventional pollutants beyond BPT were unreasonably expensive in some cases. Accordingly, Congress required that a special "cost reasonableness comparison" be applied before establishing BCT limitations at a level more stringent than BPT. The core of the Agency's BCT methodology was a comparison of the costs of removing additional pounds of conventional pollutants for industry with comparable costs of removal for an average-sized publicly owned treatment works (POTW).

C. BCT Court Suit

The 1979 regulations were challenged in the U.S. Court of Appeals for the Fourth Circuit. On July 28, 1981, the Court issued its decision, upholding the methodology EPA had developed for the POTW cost-comparison test. American Paper Institute v. EPA, 660 F2d 954 (4th Cir. 1981). However, since EPA had recently informed the Court that significant statistical errors had been found in its calculation of the POTW test, the Court directed the Agency to correct the errors.

The Court also held that the CWA requires EPA to consider two "reasonableness" tests as part of the BCT methodology: an industry cost-effectiveness test and a POTW cost comparison test. Because EPA had only developed the latter test, the Court remanded the regulations and ordered EPA to develop and implement an industry cost-effectiveness test that compares the industry's costs of attaining a reduction in effluents with the effluent reduction benefits derived.

As a result of the remand, EPA withdrew many of the 1979 regulations, as well as the BCT limitations for the Timber category. (47 FR 6835, February 17, 1982.) Since BPT represents the minimal level of control required by law for conventional pollutants, those BCT limitations which equalled BPT were left in effect. Those BCT regulations which required a higher level of control than BPT were withdrawn.

D. Purpose of This Proposal

This rulemaking serves several purposes. First, in response to the court remand, EPA has developed an industry cost-effectiveness test and corrected the statistical errors in its prior calculation of the POTW test.

Second, EPA has generally reevaluated the BCT methodology in response to a March 15, 1981 directive from the Presidential Task Force on Regulatory Relief and comments by the Council on Wage and Price Stability. Based on this review, EPA has determined that the POTW cost-comparison methodology promulgated in

1979 and upheld by the Court of Appeals is still the preferred approach, with the exception of one change proposed today.

Finally, EPA is required to apply the BCT methodology to establish BCT limitations for both the primary industries (those covered by the NRDC Consent Decree) and the secondary industries. Today's proposal, if promulgated, would replace the BCT limits withdrawn on February 17, 1982, and establish BCT limits for some of the secondary industries that were not included in the 1979 regulations. Second, EPA is reproposing BCT limitations for the Pulp, Paper and Paperboard, Inorganic Chemicals, Metal Finishing, and Timber industries since the original BCT limitations for these industries were proposed or promulgated using the BCT methodology remanded by the Court. Therefore, today's proposal supersedes BCT limitations proposed on January 6, 1981 for Pulp, Paper and Paperboard (46 FR 1430), July 24, 1980 for Inorganic Chemicals (44 FR 49450), and June 14, 1982 for Ore Mining and Dressing (47 FR 25682). It would also replace the BCT limitations that were withdrawn for Timber (46 FR 3260). EPA is also reproposing BCT limitations for the Ore Mining and Dressing category since BCT limitations were erroneously proposed.

These proposed limitations apply to BOD_5, TSS, fecal coliform, pH, and oil and grease. Since all of the BAT pH limitations were set at BPT levels, no BDT assessment was carried out for pH. If at any time pollutants are added or deleted from the conventional pollutant list, the Agency plans to reevaluate all effluent guidelines affected by such revisions.

EPA intends to use today's methodology to evaluate conventional pollutant treatment requirements for the remaining primary industries. These BCT limitations will be proposed and promulgated where possible along with BAT, pretreatment, and new source standards. Calculations for applying the BCT methodology for each industry will be explained when each regulation is proposed. Because the methodology proposed today will be used in all effluent guidelines, this notice is intended to provide the opportunity for all industries to submit comments on the methodology now.

E. Summary of Proposal

EPA proposes to use the methodology contained in this notice to determine the cost-reasonableness of all BCT technology options. The methodology consists of two parts: a POTW test and an industry cost-effectiveness test. The POTW test is passed if the incremental cost per pound of conventional pollutant removed in going from BPT to BCT is less than $.27 per pound in 1976 dollars. The industry test is passed if this same incremental cost per pound is less than 143% of the incremental cost per pound associated with achieving BPT. Both tests must be passed for a BCT limitation more stringent than BPT to be established.

EPA applied this methodology to the categories included in today's proposal. If the BAT limits that were promulgated for a secondary industry pass the BCT reasonableness test, BCT is established equal to BAT. If either test is failed, BCT is established equal to BPT.

In those subcategories for which BAT or BCT limitations were never promulgated, or were being reevaluated on technical grounds, the Agency considered several candidate technologies for BCT. These candidate technologies are those that remove significant amounts of conventional pollutants beyond BPT. In evaluating their reasonableness, EPA used BPT as a starting point and determined the incremental costs and levels of pollutant removal from BPT to each of the candidate technologies. The selection of the final BCT limitations is based on the most stringent technology option which passes the reasonableness tests, as well as the other factors specified in the Act.

The Agency has determined that establishing the BAT level of control of conventional pollutants as BCT for the secondary industries is reasonable for the following 8 of the 96 subcategories reviewed: Pacific Coast Hand-Shucked Oyster (408.257), Atlantic and Gulf Coast Hand-Shucked Oyster (408.267), Non-Alaskan Scallop (408.307), Abalone (408.337), Sodium Phosphates (422.67), Slag Processing (424.37), Small Processor (432.57), and Renderers (432.107).

EPA also determined that BCT limitations more stringent than BPT are reasonable for the following 4 subcategories in the pulp, paper, and paperboard and timber industries: Wet Process Hardboard (429.62), Papergrade Sulfite-Blow Pit Wash (430.103), Groundwood-Thermo Mechanical (430.133), and Papergrade Sulfite Drum Wash (430.213). BCT equals BPT for the remaining subcategories in the pulp and paper and timber industries, as well as for the ore mining, metal finishing and inorganic chemicals industries.

All the subcategories reviewed appear in Table I. This table summarizes the current status of each point source subcategory, the results of the BCT review, and whether BCT is set equal to or more stringent than BPT limitations. The columns and their entries are defined as follows.

1. *Industry/Subcategory:* Each industrial point source subcategory in the primary and secondary industries is listed in the table. The chart and the discussions in Section III include those subcategories for which BCT limitations equal to BPT have already been established. They are included for informational purposes only.

2. *Size:* EPA performed many of the BCT industrial calculation using model plants. Where more than one model plant was used, the size designations are listed for small, medium, and large dischargers.

3. *CFR Part:* The CFR Part and section number are included for additional identification of the subcategory. Where no BCT section exists, the proposed section number for the subcategory is used.

4. *Current Status:* A number of terms that are explained below are used to define the rulemaking status of a particular subcategory prior to today's proposal. For further information, refer to the Application of BCT Methodology (Section III).

a. *Removed:* The BCT limitations for the subcategory were withdrawn in response to the Court Remand of July 1981 (47 FR 6835, February 17, 1982).

b. *pH Limit:* The BCT limitation for the subcategory contains only a limitation for pH that equals the BPT limitations.

c. *BPT=BCT:* EPA has already promulgated BCT limitations that are equal to BPT. EPA did not perform a BCT review of these subcategories in today's proposal.

d. *No section:* No BCT limitations were ever promulgated for this subcategory, and no current section number exists in the CFR.

e. *BCT Reserved:* The CFR section for this subcategory was reserved for future BCT effluent guideline rulemaking.

f. *BCT Proposed:* EPA previously proposed BCT limitations for this subcategory based on the 1979 methodology.

5. *BCT Methodology:* This column describes the results of applying the proposed BCT methodology. It indicates whether any candidate technology passes the BCT tests and whether therefore, BCT is proposed equal to or a more stringent level than BPT.

6. *Other:* EPA reviewed the technology basis and economic impact of candidate BCT technologies if new information became available. Where these factors caused the Agency to reject the technologies, the column entries are marked *Fail.* See the

discussion of each industry in Section III for more information.

7. *BCT Limitations:* This heading contains two columns. For those subcategories where EPA has determined that the candidate BCT technologies are not reasonable and is setting BCT limitations equal to BPT, an X appears in the column BCT=BPT. Where the Agency has determined that they are reasonable and is setting BCT limitations more stringent than BPT, an X appears in the column BCT>BPT.

TABLE I

Industry and subcategory	Size	CFR Part	Current status	BCT methodology		Other	BCT limits	
				POTW test	Industry test		Pass (>BPT)	Fail (= BPT)
DAIRY PRODUCTS PROCESSING								
Receiving Stations	S, L	405.17	Removed			Fail		X.
Fluid Products	S, L	405.27	Removed			Fail		X (S, L).
Cultured Products	S, L	405.37	Removed			Fail		X (S, L).
Butter	S, L	405.47	Removed			Fail		X (S, L)
Cottage Cheese Cultured Cream Cheese	S, L	405.57	Removed			Fail		X.
Natural, Processed Cheese	S, L	405.67	Removed			Fail		X.
Fluid Mix for Ice Cream and Other Frozen Desserts	S, L	405.77	Removed			Fail		X.
Ice Cream, Frozen Desserts	S, L	405.87	Removed			Fail		X.
Condensed Milk	S, L	405.97	Removed			Fail		X.
Dry Milk	S, L	405.107	Removed			Fail		X.
Condensed Whey	S, L	405.117	pH Limit			Fail		X.
Dry Whey	S, L	405.127	Removed			Fail		X.
GRAIN MILLS								
Corn Wet Milling	S, M, L	406.17	Removed		Reserved			
Corn Dry Milling	S, L	406.27	Removed					X.
Normal Wheat Flour Milling		406.37	BPT-BCT					
Bulgar Wheat Flour Milling		406.47	pH Limits	Fail				X.
Normal Rice Milling		406.57	BPT-BCT					
Parboiled Rice Processing		406.67	Removed	Fail				X.
Animal Feed		406.77	BPT-BCT					
Hot Cereal		406.87	BPT-BCT					
Ready-To-Eat-Cereal	S, M, L	406.97	Removed	Fail				X.
Wheat Starch and Gluten		406.107	Removed	Pass	Fail			
CANNED AND PRESERVED FRUITS AND VEGETABLES								
Apple Juice	S, L	407.17	Removed	Fail				X (S, L).
Apple Products	S, L	407.27	Removed	Fail				X (S, L).
Citrus Products	S, L	407.37	Removed	Fail(S)				X (S, L).
				Pass(L)	Fail (L)			
Frozen Potato Products	S, L	407.47	pH Limit	Pass (S, L)	Fail (S, L)			X (S, L).
Dehydrated Potatoes Products	S, L	407.57	Removed	Pass (S, L)	Fail (S, L)			X (S, L).
Canned and Preserved Fruits		407.67	No section	Fail				X.
Canned and Preserved Vegetables		407.77	No section	Fail		Fail		X.
Canned and Miscellaneous Specialities		407.87	No section	Fail				X.
CANNED AND PRESERVED SEAFOOD PROCESSING								
Farm-Raised Catfish Processing	S, M, L	408.17	No section	Fail				X.
Conventional Blue Crab Processing	S, M, L	408.27	No section			Fail		X.
Mechanized Blue Crab Processing	S, M, L	408.37	No Section			Fail		X.
Non-Remote Alaskan Crab Meat Processing		408.47	No section			Fail		X.
Remote Alaskan Crab Meat		408.57	No section			Fail		X.
Non-Remote Alaskan Whole Crab and Crab Section Processing.		408.67	No section			Fail		X.
Remote Alaskan Whole Crab and Crab Section Processing	S, M, L	408.77	No section	No section		Fail		X.
Dungeness and Tanner Crab Processing in the contiguous States.		408.87				Fail		X.
Non-Remote Alaskan Shrimp Processing	S, M, L	408.97	No section					X.
Remote Alaskan Shrimp Processing	S, M, L	408.107	No section			Fail		
Northern Shrimp Processing in the Contiguous States	S, M, L	408.117	No section			Fail		X.
Southern Non-Breaded Shrimp Processing in the Contiguous States.	S, M, L	408.127	No section			Fail		X.
Breaded Shrimp Processing in the Contiguous States	S, M, L	408.137	No section			Fail		X.
Tuna Processing	S, M, L	408.147	No section			Fail		X.
Fish Meal Processing		408.157	No section	Fail				X.
Alaskan Hand-Butchered Salmon Processing		408.167						
—Remote			No section			Fail		X.
—Non-Remote			No section			Reserved		
Alaskan Mechanized Salmon Processing		408.177						
—Remote			No section			Fail		X.
—Non-Remote			No section			Fail		X.
West Coast Hand-Butchered Salmon Processing	S, L	408.187	No section	Fail				X.
West Coast Mechanized Salmon Processing	S, L	408.197	No section			Fail		X.
Alaskan Bottom Fish Processing		408.207						
—Remote			No section			Fail		X.
—Non-Remote			No section			Reserved		
Non-Alaskan Conventional Bottom Fish Processing	S, M, L	408.217	No section			Fail		X (S, M, L).
Non-Alaskan Mechanical Botton Fish Processing	S, L	408.227	No section	Fail (S) Pass (M, L).		Fail (S, M, L)		X.
Hand-Shucked Clam Processing		408.237	No section			Fail		X.
Mechanized Clam Processing	S, L	408.247	No section			Fail		X.
Pacific Coast Hand-Shucked Oyster Processing		408.257	No section	Pass	NA		X	
Atlantic and Gulf Coast Hand-Shucked Oyster Processing		408.267	No section	Pass	NA		X	
Steamed and Canned Oyster Processing		408.277	No section			Fail		X.
Sardine Processing	S, M, L	408.287	No section	Fail				
Alaskan Scallop Processing		408.297						
—Remote			No section			Fail		X.
—Non-Remote			No section			Fail		X.
Non-Alaskan Scallop Processing		408.307	No section	Pass	NA		X	

TABLE I—Continued

Industry and subcategory	Size	CFR Part	Current status	BCT methodology		Other	BCT limits	
				POTW test	Industry test		Pass (>BPT)	Fail (=BPT)
Alaskan Herring Filet Processing		408.317						
—Remote			No section			Fail		X.
—Non-Remote			No section			Reserved		
Non-Alaskan Herring Filet Processing		408.327	No section			Fail		X.
Abalone Processing		408.337	No section	Pass	NA	Fail	X	
SUGAR PROCESSING								
Beet Sugar Processing		409.17	pH Limit	Pass	Fail			X.
Crystalline Cane Sugar Refining	S, L	409.27	pH limit	Fail				X.
Liquid Cane Sugar Refining		409.37	pH limit	Fail				X.
Louisiana Raw Cane Sugar Processing		409.47	No section					X.
Florida and Texas Raw Cane Sugar Processing		409.57	No section					X.
Hilo-Hamakua Coast of the Island of Hawaii Raw Cane Sugar Processing.		409.67	No section					X.
Hawaiian Raw Cane Sugar Processing Subcategory		409.77	No section					X.
Puerto Rican Raw Cane Sugar Processing		409.87	No section					X.
CEMENT MANUFACTURING								
Nonleaching		411.17	BPT=BCT					
Leaching		411.27	pH limit	Fail				X.
Material Storage		411.37	BPT=BCT					
FEEDLOTS								
All Subcategories except Ducks		412.17	BPT=BCT					
Ducks		412.27	No section			Reserved		
INORGANIC CHEMICALS MANUFACTURINGR								
Chlor-Alkali—Mercury Cell		415.67(a)	BPT=BCT					
—Diaphragm Cell		415.67(b)	Reserved	Fail				X.
Hydrofluoric Acid		415.87	Reserved	Fail				X.
Sodium Dichromate and Sodium Sulfate		415.177	BPT=BCT					
Titanium Dioxide		415.227	BPT=BCT					
Aluminum Fluoride		415.237	BPT=BCT					
Chrome Pigments		415.347	BPT=BCT					
Copper Sulfate		415.367	BPT=BCT					
Hydrogen Cyanide		415.427	BPT=BCT					
Nickel Sulfate		415.477	BPT=BCT					
Sodium Bisulfite		415.547	BPT=BCT					
PHOSPHATES								
Defluorinated Phosphate Rock		422.47	BPT=BCT					
Defluorinated Phosphoric Acid		422.57	BPT=BCT					
Sodium Phosphates	XS, S, M, L	422.67	Removed	Pass	Pass		X	
FERROALLOY MANUFACTURING								
Open Electric Furnaces, Wet		424.17	Removed	Fail				X.
Covered Electric Furnaces and Other Smelting Operations		424.27	Removed	Fail				X.
Slag Processing		424.37	Removed	Pass	Pass		X	
Covered Calcium Carbide Furnaces, Wet		424.47	pH limit	Fail				X.
Other Calcium Carbide Furnaces		424.57	BCT=BPT					
Electrolytic Manganese		424.67	pH limit	Fail				X.
Electrolytic Chromium		424.77	pH limit	Fail				X.
GLASS MANUFACTURING								
Insulation Fiberglass		426.17	Removed			Fail		X.
Sheet Glass		426.27	BPT=BCT					
Rolled Glass		426.37	BPT=BCT					
Plate Glass		426.47	Removed	Fail				X.
Float Glass		426.57	pH limit	Fail				X.
Automotive Glass Tempering		426.67	pH limit	Fail				X.
Automotive Glass Laminating		426.77	pH limit	Fail				X.
Glass Container Manufacturing		426.87	pH limit	Fail				X.
Glass Tubing (Danner) Manufacturing		426.107	pH limit	Fail				X.
Television Picture Tube		426.117	pH limit	Fail				X.
Incandescent Lamp		426.127	pH limit	Fail				X.
Hand Pressed and Blown Glass		426.137	pH limit	Fail				X.
TIMBER PRODUCTS								
Barking		429.22(a)	Reserved			Fail		
		429.22(b)	Reserved			Reserved		
Veneer		429.32	Reserved			Fail		X.
Plywood		429.42	Reserved			Fail		X.
Dry Process Hardboard		429.52	Reserved			Fail		X.
Wet Process Hardboard		429.62	Removed	Pass	Pass		X	
Wood Preserving—Waterborne Nonpressure		429.72	Reserved			Fail		X.
Wood Preserving—Steam		429.82	Reserved			Reserved		
Wood Preserving—Boulton		429.92	Reserved			Fail		X.
Wet Storage		429.102	Reserved			Fail		X.
Log Washing		429.112	Reserved			Reserved		
Sawmills and Planning Mills		429.122	Reserved			Fail		X.
Finishing		429.132	Reserved			Fail		X.
Particleboard Mftg.		429.142	Reserved			Fail		X.
Insulation Board		429.152	Removed	Fail				X.
Wood Furniture and Fixture Production w/o Water Wash Spray Booth.		429.162	Reserved			Fail		X.
Wood Furniture and Fixture Production w/Water Wash Spray Booth.		429.172	Reserved			Reserved		
PULP, PAPER AND PAPERBOARD								
Unbleached Kraft		430.13	BCT proposed	Fail				X.
Sodium Based—Neutral Sulfite Semi-Chemical		430.23	Reserved	NA				

TABLE I—Continued

Industry and subcategory	Size	CFR Part	Current status	BCT methodology		Other	BCT limits	
				POTW test	Industry test		Pass (>BPT)	Fail (=BPT)
Ammonia Base Neutral Sulfite Semi-Chemical		430.33	Reserved	NA				
Unbleached Kraft and Neutral Sulfite Semi-Chemical (Cross Recovery).		430.43	Reserved	NA				
Paperboard from Wastepaper		430.53	BCT proposed	Fail				X.
Dissolving Kraft		430.63	BCT proposed	Fail				X.
Market Bleached Kraft		430.73	BCT proposed	Fail				X.
BCT Bleached Kraft		430.83	BCT proposed	Fail				X.
Fine Bleached Kraft		430.93	BCT proposed	Fail				X.
Papergrade Sulfite (Blow Pit Wash)		430.103	BCT proposed	Pass	Pass		X	
Dissolving Sulfite Pulp		430.113	BCT proposed	Fail				X.
Groundwood—Chemi-Mechanical		430.123	Reserved	NA				
Groundwood—Thermo-Mechanical		430.133	BCT proposed	Pass	Pass		X	
Groundwood—CMN Papers		430.143	BCT proposed	Fail				X.
Groundwood—Fine Papers		430.153	BCT proposed	Fail				X.
Soda		430.163	BCT proposed	Fail				X.
Deink		430.173	BCT proposed	Pass	Fail			X.
NI—Fine Papers		430.183	BCT proposed	Fail				X.
NI—Tissue Papers		430.193	BCT proposed	Fail				X.
Tissue from Wastepaper		430.203	BCT proposed	Fail				X.
Papergrade Sulfite (Drum Wash)		430.213	BCT proposed	Pass	Pass		X	
Unbleached Kraft and Semi-Chemical		430.223	BCT proposed	Fail				X.
Semi-Chemical		430.233	BCT proposed	Fail				X.
Wastepaper—Molded Products		430.243	BCT proposed	Fail				X.
NI—Lightweight Papers		430.253	BCT proposed	Fail				X.
NI—Filter and Nonwoven Papers		430.263	BCT proposed	Fail				X.
NI—Paperboard		430.273	BCT proposed	Fail				X.
BUILDERS' PAPER AND BOARD MILLS CATEGORY								
Builder's Paper and Roofing Felt		430.12	BCT proposed	Fail				X.
MEAT PRODUCTS								
Simple Slaughterhouse		432.17	pH limit			Fail		X.
Complex Slaughterhouse		432.27	pH limit			Fail		X.
Low Proc. Packinghouse		432.37	pH limit			Fail		X.
High Proc. Packinghouse		432.47	pH limit			Fail		X.
Small Processor		432.57	Removed	Pass	Pass		X	
Meat Cutter		432.67	pH limit			Fail		X.
Sausage and Luncheon Meats		432.77	pH limit			Fail		X.
Ham Processor		432.87	pH limit			Fail		X.
Canned Meat		432.97	pH limit			Fail		X.
Renderers		432.107	Removed	Pass	Pass		X	
METAL FINISHING								
Metal Finishing		433.18	Reserved	Fail				X.
ORE MINING AND DRESSING								
Iron Ore		440.15	BCT proposed	Fail				X.
Aluminum Ore		440.35	BCT proposed	Fail				X.
Uranium, Radium and Vanadium		440.55	BCT proposed	Fail				X.
Mercury Ores		440.65	BCT proposed	Fail				X.
Titanium Ore		440.75	BCT proposed	Fail				X.
Tungsten Ore		440.85	BCT proposed	Fail				X.
Nickel Ore		440.95	Reserved				Reserved	
Vanadium Ore		440.105	Reserved				Reserved	
Antimony Ore		440.115	Reserved				Reserved	
Copper, Lead, Zinc, Gold, Silver, Platinum, and Molybdenum Ores.		440.125	BCT proposed	Fail				X.

II. BCT Methodology

A. Part 1: The POTW test

1. *Background.* The POTW test compares the cost for industry to remove a pound of conventional pollutants to the cost incurred by a POTW for removing a pound of conventional pollutants.

In 1979, a single number (the POTW benchmark) was developed based on the costs of an average-size POTW to upgrade its facility from secondary treatment to advanced secondary treatment. The benchmark, as established in 1979, was $1.15 per pound (1976 dollars). This number was then compared to the costs industry would incur in going from BPT to the candidate BCT technologies. If the cost to industry to remove a pound of conventional pollutants was less than $1.15, BCT limitations beyond BPT levels were established.

As explained above, EPA subsequently discovered that the costs used to calculate the $1.15 benchmark were incorrect. Correction of the errors using updated and revised data results in a benchmark in the range of $.50–.60 per pound. The POTW test benchmark proposed today is $.27 per pound (1976 dollars) because EPA has decided to modify the method used to calculate it.

2. *Modification to Promulgated POTW Test Benchmark.* EPA is using the 1979 methodology upheld by the Court as the basis for this proposal with one modification. Instead of basing the POTW benchmark on costs and removals for an average-size 2 million gallon per day (mgd) plant, EPA proposes to base the POTW benchmark on cost and removal data for POTWs with flows ranging from one to fifty mgd. We have computed cost per pound figures for four flow sizes in this range and then weighted them according to each size's contribution to the total U.S. flow of POTWs. Finally, we summed these figures to obtain a single POTW benchmark.

EPA believes that weighting a variety of sizes of POTWs gives a better estimate of the costs to treat conventional pollutants at POTWs for two reasons. First, the use of data for different flow sizes of plants better depicts the costs of removing conventional pollutants at POTWs since the economies of scale inherent in large POTWs can be included in the calculation. Second, the statistical

reliability of the benchmark is improved because more data points are used.

The resulting POTW benchmark equals $.27 per pound in 1976 dollars. This figure is indexed to other years to account for inflation. These calculations, as well as a more detailed discussion of computations for the modified POTW benchmark, appear in Appendix A.

3. *Comparison of Municipal and Industrial Treatment Costs.* Under EPA's methodology, industry's costs in going from BPT to the candidate BCT are compared to determine whether the industrial costs are lower than the POTW benchmark of $.27 per pound (1976 dollars) and therefore reasonable. The sections below describe the calculation of the industrial costs.

a. *Calculation of Industrial Teatment Costs.* EPA has calculated the incremental annual costs for pollution control by determining the difference between the annual costs for a model plant or all plants in a subcategory to achieve BPT and the costs to achieve the candidate BCT. Annual costs include operation and maintenance expenses, interest, and depreciation. The data used by EPA in determining industrial costs for this review are drawn from the Agency Development Documents for each of the industries (See Appendix C.)

b. *Calculation of Industrial Pollutant Removal.* EPA calculated the incremental removal of conventional pollutants by determining the difference between the annual pounds of conventional pollutants removed after compliance with BPT and the pounds removed after compliance with the candidate BCT. These removals are based on the regulatory limits established for the 30-day average discharge of each pollutant. The conventional pollutants subject to this review fall into two categories: total suspended solids (TSS), and oxygen-demanding substances (BOD_5 and oil and grease). To avoid "double counting" of the amount of pollutants removed from BPT to the candidate BCT, pollutant removals are calculated using only one pollutant from each group. In those cases where both BOD_5 and oil and grease are subject to limitations, EPA included the pollutant with the greater amount of removal in the calculation.

c. *Calculation of the Industrial Cost Per Pound Figure.* EPA calculated the ratio of incremental annual cost to incremental conventional pollutant removal as follows: (candidate BCT annual costs minus BPT annual costs) divided by (candidate BCT pounds of conventional pollutants removed minus BPT pounds of conventional pollutants removed) This cost figure represents the annual incremental cost to remove a pound of conventional pollutants beyond BPT, and is the figure compared to the POTW benchmark to determine whether a BCT option passes the POTW test. These figures appear in Appendix D.

C. Part II: The Industry Cost Test.

1. *Background.* The Court of Appeals directed EPA to develop a separate, additional cost-effectiveness test which compares the costs to industry and the effluent reduction benefits achieved by industry in going from BPT to more stringent levels of control. Neither the Court nor the legislative history of the 1977 amendments provide specific guidance on how to design this test. EPA believes that three conditions must be met by the methodology for the second test. First, the industry cost test should be performed using an explicit numerical benchmark to determine the reasonableness of the proposed limitations. By comparing industry costs to a uniform benchmark, EPA will reduce the bias in calculating limitations for so many different industries. Second, the test must measure both for increases in pollution control costs and for effluent reductions of conventional pollutants. Third, the information needed to perform the test must be currently available for those industries covered by the secondary industry review, so that promulgation of BCT limitations is not significantly delayed.

The following sections describe the industry cost test and the alternatives considered. The discussion of the selection of the proposed method for calculating the incremental costs of BCT for the industrial subcategories appears first. The discussion of the selection of the proposed benchmark against which the industry incremental costs are measured follows.

2. *Industrial Cost Calculations.* The alternatives considered are discussed first, followed by the explanation of the selection of the method and its computation.

a. *Alternatives Considered.* EPA considered 5 different ways to measure the incremental costs of BCT for the industry cost test.

(1) *Measures of Economic Achievability.* One alternative was to use measures of economic achievability. Examples of such measures are;

After Tax Return on Investment. Return on investment (ROI) is the plant's profit (or net income) divided by the investment in the plant. Investment in water pollution control generally reduces the plant's ROI because there is no monetary "return" to the firm on this investment. Therefore, changes in the ROI measure the changes in plant profitability. Although absolute changes in ROI indicate that the plant is being affected, they do not measure the size of the impact on the plant since the base level of the ROI is extremely important.

Plant Closures. Another alternative is to look at the potential for plant closures. However, this is not always a reliable economic indicator since plants seriously affected by pollution control requirements may still decide to remain open for other financial reasons such as potential for long-term profitabiltiy, ability to absorb short term losses or low fixed costs of production.

Pollution Control Investment to Book Value. This criterion is based on the ratio of pollution control investment costs to the book value of the plant. In a general way, it measures the likelihood that the pollution control equipment can be financed.

Other Measures. Other measures were also considered such as the ratio of annual compliance costs to the total value of shipments and cash flow analyses.

All these economic achievability measures contain three drawbacks. First, they do not consider the effluent reductions benefits of additional controls. Second, the data required to perform these analyses are not generally available. Finally, the economic achievability of the regulations was already taken into account in the initial development of the BAT regulations.

(2) *Relative Pollutant Reduction (Percent).* Pollutant reduction efficiency for a plant is a measure of the relative amount of pollutant removed from the wastewater in percentage terms. One alternative for the test is to compute the percentage of pollutants removed in going from BPT to BCT levels of control as compared to the total amount of pollutants in the untreated wastewater. Because the removals are expressed in percentage terms, the results of such analysis would not depend on the size of the facility, making the test "blind" to size.

There are two major drawbacks to these types of measures. First, the costs of pollutant removal would not be considered. Second, measuring only the relative amounts of pollutants removed can lead to misleading conclusions about effluent reduction benefits. A large facility might remove 10 times the waste as a small facility, yet in percentage terms have a smaller relative efficiency than the small facility, and thus "fail" the BCT industry cost test when in reality substantial additional pounds of conventional pollutants would be removed by further treatment.

(3) *Cost Curve Elasticity.* The elasticity of the pollution control cost curve is measured by the ratio of percent change in pollutant removal divided by the percent change in the total annual compliance cost. This criterion has a number of advantages over the first two alternatives. First, the criterion considers both cost and pollutant reduction. Second, the measure does not assess factors already taken into account in the development of the BAT regulations. Third, the figure generally can be calculated from available data. Finally, a numerical benchmark for costs and removal can be computed for comparison.

(4) *Incremental Costs to Average Cost of Pollutant Removal Ratio.* Under this alternative EPA would calculate the average cost per pound of conventional pollutants removed in going from no treatment to BCT levels, and divide the result into the incremental cost per pound in going from BPT to BCT levels. It has the same advantages as the elasticity approach, and in addition is easier to compute with currently available data.

(5) *Increasing Cost Ratio.* The last ratio EPA considered is the incremental cost per pound in going from BPT to BCT levels divided by the average cost in going to BPT. This alternative has the same advatages as Alternative (4).

b. *Selection of Second Test Methodology.* Alternatives (1) and (2) in the previous section were rejected for the reasons discussed above, while alternatives (3), (4), and (5) generally fulfill all the conditions that EPA has determined the second test must satisfy, EPA's proposed methodology is based on the increasing cost ratio, Alternative (5), because it is the only measure which directly compares the cost-effectiveness of effluent reduction in achieving BCT levels (in dollars per pound removed) with the cost-effectiveness that is achieved at BPT levels.

c. *Calculation of the Industry Cost Figures.* This section describes how the Alternative 5 calculations are actually performed. The increasing cost ratios are a combination of two computations for incremental annual cost per pound. The first increment is the annual cost per pound in going from BPT to candidate BCT control levels. This is identical to the industry calculation used in the POTW test. (See *"Part I: The POTW Test"* in this notice for the detailed explanation.) This increment becomes the *numerator* in the increasing cost ratio.

The second increment is the incremental annual cost per pound in going from a "pre-BPT" level of control to BPT levels of control and becomes the *denominator* in the increasing cost ratio. The "pre-BPT" level is set at one of two levels, depending upon the availability of data for each affected industry. If sufficient data exists for the development of cost and effluent data for treatment levels in-place at the time BPT limitations were being developed, that level of treatment would be used in the calculation. If not enough data is available, the "pre-BPT" control would be assumed to be no treatment of effluent wastewater. This use leads to variation in the way the incremental cost per pound figuers are calculated. The cost per pound under the increment from raw waste load to BPT will in general be smaller than that for the pre-BPT to BPT increment. This means that the assumption of no treatment-in-place may lead to an overestimation of pounds removed by BPT and underestimation of the incremental cost per pound. In the absence of additional data, EPA beleives this result is unavoidable.

The calculation of cost and effluent reduction (in pounds of conventional pollutants removed) for the pre-BPT to BPT increment would follow the method used for the BPT to candidate BCT increment except for one point. The conventional pollutant discharges at pre-BPT would be based on the average effluent discharge per year because no 30-day limitations exist. Monthly or 30-day average discharge levels are used for BPT and candidate BCT levels because they are the regulatory limits with which industry must comply. Using annual average effluent data instead of monthly average data for the pre-BPT levels of control increases the pre-BPT to BPT incremental cost per pound. EPA requests comments on both of these issues on the second increment.

After each increment is calculated, EPA calculates the increasing cost ratio by dividing the first increment by the second:

$$= \frac{\text{Total annual cost/pounds removed (BPT to BCT)}}{\text{Total annual cost/pounds removed (pre-BPT to BPT)}}$$

3. *The Industry Cost Benchmark.* As mentioned before, EPA beleives that the industrial cost calculations should be compared against a single numerical benchmark. This section describes the alternatives considered, the selection of the benchmark, and its computation.

a. *Alternatives Considered.* EPA identified two alternative benchmarks for use in the industry cost test.

(1) *Elastiicity of Unity (1.0).* The unit elasticity, 1.0, was considered fr a benchmark value because it identifies the point on a continuous cost curve where, on a percentage basis, the incremental costs begin to exceed the incremental effluent reduction. If the test were to be applied, all industrial calculations which are less than 1.0 would be considered reasonable because the unit cost per pound of going beyond BPT levels would be less than that incurred in attaining BPT levels. This approach establishes the cost per pound of achieving BPT as an upper bound of reasonable cost.

(2) *POTW Data.* Another alternative is using POTW cost-effectiveness data in going from primary to ST and from ST to AST as the basis for comparison with industrial cost-effectiveness data. As discussed in 1979, there are general parallels between industrial and municipal treatment levels at BCT and advanced secondary treatment levels. 45 Fr 50735. In addition, pre-BPT and primary treatment levels correspond since both levels represent the basic technologies used to treat raw wastes. This benchmark alternative is computed by dividing the incremental cost per pound in going from ST to AST by the incremental cost per pound in going from primary to secondary. The benchmark, which is computed in Apendix B to be 1.43, would then serve as a basis for assessing the cost-effectiveness of advanced wastewater treatment of coventional pollutants.

b. *Selection of Benchmark.* EPA chose to use a POTW-based benchmark for several reasons. First, the data on POTW costs and removal are the most sophisticated data available on conventional pollutant removal. In view of the analogies between industrial and municipal treatment levels, EPA decided to utilize this POTW basis. Second, EPA believes the first alternative is contrary to Congressional intent since the cost per pound in achieving BCT could never be higher than the cost per pound in achieving BPT. While Congress directed EPA to evaluate the cost-effectiveness of BCT it did not establish the cost per pound in achieving BPT as a ceiling for BCT costs. Finally, EPA believes reliance on an objective, documented POTW measure is preferable to judging the cost-effectiveness of industrial treatment on an ad-hoc basis. EPA requests comments on either alternative, and other possible alternatives not presented here.

c. *Comparison of Industry Costs and Benchmark.* Under EPA's proposed methodology, the industry subcategory calculations would be compared to the benchmark of 1.42. If the industry figure for a subcategory is lower than 1.43, the subcategory passes this BCT test. If the

industry figure is higher than 1.43, the costs for BCT are considered unreasonable, and the limitations are set at the lowest level that passes the test. This may be BPT or alternative candidate BCT limitations above BPT levels.

III. Application of BCT Methodology

EPA applied the proposed BCT methodology above to the following secondary industry and primary industry categories: Dairy Products, Grain Mills, Canned and Preserved Fruits and Vegetables, Canned and Preserved Seafoods, Sugar, Cement Manufacturing, Feedlots, Inorganic Chemicals, Phosphates, Ferroalloy Manufacturing, Glass Manufacturing, Timber Products, Pulp Paper and Paperboard, and Builder's paper and Board Mills, Meat Products, Metal Finishing, and Ore Mining and Dressing. Table 1 summarizes the results of this application. The actual calculations are in the rulemaking record. For secondary industries where BAT limitations equalled BPT, EPA did not perform the BCT costs calculations, since BCT must be at least as stringent as BPT.

In addition to the BCT cost test, Section 304(b)(4)(B) of the Clean Water Act requires EPA to consider other factors such as the age of equipment, production process, and energy requirements in the development of BCT limitations. Based on the rulemaking record for these industrial categories and this proceeding, EPA has determined that the proposed limitations are technically achievable and otherwise satisfy Section 304(b)(4)(B).

A. Secondary Industries.

The BCT test determinations for the scondary industries are based on the cost and effluent data collected at the time of the original proposal and promulgation of the BAT guidelines for those industries. Where new information regarding the availability of pollution control technologies and its economic achievability became available, EPA used the information to determine whether the BAT technology still satisfied all the statutory factors.

1. *Dairy Products.* All twelve subcategories in the Dairy subcategory were reviewed. The technology basis for the former BAT limitations was tertiary treatment by multi-media filtration. Based on information submitted to the Agency since promulgation of the BAT effluent limitations, EPA believes that the aplication of filtration technology would be difficult technically in this industry. The suspended solids in the Dairy Products Industry are extremely difficult to treat, and the excess solids can cause filter blindig and substantial operational difficulty. Thus, EPA is proposing BCT limitations equal to BPT for all twelve subcategories.

2. *Grain Mills.* BCT limitations equal to BPT were already promulgated for the Normal Wheat Flour, Normal Rice, Animal Feed and Hot Cereal subcategories. BCT limitations for the Corn Wet Milling subcategory are being reserved until more recent information on BPT compliance costs received by EPA has been evaluated. The remaining 5 subcategories fail the proposed BCT test. BCT limiations for them are therefore proposed equal to BPT.

3. *Canned and Preserved Fruits and Vegetables.* There are eight subcategories in this category. All eight fail the proposed BCT test and BCT limitaions for them are proposed equal to BPT.

4. *Sugar.* Of the eight subcategories for Sugar Processing, five had the same conventional pollutants limitations for BAT and BPT. None of the three remaining subcategories pass the proposed BCT test. EPA therefore proposes that BCT limitations for all eight subcategories be equal to BPT.

5. *Cement Manufacturing.* Two of the three subcategories already contain BCT limitations equal to BPT. The remaining subcategory, Leaching, fails the proposed BCT test and the BCT limitations are proposed equal to BPT.

6. *Feedlots.* The Feedlots category contains two subcategories. For the first subcategory (All Subcategories Except Ducks), both BPT and BAT are zero discharge limitations. Therefore, zero discharge BCT limitations were promulgated in 1979. For the remaining subcategory, Duck feedlots, conventional pollutant discharges from man-made or natural (e.g., marshes) swimwater areas are difficult to quantify and adapt to traditional end-of-pipe treatment technologies. Because the effluent reduction benefits between existing discharges and the BAT technology, dry lots, are not readily quantifiable, the BCT test cannot be performed. Therefore, EPA is not now proposing BCT effluent limitations for this subcategory.

7. *Ferroalloy Manufacturing.* One of the seven subcategories contains BCT limitations equal to BPT. The remaining six are being reviewed; only the Slag Processing subcategory passes the Proposed BCT test. BCT limitations for Slag Processing subcategory are proposed at the BAT level; the BCT limitations for the other five subcategories are proposed equal to BPT.

8. *Glass Manufacturing.* Three of 13 subcategories contain BCT limitations equal to BPT. EPA is reviewing the remaining ten subcategories; nine fail the proposed BCT test, and BCT limitations for them are proposed equal to BPT. The remaining subcategory, Insulation Fiberglass, had zero discharge limitations set at BPT for wastewater from air emission equipment. BCT limitations are proposed equal to BPT since no further pollutant removal is possible.

9. *Meat Products.* This category contains ten subcategories. The BAT effluent limitations for conventional pollutants for eight of these subcategories were withdrawn, pending a technical review of biological nitrification technology for ammonia and TSS removal in response to a court decision. Based on this review EPA has determined that nitrification, the BAT technology, is unsuitable as a basis for a BCT technology. One significant factor is that nitrification effects removal of ammonia nitrogen from these wastewaters, but affords only insignificant removal of conventional pollutants beyond BPT levels. Further, reduction in water use in meat processing operations, a key part of the former BAT limitations, may not be achievable at many plants. Finally, preliminary results of the nitrification technology review indicate that consistent year round removal of conventional pollutants is technically achievable only with extraordinary operational care. For these reasons EPA has rejected nitrification as a BCT technology and is proposing BCT equal to BPT for those eight subcategories.

The remaining two subcategories, the Small Processor and Renderers subcategories, pass the proposed BCT test. BCT limitations equal to BAT are proposed for these subcategories.

10. *Phosphates.* The Phosphates category contains three subcategories, two of which already have BCT limitations equal to BPT. The third subcategory, Sodium Phosphates, passes the proposed BCT test. The BCT limitations for this subcategory are proposed equal to BAT.

11. *Canned and Preserved Seafood Processing.* EPA conducted a review of all 33 subcategories in the Canned and Preserved Seafoods Category. Because new information has become available, EPA also reevaluated the technical availability and economic achievability of the BAT regulations.

The BAT technology basis for the following 12 subcategories and sections of two other subcategories is dissolved air flotation (DAF): Mechanized Blue Crab, Dungeness and Tanner Crab, Non-Remote Alaskan Shrimp, Northern

Shrimp, Southern Non-Breaded Shrimp, Breaded Shrimp, Alaska Mechanized Salmon (Non-Remote), West Coast Mechanized Salmon, Non-Alaskan Mechanized Bottom Fish, Mechanized Clam, Sardine, Alaskan Herring Fillet (Non-Remote), Non-Alaskan Herring Fillet, and Tuna. This technology has not been widely applied at full scale, except for the tuna subcategory. Experience in the tuna subcategory shows that achievement of effluent limitations on a consistent basis by DAF can be difficult in light of the variability of raw wastewater effluent loads, their typically oily nature, and the operational problems these circumstances present in maintaining the solids flotation process. Space requirements for installation of this technology also can present problems for many plants. Optimized DAF (with chemically assisted coagulation) for the tuna subcategory adds operational complexity, maintenance requirements, and disposal cost for additional sludge volume generated by optimized operation. EPA has therefore determined that this technology is infeasible and propose BCT limitations for these subcategories equal to BPT.

Aerated lagoons were the BAT technology for three subcategories: Conventional Blue Crab, Non-Alaskan Conventional Bottom Fish and Steamed and Canned Oyster. EPA has determined that aerated lagoons are not a feasible technology for these subcategories because lagoons require a substantial amount of land, which is not uniformly available. Moreover, the seasonal and often sporadic processing operations of these plants does not provide the consistent source of wastewater needed for proper functioning of biological treatment systems such as aerated lagoons. Therefore, EPA is proposing BCT limitations equal to BPT for these subcategories.

EPA is proposing BCT equal to BPT for the Remote Alaskan Crab Meat, Remote Alaskan Whole Crab and Crab Section, and Remote Alaskan Shrimp subcategories and remote sections of 5 other subcategories because there are technical problems with the technology that was promulgated for BAT. This technology was screening of the fish wastes, and subsequent disposal of these wastes. Solid waste disposal in nonremote areas can be accomplished by the use of reduction facilities; however, these are not economically viable in remote areas there are no seafood processing waste-water treatment facilities. Land disposal or barging are the only solid waste disposal techniques available to the remote seafood processors; however, they are often not feasible or work during only a portion of the year because of weather. Therefore, the Agency has rejected the BAT technology as being suitable for BCT.

Two subcategories, Hand-Shucked Clam and Fish Meal, would incur substantial adverse economic impacts as a result of the former BAT regulations. For the Hand-Shucked Clam subcategory, nine of the fifteen plants that directly discharge process wastewaters would probably close rather than comply with the BCT regulations. These nine plants consist of all six small plants and all three canned clam plants. Because the economic impacts appear to be so severe, EPA is proposing BCT limitations equal to BPT for this subcategory.

For the Fish Meal subcategory, twelve of the 54 direct discharging plants would probably close as a result of the former BAT regulations. Most of these plants are small facilities. Because the economic impacts as a result of this regulation are so adverse, EPA is proposing BCT limitations equal to BPT for this subcategory.

On February 17, 1977, EPA voluntarily withdrew BAT limitations for the following five Alaskan Seafood Categories because of an inadequate economic analysis: Alaskan Hand-Butchered Salmon, Alaskan Mechanized Salmon, Alaskan Bottom Fish, Alaskan Scallop and Alaskan Herring Fillet. As discussed above, BCT is being proposed equal to BPT for the geographically remote sections of these subcategories because of technical problems with screening, and for the Non-Remote Alaskan Mechanized Salmon and Non-Remote Alaskan Herring Fillet subcategories because the BAT technology was DAF. The economic impact analysis for the non-remote sections of the three remaining subcategories Alaskan Hand-Butchered Salmon (Non-Remote), Alaskan Bottom Fish (Non-Remote), Alaskan Herring Fillet (Non-Remote), has not been completed. EPA is therefore deferring proposing BCT limitations for the 3 remaining subcategories until the analysis is completed.

Four of the remaining 8 subcategories fail the POTW test: Farm-Raised Catfish, Non-Remote Alaskan Crab Meat, Non-Remote Alaskan Whole Crab, and West Coast Hand-Butchered Salmon. BCT limitations for these subcategories are proposed equal to BPT. Four subcategories pass the POTW test: Pacific Coast Hand-Shucked Oyster, Atlantic and Gulf Coast Hand-Shucked Oyster, Non-Alaskan Scallop, and Abalone. The BPT technology for the latter four subcategories is screening of the fish wastes. Because screening removes only gross solids from the wastewater, EPA cannot calculate the incremental removal of pollutants in going from raw waste load to BPT in a quantitatively meaningful way. Therefore, EPA cannot perform the industry cost test according to the formula EPA is proposing. However, EPA has examined the technology basis of BCT, which is simple in-plant controls, and has determined that the technology is cost-effective (less than $.04 per pound of conventional pollutants removed) and economically achievable. EPA is therefore proposing BCT limitations equal to the BAT level, and request comments on this decision. In 1979 a number of seafood processers filed a petition with EPA requesting that the Agency modify BPT limitations for certain seafood processing areas in Alaska. The Agency is currently reviewing the petition and will decide whether to modify the BPT limitations shortly. If any modification is proposed, the corresponding BCT limitations will be revised accordingly.

B. Primary Industries.

1. *Timber Products.* This category contains 16 subcategories. Two subcategories had BCT limitations established in January 1981 (46 FR 3260); they were subsequently withdrawn in February 1982 (47 FR 6835). The Insulation Board subcategory fails the proposed BCT test, while the Wet Process Hardboard subcategory passes the proposed BCT test. This result is identical to the 1981 promulgation.

EPA never established BCT limitations for the remaining 14 subcategories. BPT limitations for the Barking-Mechanical (a portion of the Barking subcategory), Veneer, Plywood, Dry Process Hardboard, Wood Preserving-Waterborne Nonpressure, Wood Preserving-Boulton, Sawmills and Planing Mills, Finishing, Particleboard and one of the Wood Furniture and Fixture Production Subcategories are no discharge of wastewater. Because no incremental removal can be achieved beyond BPT, EPA is proposing BCT limitations equal to BPT for these subcategories. EPA cannot identify treatment technologies beyond BPT for the Wet Storage subcategory that remove significant amounts of conventional pollutants. EPA is therefore proposing BCT limitations equal to BPT. EPA is not proposing BCT limitations for the Barking-Hydraulic (a segment of the Barking subcategory),

Wood Preserving-Steam, Log Washing and the other Wood Furniture and Fixture Production subcategories. EPA will reserve BCT limitations for these subcategories until a BCT assessment can be made.

2. *Pulp, Paper, and Paperboard.* In January of 1981, EPA proposed BCT limitations for 24 subcategories in this industry (46 FR 1430). Of these 24, 21 would have required pollution control more stringent than BPT. In performing the proposed BCT test, EPA used BCT Computations based on BPT limitations promulgated in 1977 with the following exceptions. EPA will be shortly promulgating BPT limitations for four new subcategories and 2 new subdivisions. These BPT limitations were used as the basis for reproposing BCT for those subcategories and subdivisions and are included in this rulemaking record solely to facilitate comments on BCT.

The BCT limitations for the two Papergrade Sulfite subcategories and the Groundwood-Thermo-Mechanical subcategory pass the new BCT test. In the January 1981 proposal, EPA selected Option 4 for these subcategories; however, Option 4 did not pass the new BCT test. EPA has therefore selected Option 1, BPT plus in-plant controls, as the technology basis for proposed BCT limitations for these subcategories. No additional end-of-pipe technology beyond BPT is contemplated in this option. The controls primarily achieve reductions in water use and BOD_5 raw waste loadings that translate into lower conventional pollutant discharge after treatment in existing end-of-pipe systems. This option passes the proposed BCT test for all three subcategories and will cost less than the previously proposed option. In addition, no economic impact was projected for Option 4; therefore, no impact is expected for this less costly option.

The remaining twenty-one subcategories fail the proposed BCT test for all options. The BCT limitations proposed in January 1981 are revised to equal BPT for these subcategories.

3. *Inorganic Chemicals.* EPA promulgated BCT limitations equal to BPT for all subcategories except for the Hydrofluoric Acid and the Chlor-Alkali—Diaphragm Cells subcategories. BCT limitations for these two subcategories were reserved because the 1979 BCT methodology had been remanded (47 FR 28260, June 29, 1982). EPA has since performed the proposed BCT test on the two subcategories. Both of them failed the test, and BCT limitations for them are proposed equal to the BPT level.

4. *Ore Mining and Dressing.* EPA proposed BCT equal to BPT limitations for seven subcategories on June 14, 1982 (47 FR 25682). The proposed limitations were published erroneously without applying the proposed BCT cost test. EPA has now applied the new test to all seven subcategories. None pass and EPA is proposing revised BCT limitations for them equal to BPT.

5. *Metal Finishing.* Effluent limitations guidelines for the metal finishing point source category were proposed on August 31, 1982 (47 FR 38462). EPA deferred proposing BCT limitations for this category because the 1979 BCT methodology had been remanded. EPA has since performed the proposed BCT test on the category, which contains one subcategory. The category failed the test, and BCT limitations equal to BPT are proposed.

V. Regulatory Flexibility Analysis and Regulatory Impact Analysis

Public Law 96–354 requires EPA to prepare an Initial Regulatory Flexibility Analysis for all proposed regulations that have a significant impact on a substantial number of small entities. This analysis may be done in conjunction with or as part of any other analysis conducted by the Agency. EPA already performed analyses designed to evaluate significant impacts on small facilities in the previous proposal and/or promulagtion of these regulations and these showed no potential for a significant impact. The newer economic analysis for seafoods showed a significant economic impact for certain small plants, as discussed previously. EPA is therefore proposing that BCT equal BPT for these plants. Thus, no new significant impacts on small businesses are expected as a result of this proposal. Therefore, a formal regulatory flexibility analysis is not required. The analyses and small business definitions appear in the documents listed in Appendix C.

Executive Order 12291 requires EPA and other agencies to perform regulatory impact analyses of major regulations. Major rules impose an annual cost to the economy of $100 million or more or meet other economic impact criteria. EPA does not consider the proposed rules for BCT to be a major rule because the annual cost is less than $100 million and none of the other criteria are met.

VI. Comments Invited

The Agency urges interested individuals to submit comments on the proposal set forth in this notice. All comments received within 60 days will be considered in the promulgation of these BCT effluent limitations guidelines. EPA particularly requests comments and/or data on the following issues:

1. New economic information which would affect the Agency's consideration of economic impacts on any of the industries affected by this rulemaking.

2. EPA's plans to recommend that permit writers use the proposed BCT methodology in setting BPJ–BCT permits in the absence of national effluent limitations.

VII. OMB Review

The regulation was submitted to the Office of Management and Budget for review as required by E.O. 12291. Any comments from OMB to EPA and any EPA response to those comments are available for public inspection at Room 2404, U.S. EPA, 401 M Street, SW., Washington, D.C. 20460 from 9:00 a.m. to 4:00 p.m. Monday through Friday excluding Federal holidays.

Lists of Subjects

40 CFR Part 405

Dairy products, Water pollution control, Waste treatment and disposal.

40 CFR Part 406

Grain mill products, Water pollution control, Waste treatment and disposal.

40 CFR Part 407

Fruits, Vegetables, Water pollution control, Waste treatment and disposal.

40 CFR Part 408

Seafood, Water pollution control, Waste treatment and disposal.

40 CFR Part 409

Sugar, Water pollution control, Waste treatment and disposal.

40 CFR Part 411

Cement industry, Water pollution control, Waste treatment and disposal.

40 CFR Part 412

Livestock, Water pollution control, Feedlots, Waste treatment and disposal.

40 CFR Part 415

Chemicals, Water pollution control, Waste treatment and disposal.

40 CFR Part 422

Phosphate, Water pollution control, Waste treatment and disposal.

40 CFR Part 424

Iron, Metals, Water pollution control, Waste treatment and disposal.

40 CFR Part 426

Glass and glass products, Water pollution control, Waste treatment and disposal.

40 CFR Part 429

Forests and forest products, Furniture industry, Water pollution control, Waste treatment and disposal.

40 CFR Part 430

Paper and paper products industry, Water pollution control, Waste treatment and disposal.

40 CFR Part 431

Paper and paper products industry, Water pollution control, Waste treatment and disposal.

40 CFR Part 432

Meat and meat products, Water pollution control, Waste treatment and disposal.

40 CFR Part 433

Water pollution control, Waste treatment and disposal.

40 CFR Part 440

Metals, Mines, Water pollution control, Waste treatment and disposal.

(Secs. 301 and 304, Clean Water Act, (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))

Dated: October 14, 1982.

John W. Hernandez,

Acting Administrator.

For reasons set out in the preamble, the revisions proposed on January 6, 1981 (46 FR 1430) for §§ 430.13, 430.53, 430.63, 430.73, 430.83, 430.93, 430.103, 430.113, 430.133, 430.143, 430.153, 430.163, 430.173, 430.183, 430.193, 430.203, 430.213, 430.223, 430.233, 430.243, 430.253, 430.263, 430.273 and 431.13 are withdrawn. In addition, 40 CFR Parts 405, 406, 407, 408, 409, 411, 412, 415, 422, 424, 426, 429, 430, 431, 432, 433 and 440 are proposed to be amended as follows:

PART 405—EFFLUENT LIMITATIONS GUIDELINES FOR STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES FOR THE DAIRY PRODUCTS PROCESSING INDUSTRY POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 405 for the Dairy Products Processing Industry Point Source Category is amended as follows:

§§ 405.17, 405.27, 405.37, 405.47, 405.57, 405.67, 405.77, 405.87, 405.97, 405.107, and 405.127 [Added]

§ 405.117 [Revised]

1. Sections 405.17, 405.27, 405.37, 405.47, 405.57, 405.67, 405.77, 405.87, 405.97, 405.107, and 405.127 are added, and 405.117 is revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 405. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Receiving Stations Subcategory	405.17	405.12
Subpart B—Fluid Products Subcategory	405.27	405.22
Subpart C—Cultured Products Subcategory	405.37	405.32
Subpart D—Butter Subcategory	405.47	405.42
Subpart E—Cottage Cheese and Cultured Cream Cheese Subcategory	405.57	405.52
Subpart F—Natural and Processed Cheese Subcategory	405.67	405.62
Subpart G—Fluid Mix for Ice Cream and Other Frozen Desserts Subcategory	405.77	405.72
Subpart H—Ice Cream, Frozen Deserts, Novelties and Other Dairy Desserts Subcategory	405.87	405.82
Subpart I—Condensed Milk Subcategory	405.97	405.92
Subpart J—Dry Milk Subcategory	405.107	405.102
Subpart K—Condensed Whey Subcategory	405.117	405.112
Subpart L—Dry Whey Subcategory	405.127	405.122

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§(b)* of this subpart for the best practicable control technology currently available (BPT).

PART 406—GRAIN MILLS POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 406 for the Grain Mills Point Source Category is amended as follows:

§§ 406.27, 406.67, 406.97 and 406.107 [Added]

§§ 406.37, 406.47, 406.57 and 406.77 and 406.87 [Revised]

Sections 406.27, 406.67, 406.97, and 406.107 are added, and §§ 406.37, 406.47, 406.57, 406.77, and 406.87 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 406. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart B—Corn Dry Milling Subcategory	406.27	406.22
Subpart C—Normal Wheat Flour Milling Subcategory	406.37	406.32
Subpart D—Bulgar Wheat Flour Milling Subcategory	406.47	406.42
Subpart E—Normal Rice Milling Subcategory	406.57	406.52
Subpart F—Parboiled Rice Processing Subcategory	406.67	406.62
Subpart G—Animal Feed Subcategory	406.77	406.72
Subpart H—Hot Cereal Subcategory	406.87	406.82
Subpart I—Ready-To-Eat Cereal Subcategory	406.97	406.92
Subpart J—Wheat Starch and Gluten Subcategory	406.107	406.102

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 406.16) in *§ (b)* of this

subpart for the best practicable control technology currently available (BPT).

PART 407—CANNED AND PRESERVED FRUITS AND VEGETABLES PROCESSING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 407 for the Canned and Preserved Fruits and Vegetables Processing Point Source Category is amended as follows:

§§ 407.37, 407.57, 407.67 and 407.77, 407.87 [Added]

§§ 407.17, 407.27, 407.47 [Revised]

Sections 407.17, 407.27, and 407.47 are revised, and §§ 407.37, 407.57, 407.67, 407.77, and 407.87 are added. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 407. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Apple Juice Subcategory	407.17	407.12
Subpart B—Apple Products Subcategory	407.27	407.22
Subpart C—Citrus Products Subcategory	407.37	407.32
Subpart D—Frozen Potato Products Subcategory	407.47	407.42
Subpart E—Dehydrated Potato Products Subcategory	407.57	407.52
Subpart F—Canned and Preserved Fruits Subcategory	407.67	407.62
Subpart G—Canned and Preserved Vegetables Subcategory	407.77	407.72
Subpart H—Canned and Miscellaneous Specialties Subcategory	407.87	407.82

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

PART 408—CANNED AND PRESERVED SEAFOOD PROCESSING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 408 for the Canned and Preserved Seafood Processing Point Source Category is amended as follows:

§§ 408.17, 408.27, 408.37, 408.47, 408.57, 408.67, 408.77, 408.87, 408.97, 408.107, 408.117, 408.127, 408.137, 408.147, 408.157, 408.177, 408.187, 408.197, 408.217, 408.227, 408.237, 408.247, 408.277, 408.287, 408.317, and 408.327 [Added]

1. Sections 408.17, 408.27, 408.37, 408.47, 408.57, 408.67, 408.77, 408.87, 408.97, 408.107, 408.117, 408.127, 408.137, 408.147, 408.157, 408.177, 408.187, 408.197, 408.217, 408.227, 408.237, 408.247, 408.277, 408.287, 408.317, and 408.327 are added. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 408. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Farm-Raised Catfish Processing Subcategory	408.17	408.12
Subpart B—Conventional Blue Crab Processing Subcategory	408.27	408.22
Subpart C—Mechanized Blue Crab Processing Subcategory	408.37	408.32
Subpart D—Non-Remote Alaskan Crab Meat Processing Subcategory	408.47	408.42
Subpart E—Remote Alaskan Crab Meat Processing Subcategory	408.57	408.52
Subpart F—Non-Remote Alaskan Whole Crab and Crab Section	408.67	408.62
Subpart G—Remote Alaskan Whole Crab and Section Processing Subcategory	408.77	408.72
Subpart H—Dungeness and Tanner Crab Processing in the Contiguous States Subcategory	408.87	408.82
Subpart I—Non-Remote Alaskan Shrimp Processing Subcategory	408.97	408.92
Subpart J—Remote Alaskan Shrimp Processing Subcategory	408.107	408.102
Subpart K—Northern Shrimp Processing in the Contiguous States Subcategory	408.117	408.112
Subpart L—Southern Non-Breaded Shrimp Processing in the Contiguous States Subcategory	408.127	408.122
Subpart M—Breaded Shrimp Processing in the Contiguous States Subcategory	408.137	408.132
Subpart N—Tuna Processing Subcategory	408.147	408.142
Subpart O—Fish Meal Processing Subcategory	408.157	408.152
Subpart Q—Alaskan Mechanized Salmon Processing Subcategory	408.177	408.172
Subpart R—West Coast Hand-Butchered Salmon Processing Subcategory	408.187	408.182
Subpart S—West Coast Mechanized Salmon Processing Subcategory	408.197	408.192
Subpart U—Non-Alaskan Conventional Bottom Fish Processing Subcategory	408.217	408.212
Subpart V—Non-Alaskan Mechanized Bottom Fish Processing Subcategory	408.227	408.222
Subpart W—Hand-Shucked Clam Processing Subcategory	408.237	408.232
Subpart X—Mechanized Clam Processing Subcategory	408.247	408.242
Subpart AA—Steamed and Canned Oyster Processing Subcategory	408.277	408.272
Subpart AB—Sardine Processing Subcategory	408.287	408.282
Subpart AE—Alaskan Herring Fillet Processing Subcategory	408.317	408.312
Subpart AF—Non-Alaskan Herring Fillet Processing Subcategory	408.327	408.322

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

2. Section 408.167 for Subpart P-Alaskan Hand-Butchered Salmon Processing Subcategory is added as set forth below:

§ 408.167 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

(a) [Reserved]

(b) Except as provided in § 125.30–32 any herring fillet processing facility located in population or processing centers including but not limited to Acachorege, Cordova, Juneau, Ketchikan, Kodiak, and Petersburg shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the

application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in § 408.162(b)(2) of this subpart for the best practicable control technology currently available (BPT).

3. Section 408.207 for Subpart T-Alaskan Bottom Fish Processing Subcategory is added as set forth below:

§ 408.207 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

(a) [Reserved]

(b) Except as provided in § 125.30–32 any bottom fish processing facility located in population or processing centers including but not limited to Acachorege, Cordova, Juneau, Ketchikan, Kodiak, and Petersburg shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in § 408.202(b)(2) of this subpart for the best practicable control technology currently available (BPT).

4. Section 408.297 for Subpart AC-Alaskan Scallop Processing Subcategory is added as set forth below:

§ 408.297 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

(a) [Reserved]

(b) Except as provided in § 125.30–32 any scallop processing facility located in population or processing centers including but not limited to Acachorege, Cordova, Juneau, Ketchikan, Kodiak, and Petersburg shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in § 408.292(b)(2) of this subpart for the best practicable control technology currently available (BPT).

5. Section 408.257 for Subpart Y-Pacific Coast Hand-Shucked Oyster Processing Subcategory is added as set forth below:

§ 408.257 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	(Metric units) (kilograms per 1,000 kg of product)	
TSS	45	36
Oil and Grease	2.2	1.7
pH	(1)	
	(English units) (pounds per 1,000 lb of product)	
TSS	45	36
Oil and Grease	2.2	1.7
pH	(1)	

[1] Within the range 6.0 to 9.0.

6. Section 406.267 for Subpart Z-Atlantic and Gulf Coast Hand-Shucked Oyster Processing Subcategory is added to read as set forth below:

§ 408.267 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day ERRRU*2	Average of daily values for 30 consecutive days shall not exceed
	(Metric units) (kilograms per 1,000 kg of product)	
TSS	23	16
Oil and Grease	1.1	0.77
pH	(1)	
	(English units) (pounds per 1,000 lb of product)	
TSS	23	16
Oil and Grease	1.1	0.77
pH	(1)	

[1] Within the range 6.0 to 9.0.

7. Section 408.307 for Subpart AD-Non-Alaskan Scallop Processing Subcategory is added as set forth below:

§ 408.307 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	(Metric units) kk/kkg of product	
TSS	5.7	1.4
Oil and Grease	7.3	0.23
pH	(1)	
	(English units) pounds per 1,000 lb of product	
TSS	5.7	1.4
Oil and Grease	7.3	0.23
pH	(1)	

[1] Within the range 6.0 to 9.0.

8. Section 408.337 for Subpart AG-Abalone Processing Subcategory is added as set forth below:

§ 408.337 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	(Metric units) kk/kkg of seafood	
TSS	26	14
Oil and Grease	21	1.3
pH	(1)	

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	(English units) pounds per 1,000 lb of product	
TSS	26	14
Oil and Grease	2.1	1.3
pH	(1)	

[1] Within the range 6.0 to 9.0.

PART 409—SUGAR PROCESSING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 409 for the Sugar Processing Point Source Category is amended as follows:

§§ 409.17, 409.27, 409.37 [Revised]

§§ 409.47, 409.57, 409.67, 409.77, and 409.87 [Added]

Section 409.17, 409.27, and 409.37 are revised. Sections 409.47, 409.57, 409.67, 409.77, and 409.87 are added. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 409. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Beet Sugar Processing Subcategory	409.17	409.12
Subpart B—Crystalline Cane Sugar Refining Subcategory	409.27	409.22
Subpart C—Liquid Cane Sugar Refining Subcategory	409.37	409.32
Subpart D—Louisiana Raw Cane Sugar Processing Subcategory	409.47	409.42
Subpart E—Florida and Texas Raw Cane Sugar Processing Subcategory	409.57	409.52
Subpart F—Hilo-Hamakua Coast of the Island of Hawaii Raw Cane Sugar Processing Subcategory	409.67	409.62
Subpart G—Hawaiian Raw Cane Sugar Processing Subcategory	406.77	406.72
Subpart H—Puerto Rican Raw Cane Sugar Processing Subcategory	406.87	406.82

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

PART 411—CEMENT MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 411 for the Cement Manufacturing Point Source Category is amended by revising § 411.27 of the Leaching Subcategory as follows:

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in § 411.22 of this subpart for the best practicable control technology currently available (BPT).

PART 412—FEEDLOTS POINT SOURCE CATEGORY

§ 412.17 [Removed]

40 CFR Subchapter N, Part 412 for the Feedlots Point Source Category is amended by removing § 412.17.

PART 415—INORGANIC CHEMICALS MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 415 for the Inorganic Chemicals Manufacturing Point Source Category is amended as follows:

1. In Subpart F—Chlor-Alkali Subcategory (Chlorine and Sodium or Potassium Hydroxide Production), § 415.67(b) is added to read as follows:

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

* * * * *

(b) Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart and using the diaphragm cell process must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations are the same for TSS and pH as specified in § 415.62.

2. In Subpart H—Hydrofluoric Acid Production Subcategory, § 415.87 is added to read as follows:

415.87 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 125.30–125.32, limitations on the discharge of conventional pollutants (which are defined in § 401.16) by an existing point source subject to this subpart shall, after the application of the best conventional pollutant control technology (BCT), be the same as the limitations specified for conventional pollutants in this subpart under the best practicable control technology currently available (BPT), as stated in § 415.82.

PART 422—PHOSPHATE MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 422 for the Phosphate Point Source Category is amended by adding § 422.67 of the Sodium Phosphates Subcategory as follows:

§ 422.67 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

METRIC UNITS (KG/KKG OF PRODUCT); ENGLISH UNITS (1B/1,000 LB OF PRODUCT)

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Aerage of daily values for 30 consecutive days shall not exceed
TSS	0.35	0.18
pH	(1)	(1)

[1] Within the range 6.0 to 9.5.

PART 424—FERROALLOY MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 424 for the Ferroalloy Manufacturing Point Source Category is amended as follows:

§§ 424.17 and 424.27 [Added]

§§ 424.47, 424.67, and 424.77 [Revised]

1. Sections 424.17, 424.27 are added, and §§ 424.47, 424.67, and 424.77 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 424. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Open Electric Furnaces with Wet Air Pollution Control Devices Subcategory	424.17	424.12
Subpart B—Covered Electric Furnaces and Other Smelting Operations with Wet Air Pollution Control Devices Subcategory	424.27	424.22
Subpart D—Covered Calcium Carbide Furnaces with Wet Air Pollution Control Devices Subcategory	424.47	424.42
Subpart F—Electrolytic Manganese Products Subcategory	424.67	424.62
Subpart G—Electrolytic Chromium Subcategory	424.77	424.72

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

2. Section 424.37 for Subpart C-Slag Processing Subcategory is added to read as set forth below:

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

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kg/Mwh)	
TSS	0.271	0.136
pH	(1)	(1)
	English units (lb/Mwh)	
TSS	.542	.271
pH	(1)	(1)

[1] With the range 6.0 to 9.0.

PART 426—GLASS MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 426 for the Glass Manufacturing Point Source Category is amended as follows:

§§ 426.17 and 427.47 [Added]

§§ 426.57, 426.67, 426.77, 426.87, 426.107, 426.117, 426.127, and 426.137 [Revised]

Sections 426.17, 426.47 are added, and §§ 426.57, 426.67, 426.77, 426.87, 426.107, 426.117, 426.127, and 426.137 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 426. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Insulation Fiberglass Subcategory	426.17	426.12
Subpart D—Plate Glass Manufacturing Subcategory	426.47	426.42
Subpart E—Float Glass Manufacturing Subcategory	426.57	426.52
Subpart F—Automative Glass Tempering Subcategory	426.67	426.62
Subpart G—Automative Glass Laminating Subcategory	426.77	426.72
Subpart H—Glass Container Manufacturing Subcategory	426.87	426.82
Subpart J—Glass Tubing (Danner) Manufacturing Subcategory	426.107	426.102
Subpart K—Television Picture Tube Envelope Manufacturing Subcategory	426.117	426.112
Subpart L—Incandescent Lamp Envelope Manufacturing Subcategory	426.127	426.122
Subpart M—Hand Pressed and Blown Glass Manufacturing Subcategory	426.137	426.132

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

PART 429—TIMBER PRODUCTS PROCESSING POINT SOURCE CATEGORY

40 CFR Subchaper N, Part 429 for the Timber Products Point Source Category is amended as follows:

§§ 429.32, 429.42, 429.52, 429.72, 429.92, 429.102, 429.112, 429.132, 429.142, 429.162 and 429.152 [Added]

The text of §§ 429.32, 429.42, 429.52, 429.72, 429.92, 429.102, 429.112, 429.132, 429.142, and 429.162 is added. Section 429.152 is added. The text of each section is identical except for the section number in the heading and the section number referenced at the end of

the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be add to the section heading for the respective subparts of Part 429. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart B—Veneer Subcategory	429.32	429.31
Subpart C—Plywood Subcategory	429.42	429.41
Subpart D—Dry Process Hardboard Subcategory	429.52	429.51
Subpart F—Wood Preserving-Water Borne or Nonpressure Subcategory	429.72	429.71
Subpart H—Wood Preserving-Boulton Subcategory	429.92	429.91
Subpart I—Wet Storage Subcategory	429.102	429.101
Subpart K—Saw Mills and Planing Mills Subcategory	429.122	429.121
Subpart L—Finishing Subcategory	429.132	429.131
Subpart M—Particleboard Manufacturing Subcategory	429.142	429.141
Subpart N—Insulation Board Subcategory	429.152	429.151
Subpart O—Wood Furniture and Fixture Production Without Wash Spray Booth(s) or Without Laundry Facilities Subcategory	429.162	429.161

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

2. Section 429.62 is added as set forth below:

§ 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 plans 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/kkg (pounds per 1,000 lb) of gross production)	
BOD *5*	3.83	2.51
TSS	10.9	7.04
pH	(1)	(1)

[1] 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 (pounds per 1,000 lb) of gross production)	
BOD *5*	13.2	8.62
TSS	13.9	9.52
pH	(1)	(1)

[1] Within the range 6.0 to 9.0 at all times.

3. The text of § 429.22 is added as set forth below:

§ 429.22 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 all mechanical barking installations: There shall be no discharge of process wastewater pollutants into navigable waters.

(b) [Reserved]

PART 430—PULP, PAPER, AND PAPERBOARD POINT SOURCE CATEGORY

On January 6, 1981, at 46 FR 1457, EPA proposed to revise 40 CFR Part 430 for the Pulp, Paper, and Paperboard Point Source Category. EPA proposes to futher amend proposed Part 430 as follows:

§§ 430.63, 430.73, 430.83, 430.93, 430.113, 430.143,430.153, 430.163, 430.173, 430.183, 430.193, 430.203, 430.243, 430.253, 430.263 and 430.273 [Revised]

1. Proposed §§ 430.63, 430.73, 430.83, 430.113, 430.143,430.153, 430.163, 430.173, 430.183, 430.193, 430.203, 430.243, 430.253, 430.263 and 430.273 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 430. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart F—Dissolving Kraft Subcategory	430.63	430.62
Subpart G—Market Bleached Kraft Subcategory	430.73	430.72
Subpart H—BCT Bleached Kraft Subcategory	430.83	430.82
Subpart I—Fine Bleached Kraft Subcategory	430.93	430.92
Subpart K—Dissolving Sulfite Pulp Subcategory	430.113	430.112
Subpart M—Groundwood-CMN Papers Subcategory	430.143	430.142
Subpart O—Groundwood-Fine Papers Subcategory	430.153	430.152
Subpart P—Soda Subcategory	430.163	430.162
Subpart Q—Deink Subcategory	430.173	430.172
Subpart R—Nonintegrated Fine Papers Subcategory	430.183	430.182
Subpart S—Nonintegrated-Tissue Papers Subcategory	430.193	430.192
Subpart T—Tissue from Wastepaper Subcategory	430.203	430.202
Subpart X—Wastepaper-Molded Products Subcategory	430.243	430.242
Subpart Y—Nonintegrated-Lightweight Paper Subcategory	430.253	430.252
Subpart Z—Nonintegrated-Filter and Nonwoven Papers Subcategory	430.263	430.262
Subpart AA—Nonintegrated-Paperboard Subcategory	430.273	430.272

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall

be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

2. Proposed § 430.13 is revised for Subpart A—Unbleached Kraft Subcategory and reads as follows:

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

Except as provided in § 125.30–32, limitations on the discharge of conventional pollutants (which are defined in § 401.16) by an existing point source subject to this subpart shall, after the application of the best conventional pollutant control technology (BCT), be the same as the limitations specified for conventional pollutants in this subpart under the best practicable control technology currently available (BPT), as stated in § 430.12, except that non-continuous dischargers shall not be subject to the maximum day and average effluent limitations determined by dividing the average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD_5 by 1.78 and TSS by 1.82.

3. Proposed § 430.53 is revised for Subpart E—Paperboard from Wastepaper Subcategory and reads as follows:

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

Except as provided in § 125.30–32, limitations on the discharge of conventional pollutants (which are defined in § 401.16) by an existing point source subject to this subpart shall, after the application of the best conventional pollutant control technology (BCT), be the same as the limitations specified for conventional pollutants in this subpart under the best practicable control technology currently available (BPT), as stated in § 430.52, except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD_5 by 1.78 and TSS by 1.82.

4. Proposed § 430.103 is revised for Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory, and reads as follows:

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

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), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive day limitations for BOD_5 by 1.78 and TSS by 1.82:

SUBPART J

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD_5	$0.00438X^2-0.234X+14.8$	$0.00260X^2-0.139X+8.76$
TSS	$0.00684X^2-0.363X+23.2$	$0.00415X^2-0.220X+14.1$
pH	(1)	(1)

X = Percent sulfite pulp in final product.
[1] Within the range of 5.0 to 9.0 at all times.

5. Proposed § 430.133 is revised for Subpart M—Groundwood-Thermo-Mechanical Subcategory, and reads as follows:

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

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), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD*5* by 1.78 and TSS by 1.82:

SUBPART M

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD*5*	5.7	3.4
TSS	9.6	5.8
pH	(1)	(1)

[1] Within the range of 5.0 to 9.0 at all times.

6. Proposed § 430.213 is revised for Subpart U—Papergrade Sulfite (Drum Wash) Subcategory, and reads as follows:

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

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), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82:

SUBPART U

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD5	$0.00438X^2-0.234X+14.8$	$0.00260X^2-0.139X+8.76$
TSS	$0.00684X^2-0.363X+23.2$	$0.00415X^2-0.220X+14.1$
pH	(1)	(1)

X=Percent sulfite pulp in final product.
[1]Within the range of 5.0 to 9.0 at all times.

7. Proposed § 430.223 is revised for Subpart V—Unbleached Kraft and Semi-Chemical Subcategory and reads as follows:

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

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), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD5 by 178 and TSS by 1.82:

SUBPART V

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kg (or pounds per 1,000 lb)	
BOD5	8.0	4.0
TSS	12.5	6.25
pH	(1)	(1)

[1]Within the range of 6.0 to 9.0 at all times.

8. Proposed § 430.233 is revised for Subpart W-Semi-Chemical Subcategory and reads as follows:

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

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), except that non-continuous dischargers shall not be subject to the maximum day and average-of-30-consecutive-days limitations, but shall be subject to annual average effluent limitations determined by dividing the average-of-30-consecutive-days limitations for BOD5 by 1.78 and TSS by 1.82.

(a) For plants producing pulp and paper by the ammonia base neutral sulfite semi-chemical process:

SUBPART W—AMMONIA BASE

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb)	
BOD5	8.0	4.0
TSS	10.0	5.0
pH	(1)	(1)

[1]Within the range of 6.0 to 9.0 at all times.

(b) For plants producing pulp and paper by all other semi-chemical processes:

SUBPART W—OTHER BASES

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kkg (or pounds per 1,000 lb) of product	
BOD5	8.7	4.35
TSS	11.0	5.5
pH	(1)	(1)

[1]Within the range of 6.0 to 9.0 at all times.

PART 431—BUILDERS' PAPER AND BOARD MILLS POINT SOURCE CATEGORY

On January 6, 1981, at 46 FR 1457, EPA proposed to revise 40 CFR Part 431 for the Builders' Paper and Board Mills Point Source Category. EPA proposes to further amend proposed Part 431 as follows:

1. Section 431.12 is added to read as follows:

§431.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

(a) In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(b) The following limitations establish the quantity or quality of pollutants or

pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

Effluent characteristics	Effluent limitations: Maximum for	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 kg of product)	
BOD5	5.0	3.0
TSS	5.0	3.0
Oil and Grease	(1)	(1)
pH	(2)	(2)
	English units (pounds per ton of product)	
BOD5	10.0	6.0
TSS	10.0	6.0
Oil and Grease	(3)	(3)
pH	(2)	(2)

[1] Not to exceed 0.2 ml/L
[2] Within the range 6.0 to 9.0.
[3] No comparable English units.

2. Proposed § 431.13 under Subpart A—Builders Paper and Roofing Felt Subcategory is revised as follows:

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in § 431.12 of this subpart for the best practicable control technology currently available (BPT).

PART 423–MEAT PRODUCTS POINT SOURCE CATEGORY

40 CFR Subchapter N, Part 432 for the Meat Products Point Source Category is amended as follows:

§§ 432.17, 432.27, 432.37, 432.47, 432.67, 432.77, 432.87, 432.97 [Revised]

1. Sections 432.17, 432.27, 432.37, 432.47, 432.67, 432.77, 432.87, 432.97 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 432. Column (b) indicates the section number to be added to the text of the section indicated in column (a).

Subpart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Simple Slaughterhouse Subcategory	432.17	432.12
Subpart B—Complex Slaughterhouse Subcategory	432.27	432.22
Subpart C—Low-Processing Packinghouse Subcategory	432.37	432.32
Subpart D—High-Processing Packinghouse Subcategory	432.47	432.42
Subpart F—Meat Cutter Subcategory	432.67	432.62
Subpart G—Sausage and Luncheon Meats Processor Subcategory	432.77	432.72
Subpart H—Ham Processor Subcategory	432.87	432.82
Subpart I—Canned Meat Processor Subcategory	432.97	432.92

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

Except as provided in § 125.30–32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT).

2. Section 432.57 for Subpart E-Small Processor Subcategory is added to read as set forth below:

§ 432.57 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed
	Metric units (kg/kkg of finished product)	
BOD5	1.0	0.5
TSS	1.2	0.6
Oil and Grease	0.5	0.25
pH	(1)	(1)
Fecal coliforms	(2)	(2)
	English units (lb/1,000 lb. of finished product)	
BOD5	1.0	0.5
TSS	1.2	0.6
Oil and Grease	0.5	0.25
pH	(1)	(1)
Fecal coliforms	(2)	(2)

[1] Within the range 6.0 to 9.0.
[2] No limitation.

3. Section 432.107 for Subpart J-Renderer Subcategory is added to read as set forth below:

§ 432.107 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

(a) Subject to the provisions of paragraph (b) of this section, the following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed
	Metric units (Kg/kkg of finished product)	
BOD5	0.18	0.09
TSS	0.22	0.11
Oil and Grease	0.10	0.05
Fecal coliforms	(1)	(2)
pH	(2)	(2)
	English units (pounds per 1,000 lb. of finished product)	
BOD5	0.18	0.09
TSS	0.22	0.11
Oil and Grease	0.10	0.05
Fecal coliforms	(1)	(1)
pH	(2)	(2)

[1] Maximum at any time: 400 mpn/100 ml.
[2] Within the range 6.0 to 9.0.

(b) The limitations given in paragraph (a) of this section for BOD5 and TSS are derived for a renderer which does no cattle hide curing as part of the plant activities. If a renderer does conduct hide curing, the following empirical formulas should be used to derive an additive adjustment to the effluent limitations for BOD5 and TSS.

BOD5 Adjustment (kg/kkg RM=

$$\frac{3.6 \times \text{(number of hides)}}{\text{kg of raw material}}$$

$$\text{(lb/1,000 lb RM)} = \frac{7.9 \times \text{(number of hides)}}{\text{lbs of raw material}}$$

TSS Adjustment (kg/kkg RM=

$$\frac{6.2 \times \text{(number of hides)}}{\text{kg of raw material}}$$

$$\text{(lb/1,000 lb RM} = \frac{13.6 \times \text{(number of hides)}}{\text{lbs of raw material}}$$

PART 433—METAL FINISHING POINT SOURCE CATEGORY

Part 433 consisting of § 433.18 is added to 40 CFR Subchapter N to read as follows:

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

(a) Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the best conventional pollutant control technology:

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Milligrams per liter (mg/l)	
Oil and Grease	42	17
TSS	61	23
pH	Within 6.0 to 9.0	

(b) No user subject to the provisions of this subpart shall augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with this limitation.

(Secs. 301 and 304, Clean Water Act, 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)

PART 440—ORE MINING AND DRESSING POINT SOURCE CATEGORY

On June 14, 1982 at 47 FR 25682, EPA proposed to revise 40 CFR Part 440 for the Ore Mining and Dressing Point Source Category. EPA proposes to further amend proposed Part 440 as follows:

§§ 440.15, 440.35, 440.55, 440.65, 440.75, and 440.85 [Revised]

1. Proposed §§ 440.15, 440.35, 440.55, 440.65, 440.75 and 440.85 are revised. The text of each section is identical except for the section number in the heading and the section number referenced at the end of the section. The text of the sections is set out only once. Within the text are two blank spaces, one designated (a) and one designated (b). In the table preceding the text, column (a) indicates the section number to be added to the section heading for the respective subparts of Part 440. Column (b) indicates the section number to be added to the text of the section indicated in Column (a).

Supart	(a) Section number to be added to section heading	(b) Section number to be added to text of the section in (a)
Subpart A—Iron Ore Subcategory	440.15	440.12
Subpart C—Aluminum Ore Subcategory	440.35	440.32
Supart E—Uranium, Radium and Vanadium Subcategory	440.55	440.52
Subpart F—Mercury Ores Subcategory	440.65	440.62
Subpart G—Titanium Ore Subcategory	440.75	440.72
Subpart H—Tungsten Ore Subcategory	440.85	440.82

§ (a) Effluent Limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in § 125.30—125.32 any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT): The limitations shall be the same as those specified for conventional pollutants (which are defined in § 401.16) in *§ (b)* of this subpart for the best practicable control technology currently available (BPT). 2. Proposed § 440.125 is revised to read as follows:

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

Except as provided in Subpart M of this regulation and 40 CFR 125.30—125.32, any existing source subject to this subpart must achieve the following limitations:

(a) The concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver, platinum or molybdenum bearing ores or any combination of these ores from open-pit or underground operations, except gold placer mines, shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
pH	(1)	(1)
TSS	30.0	30.0

[1] Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged in mine drainage in mine drainage from mills that use forth-flotation process alone, or in conjunction with other processes, for the benefication of copper, lead, zinc, gold, silver, platinum or molybdenum ores, or any combination of these shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
pH	(1)	(1)
TSS	30.0	20.0

[1] Within the range 6.0 to 9.0.

(c)(1) There shall be no discharge of process wastewater from mines and mills that extract copper from ores or ore waste materials by the dump, heap, in-situ leach or vat-leach processes except as provided in paragraph (c)(2) of this section.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment

facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) There shall be no discharged of process wastewater from mills that use the cyanidation process to extract gold or silver except as provided in paragraph (d)(2) of this section.

(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

Appendices

Note.—Appendices A–D will not appear in the Code of Federal Regulations.

Appendix A—The Cost of Pollutant Removal By Publicly Owned Treatment Works

Part I of the BCT test requires that the cost and level of reduction of conventional pollutants by industrial dischargers be compared with the cost and level of reduction to remove the same pollutants by publicly owned treatment works (POTWs). The POTW comparison figure has been calculated by evaluating the change in costs and removals between secondary treatment (30 mg/1 BOD and 30 mg/1 TSS) and advanced secondary treatment (10 mg/1 BOD and 10 mg/1 TSS). The difference in cost is divided by the difference in pounds of conventional pollutants removed, resulting in an estimate of the "dollars per pound" of pollutant removed.

The following summary describes details of the specific calculation of this POTW cost figure. It involves five basic steps: First, the size distribution of POTWs is determined; second, the total annual costs for secondary and advanced secondary treatment (AST) are estimated; third, the pollutant removal capability of the system is calculated; fourth, the incremental costs in going from secondary to AST are divided by the additional pounds of pollutant removal; fifth, the dollars-per-pound figures calculated in step 4 are flow-weighted using the size distribution to determine a single POTW cost comparison figure. This is the same calculation as for the 1979 metholgy except for the first step.

All the POTW costs have been indexed to third quarter 1976 dollars to make them comparable to the industry costs which are in September 1976 dollars. The specific indices used are presented in the discussion below. The POTW cost figure is also updated to current year dollars by use of these indices.

Size Distribution of POTWs. The POTW cost figure is based on weighting the cost per pound of conventional pollutants removed from POTWs according to the size distribution of POTWs in the United States. The size distribution used in these calculations is based on the 1980 Needs Survey.[1] The size distribution used was calculated based on the number of POTWs which were operating or under construction in 1980 (see Table A1). The weighting factor is calculated by dividing the total flow for each group by the total flow for all POTWs.

[1] "The 1980 Needs Survey: Conveyance, Treatment, and Control of Municipal Wastewater, Combined Sewer Overflows, and Stormwater Runoff; Summaries of Technical Data", FRS–23 EPA 430/9–81–008, February 10, 1981, Table 4.

TABLE A1.—POTW SIZE DISTRIBUTION

	Size range (mgd)					
From	0	.106	1.06	10.6	50.2	
To	0.105	1.05	10.5	50.2	+	Total
Number of plants	5021	7033	2686	415	96	15251
Total flow	259	2675	8836	9290	13354	34415
Average flow	0.0515	0.3803	3.290	22.39	139.1	2.257
Weighting factor	.0075	.0777	0.2567	0.2700	0.3880	0.9999

Because the cost curves which are used to calculate the POTW cost figure are most reliable in the flow range of one to 50 mgd, the distribution and weights of the POTW distribution are capped by these lower and upper bounds. A one mgd POTW represents the 0–0.105 mgd size group and the 0.106 to 1.05 size group of POTWs and a 50 mgd POTW represents the 50.2 mgd and greater size group of POTWs. A 3.29 mgd POTW represents the 1.06 to 10.5 mgd size group, and a 22.39 mgd POTW represents to 10.6 to 50.2 mgd size group.

Total Annual POTW Costs. The Agency based its estimates of annual POTW costs on information from two EPA documents. These documents, one for construction costs [2] and one for operation and maintenance costs, [3] replace two previous documents found to contain critical errors. These new documents provide the most up-to-date information regarding the costs of constructing and operation POTWs.

The POTW costs used in estimating the cost of pollutant removal are the total annual costs of upgrading a secondary treatment (ST) system to advanced secondary treatment (AST) system. This is calculated by estimating the cost of a new advanced secondary system and deducting the savings that are expected if secondary treatment is already in place. Total annual costs include capital charges, interest, and operation and maintenance expenses.

Table A2 gives the treatment cost curves used in calculating the incremental costs associated in upgrading from second treatment to advanced secondary treatment.

TABLE A2: TREATMENT COST EQUATIONS

Treatment level	Equation [1]	Index factor (to 1976 dollars)
CAPITAL COST		
Advanced Secondary Treatment [2].	$\$2.76 \times 10^6 Q^{0.75}$	$0.816
Savings From Secondary Treatment [3].	$\$1.79 \times 10^6 Q^{0.82}$	.821
O&M COST		
Advanced Secondary Treatment [4].	$\$0.952 \times 10^6 Q^{0.816}$	.652
Secondary Treatment [5]	$\$1.01 \times 10^{0.770}$	.652

[1] Q = flow size in millions of gallons per day.
[2] Construction Cost Document. *Supra* note 2, Fig. 4.1, curve 2.
[3] Construction Cost Document. *Supra*, note 2, Figure 4.1, curve B.
[4] O&M Cost Document. *Supra*, note 3, Figure 3.17.
[5] O&M Cost Document. *Supra*, note 3, Figure 3.3.

All costs are indexed to third quarter 1976 dollars by the use of cost indices

[2] "Construction Costs for Municipal Wastewater Treatment Plants: 1973–1978", EPA 430/5–80–OXX, May, 1980 (hereinafter cited as "Construction Cost Document").

[3] "Technical Report, Operation and Maintenance Costs for Municipal Wastewater Facilities", EPA 430/9–81–004 (hereinafter cited as "O&M Cost Document").

for POTWs.[4] Capital costs are amortized for 30 years at a 10% interest rate.[5]

AST Costs. The costs for AST by flow size are:

Flow (MGD)	Dollars in millions				
	Capital cost	Annual, indexed capital cost	O&M cost	Indexed O&M cost	Total cost
1.0	$2.760	$2.397	$0.952	$0.620	$03.01
3.29	6.742	5.83	2.516	1.64	7.47
22.39	28.409	24.57	12.03	7.84	32.41
50.0	51.896	44.89	23.17	15.11	60.00

Savings from ST Costs. The costs savings for in-place ST for upgrading to AST treatment by flow size are:

Flow (MGD)	Dollars in millions				
	Capital cost	Annual, indexed capital cost	O&M cost	Indexed O&M cost	Total cost
1.0	$1.790	$0.156	$0.101	$0.066	$0.222
3.29	4.753	.414	.253	.165	.579
22.39	22.903	1.993	1.106	.721	2.714
50.0	44.260	3.852	2.054	1.339	5.191

Incremental Costs. Incremental costs for each flow size are obtained by substracting the total annual AST costs from the savings from existing ST. The resulting incremental costs are listed in Table A3.

TABLE A3.—INCREMENTAL ANNUAL COSTS ($ MILLIONS)

Flow (MGD)	Total annual costs		Total annual incremental cost
	AST	ST	
1.0	$0.301	$0.222	$0.079
3.29	.747	.579	.168
22.39	3.241	2.714	.527
50.0	6.000	5.191	.809

Pollutant Removal by POTWs. The incremental number of pounds of conventional pollutants removed by advanced secondary treatment beyond secondary treatment must be estimated to obtain the incremental annual costs.

The pounds of pollutants removed equal the flow of the POTW times the change in concentrations of the pollutants as they pass through the system. For the calculations presented here the influent concentration is 210 mg/l for BOD and 230 mg/l for TSS.[6]

Effluent characteristics of 30 mg/l BOD and 30 mg/l for secondary treatment were selected because this is the legal requirement for most secondary treatment plants established by EPA. Effluent characteristics of 10 mg/l BOD and 10 mg/l TSS for advanced secondary treatment are used since they represent the best performance for advanced secondary treatment.

Both the 30 mg/1 and the 10 mg/1 performance levels correspond to the maximum 30-day average performance of the POTW. The difference in the BOD plus TSS effluent levels from ST to AST is 40 mg/1. This change results in an incremental pollutant removal of .122 million pounds per year for each million gallons a day of flow.[7] The incremental anual pollutant removal for each flow size is listed in Table A4.

TABLE A4.—INCREMENTAL POLLUTANT REMOVAL

Flow mgd	Million pounds removed
1.0	0.122
3.29	.401
22.39	2.73
50.0	6.10

Incremental Cost of Removal. To calculate the cost of pollutant removal of upgrading secondary treatment to advanced secondary treatment, the additional costs must be divided by the additional removal of BOD and TSS. Specifically the calculation is:

$$= \frac{\text{incremental total annual costs}}{\text{incremental annual pollutant removal}}$$

This calculation is performed for each flow size, then weighted by the factors that appear in Table A1. Table A5 summerizes these calculations.

TABLE A5.—POTW BENCHMARK CALCULATIONS

Flow (MGD)	Incremental Cost ($ million per year)	Incremental Removal (million lbs. per year)	Per pound	Weighting Factor	Weighted per pound
1	$0.079	0.122	$0.65	0.0852	$0.06
3.29	.168	.401	.42	.2567	.11
22.39	.527	2.73	.19	.2700	.05
50.0	.809	6.10	.13	.3880	.05
Total					.27

This cost is indexed for a number of time periods below:

INDEXED POTW BENCHMARKS

Year/quarter	1st	2nd	3rd	4th
1976			0.27	0.27
1977	0.28	0.29	.30	.30
1978	.30	.30	.31	.33
1979	.34	.35	.35	.36
1980	.37	.40	.42	.42
1981	.42	.45	.45	.46

Appendix B—Calculation of the Benchmark for the Industry Cost Test

Part 2 of the BCT test requires that the cost-effectiveness of controlling the discharge of conventional pollutants by industrial dischargers be evaluated for each industry. In order to develop a benchmark that assesses a reasonable relationship between cost and removal, EPA has developed an industry cost benchmark which compares the cost per pound of conventional pollutant removal in going from primary to secondary treatment levels with that of going from secondary to advanced secondary treatment levels.

The following details the specific calculation of the industry cost benchmark. The computation requires seven steps: First, the size distribution of POTWs is determined; second, the total annual costs for primary, secondary and advanced secondary treatment are estimated; third, the pollutant removals at each treatment level are calculated; fourth, the additional costs upgrading from primary to secondary treatment and from secondary to advanced secondary treatment are calculated; fifth, these incremental costs are divided by the respective incremental pounds of pollutants removed; sixth, the incremental dollar per pound figures for the secondary to advanced secondary

[4] "Construction Cost Indexes [SIC]" Office of Water Program Operations, EPA, first quarter 1976 et seq (hereinafter cited as "Construction Cost Index"). Two different indices are used. For AST, EPA used the LCAT index; for ST, the SCCT index.

For Operating costs, the reference is:

"Index of Direct Costs for Operation, Maintenance and Repair Based on Composite 5 MGD Municipal Wastewater Treatment Plants", 1967, *et seq* (hereinafter cited as "O&M Cost Index). EPA used the average escalation index.

[5] *Management Accounting*, Robert Anthony and James Reece, June 1975, Appendix Tables, Table B. EPA used a multiplier of 0.106.

[6] "Areawide Assessment Procedures Mannual, Appendix H, Point Source Control Alternatives," EPA Laboratories, Cincinnati, Ohio, at H-14.

[7] The calculation of this figure is as follows: 40mg/1 x 3.785 1/gal x 2.2 x 10^{-6} 1b/mg x 365 days/yr=.122 million pounds/year per million gallons/day.

increment are divided by those for the primary to secondary increment; seventh, these ratios are weighted by the size distribution factors to obtain a single benchmark.

The method for calculating the incremental dollar per pound figures in going from secondary to advanced secondary treatment has already been calculated (see Table A1, Appendix A). The calculations for the incremental dollar per pound figure in going from primary to secondary treatment are explained in detail below.

Size Distribution of POTWs. EPA based its size distribution of POTWs on data found in the 1980 Needs Survey for municipal wastewater treatment. (*1*) EPA modified the distribution to exclude plants with flows of less than 1 mgd or more than 50 mgd based on the likely errors in cost estimates outside this flow range. The size distribution used appears in Table B1

TABLE B1.—FLOW-SIZE DISTRIBUTION

Flow size (MDG)	Weighting factor
1.0	0.0852
3.29	0.2567
22.39	0.2700
50.0	0.3880
Total	0.9999

Total Annual POTW Costs. EPA based its estimates of annual POTW costs on information from three EPA documents. The Construction Cost Document (*2*) and the O&M Cost Document (*3*) are used to estimate the costs of advanced secondary and secondary capital and O&M costs and primary treatment capital costs. O&M costs for primary treatment are not included in these documents. In order to develop the primary treatment O&M cost curve, EPA is using a 1978 O&M cost document.(*4*) This document was found to contain critical errors in the development of the cost curves from the underlying data. The regression of total annual cost versus flow size was calculated by expressing flow size as a function of cost. By switching the dependent variable (total annual cost) and the independent variable (flow size) in the regression analysis, the resulting cost curves incorrectly estimated the costs of treatment. EPA has recalculated the O&M cost curve for primary treatment, using the points that appear in the graph of the curve. (*5*)

Table B2 shows the curve used in calculating the incremental cost of upgrading a primary treatment facility.

TABLE B2.—TREATMENT COST CURVES

Treatment level	Curve (Q = flow in mgd)	Indexation factor to obtain 1976 dollars
CAPITAL COST		
Secondary Treatment	$\$2.66 \times 10^6 Q^{0.72}$	$0.821
Savings from Primary Treatment.	$\$3.32 \times 10^5 Q^{1.08}$	.821
O&M COST		
Secondary Treatment	$\$1.01 \times 10^5 Q^{0.77}$	.652
Savings from Primary Treatment.	$\$5.67 \times 10^4 Q^{0.693}$	.928

All costs are indexed to third quarter 1976 dollars by the use of cost index factors developed by EPA for POTWs. (*6*) Capital costs are amortizcd over 30 years at a 10 percent rate. (*7*) Q represents flow in millions of gallons a day.

Secondary Treatment Costs. The costs for secondary treatment by flow size are:

Flow (mgd)	Dollars in millions				
	Captal cost	Annual, indexed capital cost	O&M cost	Indexed O&M cost	Total cost
1.0	2.66	0.231	0.101	0.0658	0.297
3.29	6.27	.546	.253	.165	.711
22.39	24.94	2.17	1.11	.721	2.89
50.0	44.5	3.87	2.05	1.34	5.21

Savings from Primary Treatment. The costs saved for an existing primary treatment facility when upgrading to secondary treatment by flow size are:

Flow (mgd)	Dollars in millions				
	Capital cost	Annual, indexed capital cost	O&M cost	Indexed O&M cost	Total cost
1.0	0.332	0.0289	0.057	0.0526	0.0815
3.29	1.20	.104	.130	1.21	.225
22.39	9.53	.829	.492	.456	1.28
50.0	22.7	1.98	.860	.798	2.78

Incremental Costs. Incremental costs for each flow size are obtained by subtracting the total annual secondary treatment costs from the savings from primary treatment costs. The resulting incremental costs are listed in Table B3.

TABLE B3.—INCREMENTAL ANNUAL COSTS: PRIMARY UPGRADE TO SECONDARY

[millions of dollars]

Flow (mgd)	Total annual costs		Total annual incremental costs
	Primary	Secondary	
1.0	$ .0815	$ .297	$ .217
3.29	.225	.711	.486
22.39	1.28	2.89	1.61

TABLE B3.—INCREMENTAL ANNUAL COSTS: PRIMARY UPGRADE TO SECONDARY—Continued

[millions of dollars]

Flow (mgd)	Total annual costs		Total annual incremental costs
	Primary	Secondary	
50.0	2.78	5.21	2.43

Pollutant Removal by POTWs. The other half of calculating the cost per pound of pollutant removal requires the determination of the number of pounds of conventional pollutants removed by advanced secondary treatment beyond secondary treatment. The incremental pounds of pollutants removed equal the flow of the POTW times the reduction effluent in concentrations of the pollutants obtained from more advanced treatment.

The primary treatment effluent levels are set at 130 mg/l for BOD and 100 mg/l for TSS which are commonly used in sewage treatment literature. (*8*) Effluent characteristics of 30 mg/l BOD and 30 mg/l TSS for secondary treatment were selected because this is the legal requirement for most POTWs as established by EPA.

The change in concentration of conventional pollutants is 170 mg/l (230 mg/l minus 60 mg/l). In terms of pound removals, this change transfers to a total incremental annual pollutant removal of .517 million pounds a year for each mgd of flow. (*9*) The incremental annual pollutant removal for each flow size is listed in Table B4.

TABLE B4.—INCREMENTAL ANNUAL POLLUTANT REMOVAL: PRIMARY UPGRADED TO SECONDARY

Flow (mgd)	Million pounds removed annually
1.0	.517
3.20	1.70
22.39	11.6
50.0	25.8

Incremental Cost of Removal. To calculate the cost of pollutant removal for upgrading primary treatment to secondary treatment, the additional costs must be divided by the additional removal of BOD and TSS for each flow size. Specifically the calculation is:

$$= \frac{\text{incremental total annual costs}}{\text{incremental annual pollutant removal}}$$

Table B5 summarizes these calculations.

TABLE B5.—INCREMENTAL ANNUAL COST PER POUND OF REMOVAL: PRIMARY TO SECONDARY TREATMENT

(1)	(2)	(3)	(2)÷(3)
Flow (mgd)	Incremental annual cost ($ million)	Incremental annual removal (lbs. million)	Dollar per pound removed
1.0	$ .217	.517	.42
3.29	.486	1.70	.28
22.39	1.61	11.6	.14
50.0	2.43	25.8	.09

Industry Cost Benchmark. The industry cost benchmark is obtained by dividing the dollar per pound increment from secondary to advanced secondary treatment (*10*) by the dollar per pound increment from primary to secondary treatment. Once these ratios have been calculated, each ratio for each flow size is multiplied by its size distribution weight to obtain a single industry cost benchmark. Table B6 summarizes these computations.

TABLE B6—INDUSTRY COST BENCHMARK

Flow (mgd)	Incremental dollar per pound		Cost ratio	Weighting factors	Weighted ratios[1]
	Primary to secondary treatment	Secondary to advanced secondary treatment			
1.0	$0.42	$0.65	1.55	.0852	.13
3.29	.28	.42	1.50	.2567	.38
22.39	.14	.19	1.34	.2700	.36
50.0	.09	.13	1.44	.3880	.56

[1] Industry cost ratio 1.43.

This benchmark is not indexed by time periods because the variations in the result are likely to be small.

Footnotes

(*1*) See note 1, Appendix A. See also Table A1, Appendix A, for data on the raw distribution.

(*2*) See note 2, Appendix A.

(*3*) See note 3, Appendix A.

(*4*) "Analysis of Operations and Maintenance Costs for Municipal Wastewater Treatment Systems, EPA 430/9–77–015, May 1978 (hereinafter cited as the "1978 O&M Cost Document"), Fig. E. 2–1.

(*5*) The equation that appears in the document is $\text{Cost} = \$.453 \times 10^4 Q^{1.01}$. This cost is expressed in 3rd quarter 1977 dollars.

(*6*) See note 9, Appendix A. The primary factor is 206/222=0.928.

(*7*) See note 10, Appendix A. The capital recovery factor used is 0.106.

(*8*) "Areawide Assessment Procedures Manual, Appendix H, Point Source Control Alternatives", EPA Laboratories, Cincinnati, Ohio, P. H–16. This effluent level assumes influent concentrations of 210 mg/l for BOD and 230 mg/l for TSS.

(*9*) The calculation of this figure is as follows:

$$170\frac{mg}{l} \times 3.785\frac{1}{gal} \times 2.2 \times 10^6\frac{lb}{mg} \times 365\frac{days}{yr} \times 10^6\frac{gal}{day} = 5.17 \times 10^5\frac{lbs}{yr} \text{ per mgd}$$

(*10*) See Table A5, Appendix A.

Appendix C—Documents Used in the Analysis

The data for each of the industry categories were taken from the documents listed below:

1. *Dairy Products.*

Dairy Products Processing, EPA 440/1–74–021–a.

2. *Grain Mills.*

Grain Processing, EPA 440/1/74–028–a.

Animal Feed, Breakfast Cereal and Wheat Starch, EPA 440/1–74/039–a.

Corn Wet Milling, EPA 440/1–78/028–b, Supplement.

3. *Fruits and Vegetables.*

Apple, Citrus and Potato Products, EPA 440/1–74–027–a.

Economic Analysis of the Fruits and Vegetables Category (Phase II), EPA 230/1–75–036, Supplement, April 1976.

4. *Seafood.*

Fish Meal, Salmon, Bottom Fish, Clam, Oyster, Sardine, Scallop, Herring, and Abalone, EPA 440/1–75/041–a.

Catfish, Crab, Shrimp and Tuna, EPA 440/1–74–020–a.

Qualitative Economic Analysis of the Seafood Industry, May 1982

5. *Sugar Processing.*

Beet Sugar Processing, EPA 440/1–74–002–b.

Cane Sugar Processing, EPA 440/1–74–002–c.

6. *Cement Manufacturing.*

Cement Maufacturing, EPA 440/1–74–005–a.

7. *Feedlots.*

Feedlots, EPA 440/1–74–004–a.

8. *Phosphate Manufacturing.*

Other Non-Fertilizer Phosphate Chemicals, EPA 440/1–75/043–a.

9. *Ferroalloys.*

Smelting and Slag Processing, EPA 440/1–74/008–a.

Calcium Carbide, EPA 440/1–75/068.

Electrolytic Ferroalloys, EPA 440/1–75/038–a.

10. *Glass Manufacturing.*

Pressed and Blown Glass, EPA 440/1–75–034–a.

Flat Glass, EPA 440/1–74/001–c.

Insulation Fiberglass, EPA 440/1–74–001–b.

11. *Meat Products.*

Red Meat Processing, EPA 440/1–74–102–a.

Processor, EPA 440/1–74/031.

Independent Rendering, EPA 440/1–77/031–e, Supplement.

12. *Timber Products.*

Timber Products, EPA 440/1–81/023.

Economic Impact Analysis of Wet Process Hardboard and Insulation Board, EPA 440/2–80–089.

Economic Impact Analysis of Wood Preserving, EPA 440/2–80–087.

13. *Pulp, Paper and Paperboard Mills.*

Pulp, Paper, and Paperboard Mills, EPA 440/1–80–025–b.

Economic Impact Analysis of Pulp, Paper, and Paperboard Mills, EPA 440/2–80–086, Vols. I and II.

14. *Inorganic Chemicals Manufacturing.*

Inorganic Chemicals Manufacturing Point Source Category, EPA 440/1–82/007.

Economic Impact Analysis of Inorganic Chemicals Manufacturing Industry, EPA 440/2–81/023.

15. *Ore Mining and Dressing.*

Ore mining and Dressing (Proposed), EPA 440/1–82/061–b.

16. *Metal Finishing.*

Metal Finishing (Proposed), EPA 440/1–82/091–b.

Economic Analysis of Proposed Effluent Standards and Limitations for the Metal Finishing Industry, EPA 440/2–82/004.

Appendix D—Summary of Data

Industry subcategory	Incremental (per pound)	Comparable POTW/ benchmark	Industry cost ratio
	(1)	(2)	(3)
Grain Mills			
Corn dry milling:			
Small	$0.85.	0.27	.....
Large	.56	.27	.....
Bulgar wheat	22.00	.27	.....
Parboiled rice	1.02	.27	.....
Ready-to-eat:			
Small	.76	.27	.....
Medium	.57	.27	.....
Large	.45	.27	.....
Wheat starch and gluten	.20	.27	2.5
Canned and Preserved Fruits and Vegetables			
Apple juice:			
Small	1.16	.27	.....
Large	.62	.27	.....
Apple products:			
Small	3.74	.27	.....
Large	.35	.27	.....
Citrus products:			
Small	.39	.27	.....
Large	.13	.27	2.17
Frozen potato products:			
Small	.15	.27	7.50
Large	.12	.27	12.00
Dehydrated potato products:			
Small	.20	.27	4.00
Large	.13	.27	4.33
Canned and Preserved Fruits; Canned and Preserved Vegetables			
Mushrooms:			
Small	.72	.27	.....
Large	.59	.27	.....
Sauerkraut:			
Small	3.50	.27	.....

Industry subcategory	Incremental (per pound)	Comparable POTW/ benchmark	Industry cost ratio
	(1)	(2)	(3)
Large	2.90	.27	
Tomatoes:			
Small	.95	.27	
Large	.49	.27	
Corn, peas:			
Extra Small	1.29	.27	
Small	1.29	.27	
Medium	.80	.27	
Large	.51	.27	
Corn, peas: Small	.70	.27	
Green beans: Medium	1.22	.27	
Carrots: Large	1.32	.27	
Frozen corn: Extra small	.63	.27	
Peas, green: Small	1.57	.27	
Beans: Medium	1.42	.27	
Carrots: Large	1.10	.27	
Broccoli: Small	1.07	.27	
Spinach: Medium	.99	.27	
Lima bean: Large	.77	.27	
Cauliflower			
Tomato, dry: Extra small	.75	.27	
Bean:			
Small	1.24	.27	
Medium	.76	.27	
Large	.60	.27	
Cherry, green: Small	1.50	.27	
Bean, pear: Medium	.90	.27	
Plum: Large	2.10	.27	
Cherry: Small	5.25	.27	
Caneberry: Large	1.20	.27	
Strawberry			
Canned and Miscellaneous Specialties			
Potato chips:			
Extra Small	1.50	.27	
Small	.84	.27	
Medium	1.14	.27	
Large	.74	.27	
Canned and preserved seafoods			
Farm-raised catfish:			
Small	1.36	.27	
Medium	1.12	.27	
Large	.84	.27	
Conv. blue crab		.27	
Mech. blue crab:			
Small	.07	.27	
Medium	.06	.27	
Large	.04	.27	
Non-remote Alaskan crabmeat:			
Small	15.17	.27	
Medium	12.92	.27	
Large	10.98	.27	
Remote Alaskan crabmeat:			
Small	.07	.27	
Medium	.04	.27	
Large	.05	.27	
Non-remote Alaskan whole crab:			
Small	19.78	.27	
Medium	14.43	.27	
Large	10.39	.27	
Remote Alaskan whole crab:			
Small	.13	.27	
Medium	.10	.27	
Large	.07	.27	
Dungeness and tanner crab:			
Small	3.23	.27	
Medium	2.10	.27	
Large	1.47	.27	
Non-remote shrimp:			
Small	.33	.27	
Medium	.25	.27	
Large	.18	.27	
Remote Alaskan shrimp:			
Small	.05	.27	
Medium	.04	.27	
Large	.03	.27	
Northern shrimp:			
Small	.05	.27	
Medium	.04	.27	
Large	.03	.27	
Southern-non-breaded shrimp:			
Small	.07	.27	
Medium	.05	.27	
Large	.04	.27	
Breaded shrimp:			
Small	.30	.27	
Medium	.17	.27	
Large	.11	.27	
Tuna			
Small	.55	.27	
Medium	.28	.27	
Large	.21	.27	
Fish meal	1.17	.27	
West coast hand butchered salmon:			
Small	1.58	.27	
Large	.70	.27	
West coast mech. salmon:			
Small	.13	.27	
Large	.09	.27	
Alaskan bottom fish		.27	
Non-Alaskan mech.:			
Small	.27	.27	
Large	.08	.27	
Non-Alaskan conv. bottom fish:			
Small	.34	.27	
Medium	.24	.27	
Large	.15	.27	
Hand-shucked clam:	[1]	[1]	[1]
Mechanized clam:			
Small	.01	.27	
Medium	.01	.27	
Pacific coast hand-shucked oyster	[1]	[1]	[1]
Atlantic & Gulf Coast hand-shucked oyster	[1]	[1]	[1]
Steamed and canned oyster	.03	.27	
Sardine:			
Small	7.84	.27	
Medium	4.79	.27	
Large	3.96	.27	
Non-Alaskan scallop	[1]	[1]	[1]
Non-Alaskan herring filet	.04	.27	
Abalone processing	[1]	[1]	[1]
Sugar Processing			
Beet sugar	.03	.27	3.0
Crystalline cane sugar:			
Small	.91	.27	
Large	.58	.27	
Liquid cane sugar	.64	.27	
Cement Manufacturing			
Leaching	4.40	.27	
Feedlots			
Duck	[2]	[2]	[2]
Ferroalloys Manufacturing			
Open electric furnaces, wet	.84	27	
Covered elec. furnace	.83	.27	
Slag	.02	.27	1.0
Covered calcium carbide	1.58	.27	
Electrolytic manganese	1.45	.27	
Electrolytic chromium	1.98	.27	
Glass Manufacturing			
Insulation fiberglass	[3]	[3]	[3]
Plate	.33	.27	
Float	14.42	.27	
Auto. glass tempering	2.88	.27	
Auto. glass laminating	5.58	.27	
Glass container mftg.	3.80	.27	
Glass tubing	2.76	.27	
Television picture tube	8.56	.27	
Incandescent lamp	26.29	.27	
Hand pressed and blown glass	[4]	[4]	[4]
Meat products			
Small processor	0	.27	0
Renderers	0	.27	0
Phosphates			
Sodium phosphates	[5]	[5]	[5]
Timber			
Wet process hardboard	.24	.30	.15
Pulp, paper, and paperboard [6]			
Dissolving kraft:			
Option:			
1	1.04	.30	11.6
2	.48	.30	5.3
3	.53	.30	5.9
4	.31	.30	3.4
Market bleached kraft:			
Option:			
1	.33	.30	1.57
2	.61	.30	2.90
3	.63	.30	3.00
4	.49	.30	2.33
BCT bleached kraft:			
Option:			
1	.31	.30	2.38
2	.46	.30	3.54
3	.52	.30	4.00
4	.43	.30	3.31
Alkaline fine: [7]			
Option:			
1	1.05	.30	8.75
2	.74	.30	6.17
3	.82	.30	6.83
4	.46	.30	3.83
Unbleached kraft:			
Option:			
1	.40	30	1.43
2	.64	.30	2.29
3	.62	.30	2.21
4	.67	.30	2.39
Dissolving sulfite pulp:			
Option:			
1	.70	.30	4.67
2	.30	.30	2.00
3	.53	.30	3.53
4	.43	.30	2.87
Papergrade sulfite: [8]			
Option:			
1	.20	.30	.91
2	.42	.30	1.91
3	.38	.30	1.73
4	.42	.30	1.91
Groundwood—Thermo-mech.:			
Option:			
1	.08	.30	.50
2	.64	.30	4.00
3	.55	.30	3.44
4	.62	.30	3.88
Groundwood—CMN papers:			
Option:			
1	.44	.30	2.59
2	1.06	.30	6.24
3	.92	.30	5.41
4	.65	.30	3.82
Groundwood—Fine papers:			
Option:			
1	.73	.30	4.87
2	1.13	.30	7.53
3	.97	.30	6.47
4	.75	.30	5.00
Deink:			
Option:			
1	.14	.30	1.56
2	.60	.30	6.67
3	.52	.30	5.78
4	.68	.30	7.56
Tissue from wastepaper:			
Option:			
1	.51	.30	1.50
2	2.00	.30	5.88
3	1.80	.30	5.29
4	.47	.30	1.38
Paperboard from wastepaper:			
Option:			
1	.79	.30	1.80
2	1.84	.30	4.18
3	1.05	.30	2.39
4	.79	.30	1.80
Wastepaper molded products:			
Option:			
1	.64	.30	.51
2	2.85	.30	2.28
3	1.66	.30	1.33
4	.55	.30	.44
Builders paper and roofing felt:			
Option:			
1	.44	.30	2.32
2	3.16	.30	16.6
3	1.30	.30	6.84
4	.51	.30	2.68

Industry subcategory	Incremental (per pound)	Comparable POTW/ benchmark	Industry cost ratio
	(1)	(2)	(3)
Nonintegrated—Fine papers:			
Option:			
1	.37	.30	1.54
2	.78	.30	3.25
3	.68	.30	2.83
4	.45	.30	1.96
Nonintegrated—Tissue papers:			
Option:			
1	.45	.30	1.45
2	5.62	.30	18.1
3	2.67	.30	8.61
4	1.56	.30	5.03
Nonintegrated—Lightweight:			
Option:			
1	.83	.30	1.98
2	5.23	.30	12.4
3	2.58	.30	6.14
4	1.44	.30	3.43
Semi-Chemical:			
Option:			
1	.65	.30	1.76
2	.54	.30	1.46
3	.65	.30	1.76
4	1.02	.30	2.76
Unbleached Kraft and Semi-Chemical:			
Option:			
1	.42	.30	2.00
2	.48	.30	2.29
3	.49	.30	2.33
4	.98	.30	4.67
Nonintegrated filter and non-woven papers:			
Option:			
1	.83	.30	.19
2	6.09	.30	1.39
3	3.33	.30	.76
4	1.44	.30	.33
Nonintegrated paperboard:			
Option:			
1	4.51	.30	11.6
2	14.63	.30	37.5
3	9.56	.30	24.5
4	3.45	.30	8.85
Inorganic Chemical Manufacturing			
Chlor-alkali—diaphragm cell	.53	.30	.....
Hydrofluoric acid	.32	.30	.....
Ore Mining and Dressing			
Iron ore	.27	.42	.....
Aluminum ore	.46	.42	.....
Radium, uranium, vanadium ore	.47	.42	.....
Titanium ore	.40	.42	.....
Tungsten ore	.37	.42	.....
Copper, lead, zinc, gold, silver, platinum, and molybdenum	.34	.42	.....
Metal Finishing			
Metal finishing	10.86	.....	.....

[1] No costs (except housekeeping) associated with meeting BAT.
[2] Not amenable to analysis.
[3] BAT technology applies to wastewater of wet-scrubbers only, costs and removals not available.
[4] Costs unknown.
[5] Minimal costs associated with meeting BAT.
[6] Note: EPA reviewed all the cost data for the BCT guidelines. In some cases, the cost per pound figures changed from what appeared in the **Federal Register** on January 6, 1981 (46 FR 1430).
[7] The calculations presented here apply to both the Fine Bleached Kraft and Soda subcategories.
[8] The calculations presented here apply to the Blow Pit Wash, and Drum Wash Papergrade Sulfite subcategories.

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