ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 405, 406, 407, 408, 409, 411, 412, 418, 422, 424, 426, 427, 432

[FRL 1305-1]

Best Conventional Pollutant Control Technology; Reasonableness of Existing Effluent Limitation Guidelines

AGENCY: Environmental Protection Agency.

ACTION: Final rules.

SUMMARY: EPA publishes the results of its review of effluent limitations on conventional pollutants in certain industries. In some industries, effluent limitations representing "best conventional pollutant control technology" (BCT) are promulgated. These limitations will replace limitations representing "best available technology economically achievable" (BAT) previously established for conventional pollutants. In other industries, BAT limitations on conventional pollutants are withdrawn, and BCT limitations will be promulgated at a later date.

EPA initially proposed BCT limitations on August 23, 1978. At that time, the public was invited to comment on the proposed regulations, and a public meeting was held. The comments received from the public have all been reviewed and evaluated by EPA. They have been incorporated into this final rulemaking package.

DATE: The effective date of these regulations will be September 28, 1979.

FOR FURTHER INFORMATION CONTACT: Ms. Emily Hartnell, Office of Analysis and Evaluation (WH-586), EPA, 401 M Street S.W., Washington D.C. 20460, 202-755-2484.

SUPPLEMENTARY INFORMATION:

1. Background

Legal Basis.

On August 23, 1978, EPA published proposed "best conventional pollutant control technology" (BCT) for selected industries. The proposed regulations were developed in response to Section 304(b)(4)(B) of the 1977 Amendments to the Clean Water Act (CWA). Section 304(b)(4)(B) instructs EPA to determine BCT through 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 additional consideration be given in making BCT determinations 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 it replaces "best available technology economically achievable" (BAT) for the control of conventional pollutants. BAT will remain in force for all non-conventional and toxic pollutants. Effluent limitations representing BCT may not be more stringent than BAT. However, BCT, like BAT, is subject to periodic review, and progress in waste treatment technology may warrant subsequent revision. In no case will BCT limitations be less stringent than limitations representing "best practicable technology currently available" (BPT).

Section 73 of the CWA of 1977 directs the Agency to review, immediately, all existing final or interim final BAT effluent guidelines for conventional pollutants in those industries not covered in the Settlement Agreement reached in *NRDC* v. *Train*, 8 ERC 2120 (D.D.C. 1976). These industries are often referred to as "secondary industries." This review was to be completed within 90 days of enactment of the Act.

2. Industries Covered by This Review

As directed by Congress, EPA has evaluated all BAT regulations for conventional pollutants which apply to industries not covered by the NRDC Settlement Agreement (those not listed in Table 2 of Committee Print No. 95-30 of the Committee on Public Works and Transportation of the House of Representatives). Thirteen secondary industry categories have final or interim final BAT effluent guidelines. These are listed in Tables 1 and 2. Complete analysis has not been carried out on all of the subcategories in these industries. In those cases where conventional pollutant BAT limitations are equivalent to BPT, no further analysis is necessary. Since BPT constitutes a floor below which BCT may not be established, all BAT limitations set at that point are reasonable, and are being promulgated as BCT. The 20 subcategories which fall into this group are listed in Table 1.

The 93 subcategories in Table 2 were studied further. Of the 93 subcategories, BAT regulations for 45 are not finally promulgated or are withdrawn for a variety of other reasons. BCT limitations will be set at a later date, and BPT alone will remain in effect. In some instances, industry studies currently underway are expected to result shortly in the necessary data to establish new standards (the seafoods industry, the cane sugar subcategories of the sugar processing industry, and three subcategories in the fruit and vegetable processing industry). In other instances, data submitted by industry warrants further consideration (four subcategories in the meat processing industry, the beet sugar subcategory of the sugar processing industry, the frozen potato subcategory, and parts of the condensed milk and condensed whey subcategory). Adequate information is not currently available on industry operations to conduct the necessary analysis for duck feedlots. In a final case, some limitations in certain meat products subcategories have been remanded by a court for reconsideration, and BPT will be set at the conclusion of that process.

EPA expects to use the methodology employed in this BCT review when an analysis of conventional pollutant treatment requirements is conducted for the primary industries (those industries to be covered by the Consent Agreement). National BCT limitations will be proposed and promulgated along with BAT, pretreatment, and new source standards. The explicit application of the BCT methodology to each industry will be detailed at the time each regulation is proposed.

3. Pollutants Covered by the Review

Section 304(a)(4) of the Act specifies that conventional pollutants should include, but not be limited to, biochemical oxygen demanding pollutants (BOD5), total suspended solids (TSS), fecal coliform, and pH. The Agency, in a separate action, has designated oil and grease as a conventional pollutant (44 FR 44501, July 30, 1979) and this review of BAT effluent guidelines includes oil and grease in the analysis of reasonableness where appropriate. In the case of both fecal coliform and pH, the BAT regulations under review were in all cases equivalent to BPT regulations. Therefore, no further analysis has been performed on these pollutants, and BCT controls of pH and fecal coliform will be the same as BPT. Consequently, the pollutants considered in this review are BOD5, TSS, and oil and grease. If, at any time, pollutants are added or deleted from the conventional pollutant list, the Agency will reevaluate all effluent guidelines affected by such revisions.

4. Methodology for Determining Reasonableness of BAT Regulations

(a) *Background.* The objective of this review is to evaluate existing BAT limitations for the "secondary" industries to determine if they satisfy the criteria for BCT contained in section 304(b)(4)(B). That section, which requires a consideration of the "cost reasonableness" of effluent limitations for conventional pollutants, has necessitated the development of a wholly new methodology for evaluating existing effluent limitations and for developing subsequent BCT limitations.

In developing the methodology for this regulation, EPA was guided both by the statutory language of section 304(b)(4)(B) and by Congress' underlying objectives in establishing BCT. The legislative history makes it clear that Congress was concerned that requirements for the control of conventional pollutants beyond BPT may, in some cases, be unreasonably expensive. Congress recognized that at some point costs for such control begin to exceed associated "effluent reduction benefits", and thus established BCT to ensure that any limitations controlling conventional pollutants at a level more stringent than BPT were "reasonable".

This regulation satisfies those objectives. The core of the Agency's BCT methodology is a comparison of the costs of removing additional pounds of conventional pollutants for industry with comparable costs of removal for an average publicly owned treatment works (POTW). This cost figure for the POTW constitutes the basic measure of "reasonableness" established by the Act. As Senator Muskie noted:

> The Administrator must determine whether or not the cost of achieving reductions of conventional pollutants bears a reasonable relationship to the amount of effluent reduction achieved. In making this determination, the Administrator is to compare the costs of industrial effluent reduction to the cost of municipal waste treatment.

There are, however, a range of additional factors which are significant in establishing BCT. EPA interprets and applies these factors as follows.

(1) BPT is the base point for evaluation of limitations on conventional pollutants. All costs beyond BPT associated with the control of conventional pollutants are used in the BCT evaluation. No limitation more stringent than BPT can be established as BCT if it fails the cost reasonableness comparison.

(2) Effluent reduction benefits, calculated in terms of additional pounds of conventional pollutants removed, are directly incorporated in the cost per pound comparison.

(3) A uniform measure of reasonableness is established for all industries throughout the country. This ensures that no industry will be required to exceed a specified cost per pound for removal of conventional pollutants. In consequence, industries with high costs for removal of conventional pollutants, in many cases, will be subject to less stringent effluent limitations.

(4) A greater proportion of the total costs for control of conventional pollutants will now be allocated to industries and segments of industries comprised of large facilities. These facilities are able to remove conventional pollutants at the lowest cost.

(5) The final methodology results in the relief which Congress intended for control of conventional pollutants, and resolves the uneven impact of existing BAT limitations. Of the 93 industry subcategories evaluated in detail in this review, 22 have reasonable BAT limitations, 13 have unreasonable limitations, 6 have split determinations depending on the size of plant, 7 are not affected by this review because the BAT limitations in those cases are designed to control toxic pollutants, while the remaining 45 as noted above will require further analysis. For those subcategories in which BAT was found to be unreasonable, or requiring further analysis, EPA will undertake further study to develop appropriate BCT limitations.

These new limitations will result in a substantial reduction in expenditures for control of conventional pollutants. While this regulation covers only secondary industries, when the methodology is applied to the development of BCT limitations for the control of conventional pollutants in the primary industries, substantial additional savings will be realized.

(b) *The BCT Test.* The BCT 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. If the industry cost for a specific technology is lower than the POTW cost, the test is passed and the level of control of conventional pollutants is considered reasonable. If the industry costs of removal are higher than the POTW costs, the test is failed, and BCT cannot be set at that level.

In the case of this Section 73 secondary industry review, the BCT test is applied to existing BAT requirements to determine if the existing promulgated regulations are reasonable. If the existing BAT limitation passes the test, BCT is being promulgated as equivalent to the former BAT. If the BAT standard does not pass the test, the existing BAT is being withdrawn until an appropriate BCT can be set.

(1) *Calculation of Industrial Costs:* . The incremental annual costs are calculated by determining the difference between the annual costs for a model plant representing an industrial subcategory to achieve BPT and the annual costs to achieve the candidate BCT for conventional pollutants. Annual costs include operation and maintenance expenses, capital costs, and depreciation. The data used by EPA in determining industrial costs for this review are drawn from the Agency Development Documents which were prepared for each of the affected industries (See Appendix A). The data are updated to 1976 dollars, so that they can be compared on a consistent basis.

(2) *Calculation of Industrial Pollutant Removal:* The incremental removal of conventional pollutants is calculated 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. The conventional pollutants subject to this review fall into two categories: suspended solids (TSS), and oxygen-demanding substances (BOD5 and oil and grease). To avoid "double counting" of the amount of pollutants removed, the incremental pounds removed from BPT to candidate BCT are calculated using only one pollutant from each group. In those cases where both BOD5 and oil and grease are subject to limitations, the pollutant with the greater amount of removal is included in the calculation. If a group is not represented in the effluent limitation guideline for the subcategory, then it is not included in the evaluation. Table 3 details the pollutants to be used in the calculation.

(3) *Calculation of the Industrial Ratio:* The ratio of incremental annual costs to incremental conventional pollutant removal is calculated as follows:

(candidate BCT annual costs-BPT annual costs)/(candidate BCT pounds of conventional pollutants removed-BPT pounds of conventional pollutants removed)

This ratio represents the annual incremental cost to remove a pound of conventional pollutants beyond BPT in terms of dollars per pound.

(4) *Calculation of the Industrial Ratios in the Absence of BAT:* For those subcategories in which BAT limitations are unreasonable, and in those subcategories in which BAT has not been promulgated, the Agency will be

considering several candidate technologies for BCT. In evaluating the reasonableness of these candidates, EPA will use BPT as a starting point and determine the incremental costs and levels of pollutant removal from BPT to each of the candidate technologies. BCT will be promulgated based on the most stringent technology option which passes the reasonableness test, as well as the other factors specified in the Act.

(5) *Calculation of POTW Cost-Effectiveness Ratio:* A single cost reasonableness ratio for a POTW of average size was developed for comparison with industrial ratios. This figure was based on the costs of a POTW with a flow of two million gallons per day to upgrade its facility from secondary treatment (30 milligrams per liter (mg/l) of TSS, 30 mg/l of BOD5) to advanced secondary treatment (10 mg/l of TSS, 10 mg/l of BOD5). The resulting POTW cost reasonableness ratio is $1.15 per pound (1976 dollars). This figure will be updated periodically to account for inflation. A detailed discussion of the calculation of the POTW ratio is contained in Appendix B.

(6) *Comparison of Industrial and POTW Ratios:* In order to determine whether or not the industrial regulation under review meets the BCT test, the ratio for the industrial subcategory is compared to the POTW ratio. This single POTW ratio is used for all industrial comparisons. In this review, if the industrial ratio is less than the POTW ratio, then a BCT limitation is promulgated at the BAT level. No further analysis is required. If the industrial ratio is greater than the POTW ratio, then the BAT requirements are determined to be unreasonable and are withdrawn. BCT limitations will be promulgated in such cases after further analysis of alternative, less stringent technologies.

5. Summary of Determinations

Table 4 summarizes the results of the review, and detailed discussion of the determinations for each industrial subcategory is presented in Appendix C.

Based on this review the Agency has determined that the BAT control of conventional pollutants for 22 subcategories are reasonable and BCT for these 22 subcategories are being promulgated as equal to the current BAT guidelines. Most of the subcategories that have been determined to be reasonable are in the Dairy, Grain Mills, and Fruits and Vegetable industries.

Thirteen of the subcategory regulations are judged unreasonable, and consequently, the Agency will withdraw the BAT effluent guidelines for conventional pollutants until the proper levels of control can be determined. Regulations that are unreasonable are found in the Glass and Ferroalloys industries.

There are six industry subcategories where the limitations for one size model plant are reasonable, but unreasonable for another size, or where a portion of the subcategory is withdrawn pending further study. The BCT regulations will only cover the size range of plants where the limitations are reasonable, and exclude those plants where the limits are unreasonable. This was found in the Dairy and Fruit and Vegetable industries.

The Agency is suspending all 28 of the subcategories in the Seafood category. In a separate action, the limitations for these twenty-eight subcategories are being reviewed, and final BCT limitations will be promulgated at a later date.

Also in a separate action, the Agency has agreed with Fruit and Vegetable industry representatives to withdraw the three canned and preserved fruit and vegetable processing subcategories. This notice was published on June 20, 1979. 44 FR 36033 BCT limitations will be promulgated at a later date.

For one subcategory in the Feedlots industry (duck feedlots) the Agency does not have the necessary data to perform the cost test. As a result, the Agency is withdrawing the BAT limitation for the ducks subcategory until further analysis can be performed.

For four Meat industry subcategories (meat packing), portions of the BAT limitations not applying to conventional pollutants have been remanded by the courts. In one of these subcategories, the TSS limitations were also remanded. In response to this remand, these limitations are currently being reviewed. In the interim, the Agency is now withdrawing the remaining BAT limitations for BOD5 and TSS. However, limitations for fecal coliform and pH in these subcategories are being retained because controls of these pollutants are the same at BPT and BAT. In the case of four additional Meat industry subcategories (meat processing), the Agency is conducting a review of the limitations beyond BPT, so BCT is not being promulgated at this time. The final limitations will be promulgated at a later date.

The two regulations for cane sugar refining are currently being reviewed as part of a court stipulation. Therefore, the Agency will not promulgate the final BCT determinations at this time.

Spokesmen for the beet sugar industry, the frozen potato processors, and portions of condensed whey and condensed milk producers have submitted data on costs of BPT level treatment technology and the performance of that technology. On the basis of that data, the Agency wishes to conduct further review of potential limitations for this subcategory, and will not promulgate BCT limitations at this time.

Seven subcategories in the Asbestos industry are not affected by this review. The BAT limitations for these subcategories require that facilities achieve zero discharge of pollutants. These limitations are designed to control the discharge of toxic pollutants and are thus not subject to a BCT analysis.

6. Modifications to the Proposal

Since the publication of the proposed regulations in August of 1978, EPA has been reviewing the regulations in response to comments from the public and to new information that has become available to the Agency. Comments were received from 79 parties including many industrial groups, the Council on Wage and Price Stability, and several State governments. The commenters raised significant concerns with the approach taken by EPA in developing the proposed regulations. The comments fall into two general categories: those pertaining to the overall methodology, including the POTW and industrial calculations; and, those concerning the individual industry data used. Detailed responses to the comments regarding the individual industry data are presented in Appendix C, and responses to the major public comments regarding the overall methodology are presented in Appendix D.

In conjunction with the public comment review, EPA has reevaluated its methodology and its data base and concluded that certain changes in approach are appropriate. The more important modifications in the methodology used by EPA which affect final BCT regulations are described below.

(a) *POTW Cost and Operational Data.* In its initial BCT proposal in developing the POTW cost comparison figure, EPA relied on a document entitled "An Analysis of Cost Experience for Wastewater Treatment Plants." Since that time, EPA has published two new documents, "Construction Costs for Municipal Wastewater Treatment Plants, 1973–77" and "Analysis of Operations and Maintenance Costs for Municipal Wastewater Treatment Systems." These provide more accurate and up-to-date information on municipal treatment costs and hence are more appropriate for use in the POTW-industry comparisons. EPA announced that it was considering the use of these

two documents in a Federal Register notice of April 2, 1979. 44 Fed. Reg. 19214. Appendix B describes in detail how the municipal treatment costs used in the BCT evaluation is derived from the documents. Responses to comments on the April 2 notice are included in Appendix D.

(b) *Using a Single, POTW Cost Reasonableness Figure.* The BCT standards are based on a comparison of industry and POTW treatment costs and levels of removal. In the proposed methodology, industries were compared to POTW's having comparable rates of flow. Costs for these POTW's ranged from $.36 to $1.72 per pound of pollutant removed. This approach resulted in some industries with relatively high treatment costs being judged to have reasonable BAT limitations because they were compared to a POTW with a high cost. Other industries, however, with relatively low costs, were determined to have unreasonable BAT limitations because the POTW they were measured against had low costs. To rectify this inequity, EPA is now employing a single POTW comparison figure based on an average size POTW of 2 mgd. This approach will result in a more "economically efficient" solution. Those subcategories that can cheaply achieve stringent limitations will continue to do so, but for those where it is relatively expensive, some relief will be given. The single cost figure approach has the additional advantage of being far easier to apply. A discussion of the specific calculation of the POTW figure is contained in Appendix B.

(c) *The Concentration Test.* The methodology used by EPA in developing the proposed BCT regulations included a second, "concentration test", that was applied to any industry regulation which did not pass the BCT test. In cases where an industry's effluent had an significantly higher pollutant concentration than a POTW, BAT requirements were retained as BCT. This test was uniformly opposed by commenters, who argued that it discourages water conservation, and is abritrary and one-sided. EPA agrees, and has decided that the concentration test will not be used in making BCT determinations.

(d) *Calculation of POTW Cost Comparison Figure.* In its initial proposal, EPA calculated its POTW cost comparison figures based on the difference in costs and levels of removal between a POTW constructed to have an effluent of 25 mg/l of BOD, 25 mg/l of TSS and one constructed to achieve 12 mg/l of BOD and 12 mg/l of TSS. The Agency is now calculating the POTW cost comparison figure based on the incremental costs and levels of removal associated with the upgrading of an existing POTW from secondary treatment (30 mg/l BOD, 30 mg/l TSS) to advanced secondary treatment (10 mg/l BOD, 10 mg/l TSS).

Although Congress specifically required a comparison of the "cost and levels of reduction" of conventional pollutants from POTWs with those of industry, nowhere in the Act or its legislative history is there specific direction as to how the POTW cost comparison figure is to be derived. It is clear, however, that the POTW costs are to provide a benchmark for judging the "reasonableness" of industry limitations.

One appropriate measure of POTW costs is the marginal costs of removal at secondary treatment. Although Congress did not state that the secondary treatment level was significant in determining BCT, it is the current legal requirement for most POTWs and the level at which the bulk of existing POTWs are now operating. Calculation of the costs per pound of conventional pollutant removal based on the increment from secondary to advanced secondary yields the best approximation of such marginal costs. Although an increment which narrowly straddles secondary treatment would have been preferable in indentifying marginal costs, adequate data on such an increment do not exist.

In establishing the POTW cost comparison figure, Congress may also have been concerned with identifying the "knee-of-the-curve" for POTW costs and effluent reduction benefits. The Agency has submitted to Congress analyses which indicate that costs for pollution control to achieve pollutant concentrations lower than 10 mg/l of BOD and 10 mg/l of TSS begin to rise sharply in relation to effluent reduction benefits. Essentially, advanced secondary treatment marks the "knee-of-the-curve" with respect to POTW costs. Use of the secondary to advanced secondary increment thus effectively determines the cost per pound to achieve this maximum, cost-effective level of control.

Finally, basing the comparison figure on the cost of a POTW to upgrade from secondary to advanced secondary treatment roughly parallels the industrial increment under consideration. Congress, in establishing BCT, was concerned about the reasonableness of the requirement that industry progress from BPT to BAT. Similarly, focusing on the costs to upgrade existing POTWs beyond secondary treatment is appropriate.

In selecting this narrow increment the Agency is aware that the parallel in legal requirements for industry and POTW is not exact. Industries are required to meet BAT, and now BCT, by July 1, 1984. The comparable requirement for POTWs is achievement of "best practicable wastewater treatment technology" ("BPWTT") by July 1, 1983. However, BPWTT has never been precisely defined by EPA, and most POTWs will continue to operate at secondary treatment. Nonetheless, Congress has not modified the obligation of POTWs to achieve more stringent levels. Although concerned with funding of expensive advanced wastewater treatment systems, Congress has continued to fund construction of POTWs at better than secondary levels. EPA has judged that funding for construction of POTWs employing advanced secondary treatment is reasonable, and not subject to special intensified review.

(e) *Calculation of Conventional Pollutant Removal.* EPA originally proposed that if BOD5 and oil and grease were both regulated, only the pounds of BOD5 were to be included in the calculation of the incremental pounds of conventional pollutants removed. This has been modified and where both are regulated, the pollutant with the greater amount of removal will be included in the calculation. The Agency feels that the total effluent reduction benefits are best identified by using the pollutant in a given category which has the greater amount of removal in the calculation. However, a single pollutant in a category will continue to be used in the calculation because of the difficulty of allocating costs of removal between pollutants.

Additionally, total phosphorus and chemical oxygen demand were proposed as conventional pollutants, and they were included in the Agency's proposed BCT methodology. However, the proposal to designate these pollutants as conventional has been withdrawn, and they have been excluded from consideration in this rulemaking.

7. Information Available

Copies of the Federal Register notice can be obtained, without charge, by contacting: Sandra Jones, Environmental Protection Agency, 401 M Street, S.W. (WH-586), Washington, D.C. 20460, 202-426-2617.

The costs and pollutants removal data used in this review are taken from the development documents and economic analyses that were published in the development of BAT guidelines. The documents are available for public inspection at all EPA regional libraries

and the EPA headquarters library in Washington, D.C. Also, a 200 page summary of cost and removal data is open to public inspection at the above libraries.

In consideration of the foregoing, affected 40 CFR Parts 400–460 are hereby amended as set forth below.

Dated: July 31, 1979.

Barbara Blum,

Acting Administrator.

Table 1.—Industries and Subcategories Which Did Not Require Further Analysis

Grain Mills (4):
- Normal Wheat Flour Milling—Animal Feed.
- Normal Rice Milling—Hot Cereal.

Cement Manufacturing (2):
- Non-Leaching—Materials Storage Piles Runoff.

Feedlots (1): All Subcategories Except Ducks.

Fertilizer (4):
- Phosphate—Ammonium Sulfate Production.
- Ammonia—Mixed and Blend Fertilizer Production.

Phosphate Manufacturing (2):
- Deflourinated Phosphate Rock—Deflourinated Phosphoric Acid.

Ferroalloys Manufacturing (1): Other Calcium Carbide Furnaces.

Glass Manufacturing (2):
- Sheet Glass Manufacturing—Rolled Glass Manufacturing.

Asbestos Manufacturing (4):
- Asbestos Millboard—Solvent Recovery.
- Coating or Finishing of Asbestos Textiles—Vapor Absorption.

Table 2.—Industries and Subcategories Which Were Studied

Dairy Products Processing (12):
- Receiving Stations.
- Fluid Products.
- Cultured Products.
- Butter.
- Cottage Cheese and Cultured Cream Cheese.
- Natural and Processed Cheese.
- Fluid Mix for Ice Cream and other Frozen Desserts.
- Ice Cream, Frozen Desserts Novelties and other Dairy Desserts.
- Dry Milk.
- Condensed Whey.
- Dry Whey.
- Condensed Milk.

Grain Mills (6):
- Corn Wet Milling.
- Corn Dry Milling.
- Bulgur Wheat Flour Milling.
- Parboiled Rice Processing.
- Ready-to-eat Cereal.
- Wheat Starch and Gluten.

Canned and Preserved Fruits and Vegetables Processing (8):
- Apple Juice.
- Apple Products.
- Citrus Products.
- Frozen Potato Products.
- Dehydrated Potato Products.
- Canned and Preserved Fruits.
- Canned and Preserved Vegetables.
- Canned and Miscellaneous Specialities.

Canned and Preserved Seafood Processing (28):
- Farm Raised Catfish.
- Conventional Blue Crab.
- Tuna Processing.
- Fish Meal Processing.
- Mechanized Blue Crab.
- Non-Remote Alaskan Crab Meat.
- Remote Alaskan Crab Meat.
- Non-Remote Alaskan Whole Crab and Crab Section.
- Non-Alaskan Scallop Processing.
- Remote Alaskan Whole Crab and Crab Section.
- Dungeness and Tanner Crab Processing in the Contiguous States.
- Non-Remote Alaskan Shrimp.
- Remote Alaskan Shrimp.
- Northern Shrimp Processing in the Contiguous States.
- Southern Non-Breaded Shrimp Processing in the Contiguous States.
- Non-Alaskan Whole Crab and Crab Section Processing.
- Breaded Shrimp Processing in the Contiguous States.
- West Coast Hand Butchered Salmon Processing.
- West Coast Mechanized Salmon Processing.
- Non-Alaskan Conventional Bottom Fish.
- Non-Alaskan Mechanized Bottom Fish Processing.
- Hand-Shucked Clam Processing
- Mechanized Clam Processing.
- Pacific Coast Hand-Shucked Oyster Processing.
- Atlantic and Gulf Coast Hand-Shucked Oyster Processing.
- Steamed and Canned Oyster Processing.
- Sardine Processing.
- Non-Alaskan Herring Fillet Processing.
- Abalone Processing.

Sugar Processing (3):
- Beet Sugar Processing.
- Crystalline Cane Sugar Refining.
- Liquid Cane Sugar Refining.

Cement Manufacturing (1):
- Leaching.

Feedlots (1):
- Ducks.

Phosphate Manufacturing (1):
- Sodium Phosphates.

Ferroalloys Manufacturing (6):
- Open Electric Furnaces with Wet Air Pollution Control Devices.
- Covered Electric Furnaces and other Smelting Operations with Wet Air Pollution Control Devices.
- Slag Processing.
- Covered Calcium Carbide with Wet Air Pollution Control Devices.
- Electrolytic Manganese Products.
- Electrolytic Chromium.

Glass Manufacturing (10):
- Insulation Fiberglass.
- Plate Glass Manufacturing.
- Float Glass Manufacturing.
- Automotive Glass Tempering.
- Automotive Glass Laminating.
- Glass Container Manufacturing.
- Glass Tubing (Danner) Manufacturing.
- Television Picture Tube Envelope Manufacturing.
- Incandescent Lamp Envelope Manufacturing.
- Hand Pressed and Blown Glass Manufacturing.

Asbestos Manufacturing (7):
- Asbestos-Cement Pipe.
- Asbestos-Cement Sheet.
- Asbestos Paper (Starch Binder).
- Asbestos Paper (Elastomeric Binder).
- Asbestos Roofing.
- Asbestos Floor Tile.
- Wet Dust Collection.

Meat Products (10):
- Simple Slaughterhouse.
- Complex Slaughterhouse.
- Low Processing Packinghouse.
- High Processing Packinghouse.
- Small Processor.
- Meat Cutter.
- Sausage and Luncheon Meats Processor.
- Ham Processor.
- Canned Meats Processor.
- Renderer.

Table 3

Pollutants regulated	Pollutants considered in industrial calculation
BOD5	BOD5.
BOD5 and TSS	BOD5 and TSS.
BOD5, Oil and Grease	BOD5[1] or Oil and Grease.
TSS[1]	TSS.
TSS, Oil and Grease	TSS, Oil and Grease.
TSS, BOD5, Oil and Grease	TSS, BOD5[1] (or Oil and Grease [1])
Oil and Grease	Oil and Grease.

[1] EPA will use the one ollutant (BOD5 or oil and grease) which has the most incremental removal.

Table 4

Industry and subcategory	(CFR Part)	(A) BCT=BAT	(B) BAT unreasonable, BAT withdrawn	(C) Withdrawn pending further study	(D) BAT withdrawn in response to litigation	(E) BAT analysis not required, no action
Dairy						
1. Receiving stations	(405.13)	[1]X	[1]X			
2. Fluid produce	(405.23)	X				
3. Cultured produce	(405.33)	X				
4. Butter	(405.43)	X				
5. Cottage, cream cheese	(405.53)	X				
6. Natural, processed cheese	(405.63)	[2]X	[2]X			
7. Fluid mix ice cream	9405.73)	X				
8. Ice cream, frozen desserts	(405.83)	X				
9. Condensed milk	(405.93)	[3]X		[3]X		
10. Dry milk	(405.103)	[4]X	[4]X			
11. Condensed whey	(405.113)		[5]X	[5]X		
12. Dry whey	(405.123)	X				

Table 4—Continued

Industry and subcategory	(CFR Part)	(A) BCT=BAT	(B) BAT unreasonable, BAT withdrawn	(C) Withdrawn pending further study	(D) BAT withdrawn in response to litigation	(E) BAT analysis not required, no action
Grain mills						
13. Corn wet	(406.13)	X				
14. Corn dry	(406.23)	X				
15. Bulgur wheat	(406.43)		X			
16. Parboiled rice	(406.63)	X				
17. Ready-to-eat	(406.93)	X				
18. Wheat starch and Gluten	(406.103)	X				
Canned and preserved fruits and vegetable						
19. Apple juice	(407.13)	[6]X	[6]X			
20. Apple products	(407.23)	[7]X	[7]X			
21. Citrus products	(407.33)	X				
22. Frozen potato	(407.43)			X		
23. Dehydrated potato	(407.53)	X				
24. Canned and preserved fruits	(407.63)				X	
25. Canned and preserved vegetables.	(407.73)				X	
26. Canned and miscellaneous specialities.	(407.83)				X	
Canned and preserved seafoods						
27. Farm raised catfish	(408.13)			X		
28. Conventional blue crab	(408.23)			X		
29. Mechanized blue crab	(408.33)			X		
30. Nonremote Alaskan crab meat	(408.43)			X		
31. Remote Alaskan crab meat	(408.53)			X		
32. Nonremote Alaskan whole crab.	(408.63)			X		
33. Remote Alaskan whole crab	(408.73)			X		
34. Dungeoness and tanner crab	(408.83)			X		
35. Nonremote Alaskan shrimp	(408.93)			X		
36. Remote Alaskan shrimp	(408.103)			X		
37. Northern shrimp	(408.113)			X		
38. Southern nonbreaded shrimp	(408.123)			X		
39. Breaded shrimp	(408.133)			X		
40. Tuna	(408.143)			X		
41. Fish meal	(408.153)			X		
42. West coast hand-butchered salmon.	(408.183)			X		
43. West coast mechanized salmon.	(408.193)			X		
44. Non-Alaskan conventional bottom fish.	(407.213)			X		
45. Non-Alaskan mechanized bottom fish.	(408.223)			X		
46. Hand-shucked clam	(408.233)			X		
47. Mechanized clam	(408.243)			X		
48. Pacific hand shucked oyster	(408.253)			X		
49. Atlantic and Gulf hand-shucked oyster.	(408.263)			X		
50. Steamed and canned	(408.273)			X		
51. Sardine	(408.283)			X		
52. Non-Alaskan scallop	(408.303)			X		
53. Non-Alaskan herring fillet	(408.323)			X		
54. Abalone processing	(408.333)			X		
Sugar processing						
55. Beet sugar	(409.13)			X		
56. Crystalline cane sugar	(409.23)			X		
57. Liquid cane sugar	(409.33)			X		
Cement						
58. Leaching	(411.23)		X			

Table 4—Continued

Industry and subcategory	(CFR Part)	(A) BCT=BAT	(B) BAT unreasonable, BAT withdrawn	(C) Withdrawn pending further study	(D) BAT withdrawn in response to litigation	(E) BAT analysis not required, no action
Feedlots						
59. Ducks	(412.23)		[9]X			
Ferroalloys						
60. Open electric furnaces wet	(424.13)	X				
61. Covered electric and smelting wet.	(424.23)	X				
62. Slag processing	(424.33)	X				
63. Covered calcium carbide wet	(424.43)		X			
64. Electrolytic manganese	(424.63)		X			
65. Electrolytic chromium	(424.73)		X			
Glass						
66. Insulation fiberglass	(426.13)	X				
67. Plate	(426.43)	X				
68. Float	(426.53)		X			
69. Auto tempering	(426.63)		X			
70. Auto laminating	(426.73)		X			
71. Container	(426.83)		X			
72. Tubing	(426.103)		X			
73. TV picture tube	(426.113)		X			
74. Incandescent lamp envelope	(426.123)		X			
75. Hand pressed and blown	(426.133)		X			
Asbestos						
76. Cement pipe	(427.13)					X
77. Cement sheet	(427.23)					X
78. Paper (starch binder)	(427.33)					X
79. Paper (elastomeric binder)	(427.43)					X
80. Roofing	(427.63)					X
81. Floor tile	(427.73)					X
82. Wet dust collection	(427.113)					X
Meat products						
83. Simple slaughterhouse	(432.13)				X	
84. Complex slaughterhouse	(432.23)				X	
85. Low Processing packinghouse	(432.33)				X	
86. High Processing packinghouse	(432.43)				X	
87. Small processing	(432.53)	X				
88. Meat cutter	(432.63)			X		
89. Sausage and luncheon	(432.73)			X		
90. Ham processing	(432.83)			X		
91. Canned meats	(432.93)			X		
92. Renderers	(432.103)	X				
Phosphates						
93. Sodium phosphates	(422.63)	X				

COLUMN EXPLANATIONS:

(A) BAT control of conventional pollutants has been determined to be reasonable. The Agency is promulgating that BCT be equal to the BAT control of conventional pollutants. The Agency is also withdrawing the BAT control of conventional pollutants.

(B) The BAT control of conventional pollutants (except for pH) has been determined to be unreasonable. The Agency is withdrawing the BAT control of conventional pollutants except for pH until such time that BCT standards can be developed. The Agency is also promulgating that the BCT control of pH be equal to the BAT control.

(C) The Agency is either currently studying the BAT limitations in the industry (Seafoods, Cane Sugar) or has received data sufficient to warrant a study of the industry (Beet Sugar). The Agency is withdrawing the BAT conventional pollutant limitations and will promulgate BCT after the completion of the studies.

(D) The BAT regulations for these subcategories are currently under judicial review. Consequently, the Agency is suspending the BAT control of conventional pollutants.

(E) These BAT regulations were removed from the review because it was determined that the BAT limitation of zero discharge controlled toxic pollutants, not conventional pollutants.

[6]Receiving Stations—Small plants (processing less than 150,000 pounds per day of milk equivalent) are found reasonable. Large plants (over 150,000 pounds per day of milk equivalent) are found unreasonable. The subcategory regulation has been rewritten to cover only those plants processing 150,000 pounds per day or less of milk equivalent.

[2]Natural, Processed Cheese—Small plants (processing 100,000 lbs/day or less of milk equivalent) are reasonable. Large plants (processing over 100,000 lbs/day of milk equivalent) are unreasonable. The limitations have been rewritten to cover only the small plants.

[3]Condensed Milk—Small plants (processing less than 100,000 pounds per day of milk equivalent) are being withdrawn pending further study. Large plants (processing over 100,000 pounds per day of milk equivalent) are reasonable. The limitations have been rewritten to cover only the large plants.

[4]Dry Milk—Small plants (processing 145,000 pounds per day or less of milk equivalent) are found unreasonable. Large plants (over 145,000 pounds per day of milk equivalent) are reasonable. The subcategory regulation has been rewritten to cover only those plants processing more than 145,000 pounds per day of milk equivalent.

[5]Condensed Whey—Small plants (processing 300,000 pounds per day or less of raw fluid whey input) are withdrawn pending further study. Large plants (processing over 300,000 pounds per day of raw fluid whey input) are unreasonable. All plants are therefore, in effect, unreasonable.

[6]Apple Juice—Small plants (processing 100 tons per day) are found unreasonable. Large plants (processing 500 tons per day) are found reasonable. The limitations are rewritten to cover only those plants processing 500 tons per day or over.

[7]Apple Products—Small plants (processing under 10 tons per day) were found to be unreasonable. Large plants (over 100 tons per day) were found reasonable. The proposed subcategory regulation has been rewritten to cover only those plants processing over 100 tons per day. All plants processing less than 100 tons per day, therefore, are, in effect, unreasonable.

[8]Ducks—There is insufficient data available to evaluate the BAT limitations for this subcategory. The limitations are being withdrawn until such time that BCT limitations can be developed.

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:

1. (a) The sections listed below are redesignated as follows and the original section numbers reserved for future use.

Subcategory	Original section designation (40 CFR)	Revised section designation (40 CFR)
Fluid products	405.23	405.27
Cultured products	405.33	405.37
Butter	405.43	405.47
Cottage, cream cheese	405.53	405.57
Fluid mix ice cream	405.73	405.77
Ice cream, frozen desserts, novelties and other dairy desserts	405.83	405.87
Dry whey	405.123	405.127

(b) The title and first paragraph of the sections redesignated above are amended to read as follows:

§—— 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.

* * * * *

2. The sections listed below are withdrawn and the section numbers reserved for future use.

Subcategory	Section designation (40 CFR)
Receiving stations	405.13
Natural and processed cheese	405.63
Condensed milk	405.93
Dry milk	405.103
Condensed whey	405.113

3. A new § 405.17 for the Receiving Stations subcategory is added as follows:

§ 405.17 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.

(a) For receiving stations receiving more than 150,000 lb/day of milk equivalent (more than 15,600 lb/day of BOD*5* input).

Effluent characteristic	Effluent limitations
pH	Within the range 6.0 to 9.0.

(b) For receiving stations receiving 150,000 lb/day or less of milk equivalent (under 15,600 lb/day of BOD*5* input).

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (kilograms per 1,000 kg of BOD*5* input)	
BOD*5*	0.150	0.075
TSS	.188	.094
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 100 lb of BOD*5* input)	
BOD*5*	0.015	0.008
TSS	.019	.009
pH	Within the range 6.0 to 9.0.	

4. A new § 405.67 for the Natural and Processed Cheese subcategory is added as follows:

§ 405.67 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.

(a) For plants processing more than 100,000 lb/day of milk equivalent (more than 10,390 lb/day of BOD*5* input).

Effluent characteristic	Effluent limitations
pH	Within the range 6.0 to 9.0.

(b) For plants processing 100,000 lb/day or less of milk equivalent (less than 10,390 lb/day of BOD*5* input).

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (kilograms per 1,000 kg of BOD*5* input)	
BOD*5*	0.250	0.125
TSS	.312	.156
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 100 lb of BOD*5* input)	
BOD*5*	0.025	0.013
TSS	.031	.016
pH	Within the range 6.0 to 9.0.	

5. A new § 405.97 for the Condensed Milk subcategory is added as follows:

§ 405.97 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.

(a) For plants processing more than 100,000 lb/day of milk equivalent (more than 10,390 lb/day of BOD5 input).

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (kilograms per 1,000 kg of BOD5 input)	
BOD5	0.760	0.380
TSS	.950	.475
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 100 lb of BOD5 input)	
BOD5	0.076	0.038
TSS	.095	.048
pH	Within the range 6.0 to 9.0.	

(b) For plants condensing 100,000 lbs/day or less of milk equivalent (less than 10,390 lbs/day of BOD5 input).

Effluent characteristic	Effluent limitations
pH	Within the range 6.0 to 9.0.

6. A new § 405.107 for the Dry Milk subcategory is added as follows:

§ 405.107 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.

(a) For milk drying plants with an input equivalent to more than 145,000 lb/day of milk equivalent (more than 15,070 lb/day of BOD5 input).

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (kilograms per 1,000 kg of BOD5 input)	
BOD5	0.360	0.180
TSS	.450	.225
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 100 lb of BOD5 input)	
BOD5	0.036	0.018
TSS	.045	.023
pH	Within the range 6.0 to 9.0.	

(b) For milk drying plants with an input equivalent to 145,000 lb/day or less of milk equivalent (15,070 lb/day or less of BOD5 input).

Effluent characteristic	Effluent limitations
pH	Within the range 6.0 to 9.0.

* * * * *

7. A new § 405.117 for the Condensed Whey subcategory is added as follows:

§ 405.117 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
pH	Within the range 6.0 to 9.0.

PART 406—GRAIN MILLS POINT SOURCE CATEGORY

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

1. (a) The sections listed below are redesignated as follows and the original section numbers reserved for future use.

Subcategory	Original section designation (40 CFR)	Revised section designation (40 CFR)
Corn wet milling	406.13	406.17
Corn dry milling	406.23	406.27
Parboiled rice processing	406.63	406.67
Ready to eat cereal	406.93	406.97
Wheat starch and gluten	406.103	406.107

(b) The title and first paragraph of the sections redesignated above are amended to read as follows:

§ —— 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.

* * * * *

2. The new sections listed below are added as follows:

§ —— 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology: There shall be no discharge of process waste water pollutants to navigable waters.

Subcategory	Section designation (40 CFR)
Normal wheat flour milling	406.37
Normal rice milling	406.57
Animal feed	406.77
Hot cereal	406.87

§ 406.43 [Reserved]

3. The following section is withdrawn and the section number reserved for future use.

Subcategory	Section designation (40 CFR)
Bulgur wheat flour milling	406.43

4. A new § 406.47 for the Bulgur Wheat Flour Milling Subcategory is added as follows:

§ 406.47 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
pH	Within the range 6.0 to 9.0.

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:

1. The sections listed below are withdrawn and the section number reserved for future use.

Subcategory	Section designation (40 CFR)
Apple juice	407.13
Apple products	407.23
Frozen potato products	407.43

2. (a) The sections listed below are redesignated as follows and the original section numbers reserved for future use.

Subcategory	Original section designation	Revised section designation
Citrus products	407.33	407.37
Dehydrated potato products	407.53	407.57

(b) The title and first paragraph of the sections redesignated above are amended to read as follows:

§ —— 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.

* * * * *

3. A new § 407.17 for the Apple Juice subcategory is added as follows:

§407.17 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:

(a) For plants processing 500 tons per day or more of raw material.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (kilograms per 1,000 kg of raw material)	
BOD5	0.20	0.10
TSS	.20	.10
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 1,000 lb of raw material)	
BOD5	0.20	0.10
TSS	.20	.10
pH	Within the range 6.0 to 9.0.	

(b) For plants processing less than 500 tons per day of raw material.

Effluent characteristic	Effluent limitations
pH	Within the range 6.0 to 9.0.

4. A new § 407.27 is added to the Apple Products Subcategory and reads as follows:

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

(a) The following limitations apply to plants producing more than 100 tons per day of final product and establish the quantity or quality of pollutants or pollutant properties, 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 (kilograms per 1,000 kg of raw material)	
BOD5	0.20	0.10
TSS	.20	.10
pH	Within the range 6.0 to 9.0.	
	English units (pounds per 1,000 lb of raw material)	
BOD5	0.20	0.10
TSS	.20	.10
pH	Within the range 6.0 to 9.0.	

(b) The following limitations apply to plants producing less than 100 tons per day of final product and establish the quantity or quality of pollutants or pollutant properties, 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
pH	Within the range 6.0 to 9.0.

5. A new § 407.47 is added to the Frozen Potato Products subcategory and reads as follows:

§ 407.47 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
pH	Within the range 6.0 to 9.0.

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:

1. The sections listed below are withdrawn, and the section numbers reserved for future use.

Subcategory	Section designation (40 CFR)
Farm Raised Catfish Processing	408.13
Conventional Blue Crab Processing	408.23
Mechanized Blue Crab Processing	408.33
Non-Remote Alaskan Crab Meat Processing	408.43
Remote Alaskan Crab Meat Processing	408.53
Non-Remote Alaskan Whole Crab and Crab Section Processing	408.63
Remote Alaskan Whole Crab and Crab Section Processing	408.73
Dungeness and Tanner Crab Processing in the Contiguous States	408.83
Non-Remote Alaskan Shrimp Processing	408.93
Remote Alaskan Shrimp Processing	408.103
Northern Shrimp Processing in the Contiguous States	408.113
Southern Non-Breaded Shrimp Processing in the Contiguous States	408.123
Breaded Shrimp Processing in the Contiguous States	408.133
Tuna Processing	408.143
Fish Meal Processing	408.153
West Coast Hand-Butchered Salmon Processing	408.183
West Coast Mechanized Salmon Processing	408.193
Non-Alaskan Conventional Bottom Fish Processing	408.213
Non-Alaskan Mechanized Bottom Fish Processing	408.223
Hand Shucked Clam Processing	408.233
Mechanized Clam Processing	408.243
Pacific Coast Hand-Shucked Oyster Processing	408.253
Atlantic Gulf Coast Hand-Shucked Oyster Processing	408.263
Steam and Canned Oyster Processing	408.273
Sardine Processing	408.283
Non-Alaskan Scallop Processing	408.303
Non-Alaskan Herring Fillet Processing	408.323
Abalone Processing	408.333

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PART 409—SUGAR PROCESSING POINT SOURCE CATEGORY

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

§ 409.13 [Amended]

1. (a) The following § 409.13 of the Beet Sugar Processing Subcategory is amended to read as follows:

(a) * * *

(1) The following limitations establish the maximum permissible discharge of

process waste water pollutants when the process waste water discharge results from barometric condensing operations only.

Effluent characteristics	Effluent limitations
Temperature	Temperature not to exceed the temperature of cooled water acceptable for return to the heat producing process and in no event greater than 32° C (90° F).

(2) The following limitations establish the maximum permissible discharge of process waste water pollutants when the process waste water discharge results, in whole or in part, from barometric condensing operations and any other beet sugar processing operation.

Effluent characteristics	Effluent limitations
Temperature	Not to exceed 32° C (90° F).

(b) Paragraph (b) of § 409.13 is withdrawn.

2. The sections listed below are withdrawn and the section numbers reserved for future use.

Subcategory	Section designation
Crystalline Cane Sugar Refining	409.23
Liquid Cane Sugar Refining	409.33

3. The new sections listed below are added as follows;

§ —— 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
pH	Within the range 6.0 to 9.0.

Subcategory	Section designation
Beet Sugar Refining	409.17
Crystalline Cane Sugar Refining	409.27
Liquid Cane Sugar Refining	409.37

PART 411—CEMENT MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N Part 411 for the Cement Manufacturing Point Source Category is amended as follows:

§§ 411.13, 411.23 [Amended]

1. Section 411.13 of the Nonleaching Subcategory and § 411.23 of the Leaching Subcategory are amended to read as follows:

§ —— Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations (maximum for any 1 day)
Temperature (heat)	Not to exceed 3° C rise above inlet temperature.

2. A new § 411.17 is added for the Nonleaching Subcategory and reads as follows:

§ 411.17 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 characteristics	Effluent limitations (Maximum for any 1 day)
	Metric units (kg/kkg of product)
TSS	0.005
pH	Within the range 6.0 to 9.0
	English units (lb/1,000 lbs of product)
TSS	0.005
pH	Within the range 6.0 to 9.0

3. A new § 411.27 for the Leaching Subcategory is added as follows:

§ 411.27 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
pH	Within the range 6.0 to 9.0

4. (a) The section listed below is redesignated as follows and the original section number reserved for future use.

Subcategory	Original section designation	Revised section designation
Materials Storage Piles Runoff	411.33	411.37

(b) The title and first paragraph of the sections redesignated above are amended to read as follows:

§ 411.37 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.

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PART 412—FEEDLOTS POINT SOURCE CATEGORY

40 CFR Subchapter N Part 412 for the Feedlots Point Source Category is amended as follows:

1. A new § 412.17 for All Subcategories Except Ducks is added as follows:

§ 412.17 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. There shall be no discharge of process waste water pollutants to navigable waters.

(b) Process waste pollutants in the overflow may be discharged to navigable waters whenever rainfall events, either chronic or catastrophic, cause an overflow of process waste water from a facility designed, constructed and operated to contain all process generated waste waters plus the runoff from a 25 year, 24 hour rainfall event for the location of the point source.

§ 412.23 [Reserved]

2. Section 412.23 for the Ducks Subcategory is withdrawn and the section number reserved for future use.

PART 418—FERTILIZER MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N Part 418 for the Fertilizer Manufacturing Point Source Category is amended as follows:

1. Section 418.13 of the Phosphate Subcategory is amended as follows:

§ 418.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

* * * * *

(c) The concentration of pollutants discharged in process wastewater pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

Effluent characteristics	Effluent limitations (mg/1)	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Total Phosphorus (as P)	105	35
Fluoride	75	25

The total suspended solid limitations set forth in this paragraph shall be waived for process wastewater from a calcium sulfate storage pile runoff facility, operated separately or in combination with a water recirculation system, which is chemically treated and then clarified or settled to meet the other pollutant limitations set forth in this paragraph.

(d) The concentration of pollutants discharged in contaminated non-process wastewater shall not exceed the values listed in the following table:

Effluent characteristics	Effluent limitations (mg/l)	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	105	35
Fluoride	75	25

2. A new § 418.17 for the Phosphate Subcategory is added as follows:

§ 418.17 Effluent limitations and guidelines representing the degree of effluent reduction attained by the application of the best conventional pollutant control technology.

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

(a) Subject to the provision of paragraphs (b) and (c) 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: There shall be no discharge of process wastewater pollutants to navigable waters.

(b) Process wastewater pollutants from a calcium sulfate storage pile runoff facility operated separately or in combination with a water recirculation system designed, constructed and operated to maintain a surge capacity equal to the runoff from the 25-year, 24-hour rainfall event may be discharged, after treatment to the standards set forth in paragraph (c) of this section, whenever chronic or catastrophic precipitation events cause the water level to rise into the surge capacity. Process wastewater must be treated and discharged whenever the water level equals or exceeds the midpoint of the surge capacity.

(c) The concentration of pollutants discharged in process wastewater pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

Effluent characteristics	Effluent limitations (mg/l)	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
TSS	150	50

The total suspended solid limitations set forth in this paragraph shall be waived for process wastewater from a calcium sulfate storage pile runoff facility, operated separately or in combination with a water recirculation system, which is chemically treated and then clarified or settled to meet the other pollutant limitations set forth in this paragraph.

3. A new § 418.27 for the Ammonia Subcategory is added as follows:

§ 418.27 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
pH	Within the range 6.0 to 9.0

4. The sections listed below are added as follows:

§ —— 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology: There shall be no discharge of process waste water pollutants to navigable waters.

Subcategory	Section designation
Ammonium Sulfate Production	418.67
Mixed and Blend Fertilizer Production	418.77

PART 422—PHOSPHATE MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N Part 422 for the Phosphate Manufacturing Point Source Category is amended as follows:

1. Section 422.43 of the Defluorinated Phosphate Rock Subcategory is amended as follows:

§ 422.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

* * * * *

(c) The concentration of pollutants discharged in process waste water pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations	
	Maximum for 6any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	105	35
Fluoride (as F)	75	25

(d) The concentration of pollutants discharged in contaminated non-process wastewater shall not exceed the values listed in the following table:

Effluent characteristics	Effluent limitations (mg/1) Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	105	35
Fluoride	75	25

2. A new § 422.47 for the Defluorinated Phosphate Rock Subcategory is added as follows:

§ 422.47 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

(a) Subject to the provisions of paragraphs (b), (c) and (d) 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: There shall be no discharge of process waste water pollutants to navigable waters.

(b) Process waste water pollutants from a cooling water recirculation system designed, constructed and operated to maintain a surge capacity equal to the runoff from the 25-year, 24-hour rainfall event may be discharged, after treatment to the standards set forth in paragraph (c) of this section, whenever chronic or catastrophic precipitation events cause the water level in the pond to rise into the surge capacity. Process waste water must be treated and discharged whenever the water level equals or exceeds the mid-point of the surge capacity.

(c) The concentration of pollutants discharged in process waste water pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
TSS	150	50
pH	Within the range 6.0 to 9.5.	

The total suspended solid limitation set forth in this paragraph shall be waived for process waste water from a calcium sulfate storage pile runoff facility, operated separately or in combination with a water recirculation system, which is chemically treated and then clarified or settled to meet the other pollutant limitations set forth in this paragraph.

(d) The concentration of pollutants discharged in contaminated non-process waste water shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations
pH	Within the range 6.0 to 9.5.

3. Section 422.53 of the Defluorinated Phosphoric Acid Subcategory is amended as follows:

§ 422.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

* * * * *

(c) The concentration of pollutants discharged in process waste water pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	105	35
Fluoride (as F)	75	25

(d) The concentration of pollutants discharged in contaminated non-process wastewater shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	105	35
Fluoride (as F)	75	25

4. A new § 422.57 for the Defluorinated Phosphoric Acid Subcategory is added as follows:

§ 422.57 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology:

(a) Subject to the provisions of paragraphs (b), (c) and (d) 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: There shall be no discharge of process waste water pollutants to navigable waters.

(b) Process waste water pollutants from a cooling water recirculation system designed, constructed and operated to maintain a surge capacity equal to the runoff from the 25-year, 24-hour rainfall event may be discharged, after treatment to the standards set forth in paragraph (c) of this section, whenever chronic or catastrophic precipitation events cause the water level in the pond to rise into the surge capacity. Process waste water must be treated and discharged whenever the water level equals or exceeds the mid-point of the surge capacity.

(c) The concentration of pollutants discharged in process waste water pursuant to the limitations of paragraph (b) of this section shall not exceed the values listed in the following table:

(Milligrams per liter)

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
TSS	150	50
pH	Within the range 6.0 to 9.5.	

The total suspended solid limitation set forth in this paragraph shall be waived for process waste water from a calcium sulfate storage pile runoff facility, operated separately or in combination with a water recirculation system, which is chemically treated and then clarified or settled to meet the other pollutant limitations set forth in this paragraph.

(d) The concentration of pollutants discharged in contaminated non-process waste water shall not exceed the values listed in the following table:

(Milligrams per liter)	
Effluent characteristics	Effluent limitations
pH	Within the range 6.0 to 9.5.

5. Section 422.63 of the Sodium Phosphate Subcategory is amended as follows:

§ 422.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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:

Metric units, kg/kkg of product: English units, lb/1,000 lb of product		
	Effluent limitations	
Effluent characteristics	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total Phosphorus (as P)	0.56	0.28
Fluoride (as F)	0.21	0.11

6. A new § 422.67 for the Sodium Phosphate Subcategory is added 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:

	Effluent limitations	
Effluent characteristics	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
(Metric units kg/kkg of finished product: English units, lb/1,000 lb of product)		
TSS	0.35	0.18
pH	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:

1. Section 424.13 of the Open Electric Furnaces with Wet Air Pollution Control Devices Subcategory is amended as follows:

§ 424.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 limitations	
Effluent characteristics	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units kg/Mwh	
Chromium total	.0008	.0004
Chromium VI	.00008	.00004
Manganese total	.008	.0039
	English units lb/Mwh	
Chromium total	.0017	.0009
Chromium VI	.0002	.0001
Manganese total	.017	.0086

2. A new § 424.17 for the Open Electric Furnaces with Wet Air Pollution Control Devices Subcategory is added as follows:

§ 424.17 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 limitations	
Effluent characteristics	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units kg/Mwh	
TSS	0.024	0.012
pH	Within the range 6.0 to 9.0.	
	English units lb/Mwh	
TSS	0.052	0.026
pH	Within the range 6.0 to 9.0.	

3. Section 424.23 of the Covered Electric Furnaces and Other Smelting Operations with Wet Air Pollution Control Devices Subcategory is amended as follows:

§ 424.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 limitations	
Effluent characteristics	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units kg/Mwh	
Chromium total	.001	.0005
Chromium VI	.0001	.00005
Manganese total	.011	.005
Cyanide total	.0005	.0003
Phenols	.0004	.0002
	English units lb/Mwh	
Chromium total	.002	.0012
Chromium VI	.0002	.0001
Manganese total	.023	.012
Cyanide total	.001	.0006
Phenols	.0009	.0005

Provided, however, That for nonelectric furnace smelting processes, the units of effluent limitations set forth in this section shall be read as "kg/kkg of product" rather than "kg/Mwh," and the limitations (except for pH) shall be 3.3 times those listed in the table in this section (or, for English units, "lb/ton of product" rather than "lb/Mwh," and the limitations (except for pH) shall be three times those listed in the table).

4. A new § 424.27 for the Covered Electric Furnaces and Other Smelting Operations with Wet Air Pollution Control Devices Subcategory is added as follows:

§ 424.27 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 characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units kg/Mwh	
TSS	0.032	0.016
pH	Within the range 6.0 to 9.0.	
	English units lb/Mwh	
TSS	0.071	0.035
pH	Within the range 6.0 to 9.0.	

Provided, however, That for nonelectric furnace smelting processes, the units of effluent limitations set forth in this section shall be read as "kg/kkg of product" rather than "kg/Mwh," and the limitations (except for pH) shall be 3.3 times those listed in the table in this seciton (or, for English units, "lb/ton of product" rather than "lb/Mwh," and the limitations (except for pH) shall be three times those listed in the table).

5. Section 424.33 of the Slag Processing Subcategory is amended as follows:

§ 424.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units kg/kkg processed	
Chromium total	.0054	.0027
Manganese total	.054	.027
	English units lb/ton of raw material	
Chromium total	.011	.0054
Manganese total	.108	.054

6. A new § 424.37 for the Slag Processing Subcategory is added as follows:

§ 424.37 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 characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units kg/Mwh	
TSS	0.271	0.139
pH	Within the range 6.0 to 9.0.	
	English units lb/Mwh	
TSS	0.542	0.271
pH	Within the range 6.0 to 9.0.	

7. Section 424.43 of the Covered Calcium Carbide Furnaces with Wet Air Pollution Control Devices Subcategory is amended as follows:

§ 424.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	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 product	
Total Cyanide	0.0056	0.0028
	(English units) lb/1000 lb of product	
Total Cyanide	0.0056	0.0028

8. A new § 424.57 for the Other Calcium Carbide Furnaces Subcategory is added as follows:

§ 424.57 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology: There shall be no discharge of process waste water pollutants to navigable waters.

9. Section 424.63 of the Electrolytic Manganese Products Subcategory is amended as follows:

§ 424.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

(a) 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 producing electrolytic manganese after application of the best available technology economically achievable:

Effluent characteristics	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 product	
Manganese	0.678	0.339
Ammonia-N	6.778	3.389
	(English units) lb/1000 lb of product	
Manganese	0.678	0.339
Ammonia-N	6.778	3.389

(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 producing electrolytic manganese dioxide after application of the best available technology economically achievable:

Effluent characteristics	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 product	
Manganese	0.176	0.088
Ammonia-N	1.762	.881
	(English units) lb/1000 lb of product	
Manganese	0.176	0.088
Ammonia-N	1.762	.881

10. Section 424.73 of the Electrolytic Chromium Subcategory is amended as follows:

§ 424.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	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 product	
Manganese	0.530	0.265
Chromium	.053	.027
Ammonia-N	5.297	2.649
	(English units) lb/1000 lb of product	
Manganese	0.530	0.265
Chromium	.053	.027
Ammonia-N	5.297	2.649

11. The new sections listed below are added as follows:

§—— 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
pH	Within the range 6.0 to 9.0.

Subcategory	Section designation
Covered calcium carbide furnaces with wet air pollution control devices	424.47
Electrolytic manganese products	424.67
Electrolytic chromium	424.77

PART 426—GLASS MANUFACTURING POINT SOURCE CATEGORY

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

1. The sections listed below are added as follows:

§—— 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, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology: There shall be no discharge of process waste water pollutants to navigable waters.

Subcategory	Section designation (40 CFR)
Insulation fiberglass	426.17
Sheet glass	426.27
Rolled glass manufacturing	426.37

§ 426.43 [Reserved]

2.(a) Section 426.43 of the Plate Glass Manufacturing Subcategory is redesignated as § 426.47 and the original section number reserved for future use.

(b) The title and first paragraph of the section redesignated above is amended to read as follows:

§ 426.47 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.

* * * * *

3. The regulations listed below are withdrawn and the section numbers reserved for future use.

Subcategory	Section designation
Automotive glass tempering	426.63
Glass container manufacturing	426.83
Glass tubing (Danner) manufacturing	426.103

4. The regulations listed below are added as follows:

§—— 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 limitation
pH	Within the range 6.0 to 9.0.

Subcategory	Section designation (40 CFR)
Float glass manufacturing	426.57
Automotive glass tempering	426.67
Automotive glass laminating	426.77
Glass container manufacturing	426.87
Glass tubing (Danner) manufacturing	426.107
Television picture tube envelope manufacturing	426.117
Incandescent lamp envelope manufacturing	426.127
Hand pressed and blown glass manufacturing	426.137

5. Section 426.53 for the Float Glass Manufacturing subcategory is amended as follows:

§ 426.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

* * * * *

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (g/kkg of product)	
Phosphorus	0.05	0.05
	English units (lb/ton of product)	
Phosphorus	0.0001	0.0001

6. Section 426.73 for the Automotive Glass Laminating subcategory is amended as follows:

§ 426.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

* * * * *

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	Metric units (g/kkg of product)	
Phosphorus	.30	.30
	English units (lb/ton of product)	
Phosphorus	.06	.06

7. Section 426.113 of the Television Picture Tube Envelope Manufacturing Subcategory is amended as follows:

§ 426.113 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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. These limitations are applicable to the abrasive polishing and acid polishing waste water streams.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	(Metric units) g/kkg of furnace pull	
Fluoride	120.0	60.0
Lead	0.9	0.45
	(English units) lb/1000 lb of furnace pull	
Fluoride	0.12	0.06
Lead	0.0009	0.00045

8. Section 426.123 of the Incandescent Lamp Envelope Manufacturing Subcategory is amended as follows:

§ 426.123 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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:

(a) Any manufacturing plant which frosts incandescent lamp envelopes shall meet the following limitations with regard to the finishing operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	(Metric units) g/kkg of product frosted	
Fluoride	104.0	52.0
Ammonia	240.0	120.0
	(English units) lb/1000 lb of product frosted	
Fluoride	0.104	0.052
Ammonia	0.24	0.12

9. Section 426.133 of the Hand Pressed and Blown Glass Manufacturing Subcategory is amended as follows:

§ 426.133 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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:

(a) Any plant which melts raw materials, produces hand pressed or blown leaded glassware, discharges greater than 50 gallons per day of process waste water, and employs hydrofluoric acid finishing techniques shall meet the following limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	mg/l	
Lead	0.2	0.1
Fluoride	26.0	13.0

(b) Any plant which melts raw materials, produces non-leaded hand pressed or blown glassware, discharges greater than 50 gallons per day of process waste water, and employs hydrofluoric acid finishing techniques shall meet the following limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	mg/l	
Fluoride	26.0	13.0

PART 427—ASBESTOS MANUFACTURING POINT SOURCE CATEGORY

40 CFR Subchapter N Part 427 for the Asbestos Manufacturing Point Source Category is amended as follows:

1. Section 427.93 of the Solvent Recovery Subcategory is amended to read as follows:

§ 427.93 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	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 asbestos products	
COD	0.30	0.15
	(English units) lb/1,000 lb of finished asbestos products	
COD	0.30	0.15

2. A new § 427.97 is added to the Solvent Recovery Subcategory as reads below:

§ 427.97 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 characteristics	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 asbestos products	
TSS	0.18	0.09
pH	Within the range 6.0 to 9.0.	
	(English units) lb/1,000 lb of finished asbestos products	
TSS	0.18	0.09
pH	Within the range 6.0 to 9.0.	

PART 432—MEAT PRODUCTS POINT SOURCE CATEGORY

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

1. The sections listed below are withdrawn and the section numbers reserved for future use.

Subcategory	Section designation (40 CFR)
Simple Slaughterhouse	432.13
Complex Slaughterhouse	432.23
Low Processing Packinghouse	432.33
High Processing Packinghouse	432.43

2. The new sections listed below are added as follows:

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

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section and attributable to on-site slaughter or subsequent meat, meat product or byproduct processing of carcasses of animals slaughtered on-site, 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
Fecal coliform pH	Maximum at any time 400 mpn/100 ml. Within the range of 6.0 to 9.0.

Subcategory	Section designation
Simple Slaughterhouse	432.17
Complex Slaughterhouse	432.27
Low Processing Packinghouse	432.37
High Processing Packinghouse	432.47

§ 432.53 [Reserved]

3. (a) Section 432.53 of the Small Processor Subcategory is redesignated as Section 432.57 and the original section number reserved for future use.

(b) The title and first paragraph of the section redesignated above is amended to read as follows:

§ 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.

* * * * *

4. Section 432.63 of the Meat Cutter Subcategory is amended as follows:

§ 432.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Milligrams per liter—effluent	
Ammonia	8.0 mg/l	4.0

5. Section 432.73 of the Sausage and Luncheon Meats Processor Subcategory is amended as follows:

§ 432.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Milligrams per liter—effluent	
Ammonia	8.0 mg/l	4.0

6. Section 432.83 of the Ham Processor Subcategory is amended as follows:

§ 432.83 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Milligrams per liter—effluent	
Ammonia	8.0 mg/l	4.0

7. Section 432.93 of the Canned Meats Processor Subcategory is amended as follows:

§ 432.93 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

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 characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Milligrams per liter—effluent	
Ammonia	8.0 mg/l	4.0

8. Section 432.103 of the Renderer Subcategory is amended as follows:

§ 432.103 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

(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 available technology economically achievable:

Effluent characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	(Metric units) kg/kgg of raw material	
Ammonia	0.14	0.07
	English units lb/1,000 lb of raw material	
Ammonia	0.14	0.07

9. A new § 432.107 for the Renderer Subcategory is added as follows:

§ 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 technology pollutant control technology:

Effluent characteristics	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 & grease	0.10	0.05
pH	Within the range 6.0 to 9.0	
Fecal coliforms	Maximum at any time 400 mpn/100 ml.	
	(English units) lb/1,000 lb of finished product	
BOD5	0.18	0.09
TSS	0.22	0.11
Oil & grease	0.10	0.05
pH	Within the range 6.0 to 9.0	
Fecal coliforms	Maximum at any time 400 mpn/100 ml.	

(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.

$$\text{BOD5 Adjustment (kg/kkg RM)} = \frac{3.6 \times (\text{number of hides})}{\text{kg of raw material}}$$

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

$$\text{TSS Adjustment (kg/kkg RM)} = \frac{6.2 \times (\text{number of hides})}{\text{kg of raw material}}$$

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

10. The new sections listed below are added as follows:

§ —— 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
Fecal coliform	Maximum at any time 400 mpn/100 ml.
pH	Within the range of 6.0 to 9.0

Subcategory and section designation

Meat Cutter, 432.67.
Sausage and Lucheon Meats Processor, 432.77.
Ham Processor, 432.87.
Canned Meats Processor, 432.97.

Appendix A—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.

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 Manufacturing, 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 440/1-75/038.
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.

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

Background. In order to develop an effluent limitation which meets BCT requirements, Congress 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 type of 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/l BOD and 30 mg/l TSS) and advanced secondary treatment (10 mg/l BOD and 10 mg/l TSS). The difference in cost is divided by the difference in pounds of conventional pollutants removed, resulting in an estimate of the "dollar per pound" of pollutant removed.

The following details the specific calculation of this POTW cost figure. This involves four basic steps: first, the average size POTW is determined; second, the total annual costs for secondary and advanced secondary treatment are estimated; third, the pollutant removal of the systems is calculated; fourth, the additional costs are divided by the additional pounds of pollutants removed.

All the 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 can be updated to current year dollars by use of these indices.

Average sized POTW. The POTW cost figure is based on the average flow size POTW for the Nation. This average size is calculated by dividing the total national daily flow of sewage by the number of POTWs in the country. There are 26,205 mgd of sewage discharged by 14,592 POTWs which results in an average size POTW of 2 mgd.[1]

Total annual POTW costs. The Agency based its estimates of annual POTW costs on information from two documents: The Construction Cost Document[2] and the O & M Cost Document[3] both issued by EPA's Office of Water Program Operations. These documents provide the most up-to-date information regarding the costs of constructing and operating POTWs.

[1] "1976 Survey of Needs, Conveyance and Treatment of Municipal Wastewater, Summaries of Technical Data," EPA 430/9-78-002, February 1979, at 9 and 13.

[2] "Construction Costs for Municipal Wastewater Treatment Plants: 1973-1977," EPA 430/9-77-013, January 1978 (hereinafter cited as "Construction Cost Document").

[3] "Analysis of Operations and Maintenance Costs for Municipal Wastewater Treatment Systems," EPA 430/9-77-015, May 1978 (hereinafter cited as "O & M Cost Document").

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

The annual capital cost for a new AST system is equal to:

$$\frac{\text{capital cost of AST}}{\text{capital recovery factor}} \times \text{price deflator}$$

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This is specifically calculated as follows.

(1) capital cost of AST [4] = $(3.5 \times 10^6)(Q^{.91})$, where Q is flow in mgd.

$= (3.5 \times 10^6)(2^{.91})$

= $6.61 million

(2) capital recovery factor [5] = 9.427, based on a 30 year amortization at a 10 percent interest rate.

(3) price deflator [6] = $\frac{\text{LCAT index, third quarter 1976}}{\text{LCAT index, first quarter 1978}}$

$= \frac{129}{143}$

$= .902$

(4) annual capital cost of AST = $\frac{\text{capital costs of AST}}{\text{capital recovery factor}}$ x price deflator.

$= \frac{\$6.61 \text{ million}}{9.427} \times .902$

= $.633 million a year

The annual savings from having secondary treatment in-place are equal to:

$$\frac{\text{capital savings of in-place secondary}}{\text{capital recovery factor}} \times \text{price deflator}$$

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4 Construction Cost Document. Supra note 2, Figure 7.1, curve 2.

5 Management Accounting, Robert Anthony and James Reece, June 1975, Appendix Tables, Table B (hereinafter cited as "Management Accounting").

6 "Construction Cost Index Quarterly Recap," Office of Water Program Operations, EPA, first quarter 1976 et seq (hereinafter cited as "Construction Cost Index")

This is specifically calculated as follows.

(1) capital savings of in-place secondary[7] = $(2.145 \times 10^6)(Q^{.89})$, where Q is flow in mgd

$= (2.145 \times 10^6)(2^{.89})$

= $3.98 million

(2) capital recovery factor[8] = 9.427, based on a 30 year ammortization at a 10 percent interest rate.

(3) price deflator[9] $= \frac{\text{SCCT index, third quarter 1976}}{\text{SCCT index, first quarter 1978}}$

$= \frac{119}{132}$

$= .902$

(4) annual capital savings of in-place secondary $= \frac{\text{capital savings of in-place secondary}}{\text{capital recovery factor}} \times \text{price deflator}$

$= \frac{\$3.98 \text{ million}}{9.427} \times .902$

= $.381 million a year.

The O&M costs for an AST are equal to: O&M cost for AST x price deflator.

This is specifically calculated as follows.

(1) O&M cost[10] = $(6.85 \times 10^4)(Q^{1.44})$, where Q is flow in mgd

$= (6.85 \times 10^4)(2^{1.44})$

= $.186 million a year

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7 Construction Cost Document. Supra note 2, Figure 7.1, curve B.

8 Management Accounting, Supra note 5, Appendix Tables, Table B.

9 Construction Cost Index, Supra note 6.

10 O&M Cost Document, Supra note 3, Figure E. 2-4.

(2) price deflator [11] = $\frac{\text{O\&M index third quarter 1976}}{\text{O\&M index, first quarter 1978}}$

$= \frac{206}{230}$

$= .896$

(3) O&M for an AST = O&M cost x price deflator

= $.186 million a year x .896

= .167 million a year

The O&M costs for secondary treatment are equal to:

O&M cost for secondary treatment x price deflator.

This is specifically calculated as follows.

(1) O&M cost [12] = $(8.25 \times 10^4)(Q^{.96})$, where Q is flow in mgd.

$= (8.25 \times 10^4)(2^{.96})$

= $.160 million a year

(2) price deflator [13] = $\frac{\text{O\&M index, third quarter 1976}}{\text{O\&M index, first quarter 1978}}$

$= \frac{206}{230}$

$= .896$

(3) O&M for secondary treatment = O&M cost x price deflator

= $.160 million a year x .896

= $.143 million a year

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11 "O&M Cost Index Quarterly Recap," Office of Water Program Operations, EPA, first quarter 1976 et seq (hereinafter cited as "O&M Cost Index").

12 O&M Cost Document, Supra note 3, Figure E. 2-3.

13 O&M Cost Index, Supra note 11.

The incremental total annual cost of upgrading in-place secondary treatment to AST is equal to:

(annual capital cost of new AST + O&M for AST) -

(annual capital savings of having in-place secondary treatment + O&M for secondary treatment).

This is specifically calculated as follows, using the results of the previous calculations.

Incremental total annual cost = ($.633 million a year + $.167 million a year) - ($.381 million a year + $.143 million a year)

= ($.800 million a year)-($.524 million a year)

= $.276 million a year

Pollutant Removal by POTWs. The other half of calculating the cost per pound of pollutant removed requires the determination of the number of pounds of conventional pollutants removed by advanced secondary treatment beyond secondary treatment. 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.[14] For a 2 mgd POTW that treats BOD to 30 mg/l and TSS to 30 mg/l the pounds of BOD and TSS removal equal:

= flow x change in concentration

$$= \frac{(2 \text{ million gallons})}{\text{day}} \times \frac{((210 + 230) - (30 + 30))\text{mg}}{\text{liter}}$$

$$= \frac{(2 \text{ million gallons})}{\text{day}} \times \frac{(380)\text{ mg}}{\text{liter}}$$

$$= \frac{(2 \text{ million gallons})}{\text{day}} \times \frac{(380 \text{ mg})}{\text{liter}} \times \frac{(365 \text{ days})}{\text{year}} \times \frac{(3.785 \text{ l})}{\text{gallon}} \times \frac{(1 \text{ lb})}{454{,}000 \text{ mg}}$$

= 2.31 million pounds of BOD and TSS removed per year.

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14 "Areawide Assessment Procedures Manual, Appendix H, Point Source Control Alternatives," EPA Laboratories, Cincinnati, Ohio, at H-14.

For an advanced secondary treatment plant that treats to 10 mg/l BOD and 10 mg/l TSS the removal is:

$$= \frac{(2 \text{ million gallons})}{\text{day}} \times \frac{(210 + 230) - (10 + 10)) \text{ mg}}{\text{liter}}$$

$$= \frac{(2 \text{ million gallons})}{\text{day}} \times \frac{(420)\text{mg}}{\text{liter}} \times \frac{(365 \text{ days})}{\text{year}} \times \frac{(3.785 \text{ l})}{\text{gallon}} \times \frac{(1 \text{ lb})}{454{,}000 \text{ mg}}$$

$$= 2.55 \text{ million pounds a year}$$

The incremental removal equals (2.55 million pounds a year) - (2.31 million pounds a year) = .24 million pounds a year.

The effluent characteristics of 30 mg/l BOD and 30 mg/l TSS for secondary treatment were selected, because this is the legal requirement for POTWs as 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. Using the best recognized performance gives the POTWs credit for removing the most pollutants and therefore tends to bias the per pound cost of pollutant removal downward. This will result in the greatest possible relief for industries. Appendix D discusses this in additional detail. Both the 30 mg/l and the 10 mg/l performance levels correspond to the maximum 30-day average performance of the POTW.

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:

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

$$= \frac{\$.276 \text{ million a year}}{.24 \text{ million pounds a year}}$$

$$= \$1.15 \text{ a pound}$$

This cost is indexed for various time periods below:

Cost of Pollutant Removal

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1976	$1.10	$1.14	$1.15	$1.17
1977	$1.18	$1.20	$1.25	$1.26
1978	$1.27	$1.30	$1.34	$1.41

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Appendix C—Industrial Category Discussion Summary Table of Data

Following is a category-by-category discussion of the analysis of each of the guidelines reviewed. Included in the discussion are responses to the industry specific comments made by representatives of each industry on the August 23, 1978 proposal.

Following the discussion, Table C1 summarizes the data used in the determination of the reasonableness of the guidelines. The table lists the model plants that were considered for each subcategory for each industry in this review. Column 1 shows the size (small, medium, large) of the model plants. Column 2 shows the cost per pound of conventional pollutant removed.

Dairy Products Processing (40 CFR Part 405)

Pollutants controlled: In all subcategories the only conventional pollutants controlled are BOD5, total suspended solids, and pH. Nonconventional and toxic pollutants are not controlled.

Methodology: Costs and pollutant removals for model plants in each subcategory are constructed from information contained in the development document. This information is based on production, waste water flow, waste loading and waste load reduction at the BPT and BAT levels, and the costs to achieve those levels. In all of the subcategories, there are different limitations for small and large plants. The limitations for the small plants are less stringent than those for the large plants in the subcategory. Each set of model plants is constructed so as to test the two sets of limitations in each subcategory. The small plant is assumed to receive one-half the level of milk equivalent specified in each subcategory regulation, while the large plant is assumed to receive twice the level of milk equivalent specified in each subcategory regulation. For example, if the size cutoff specified between the different regulations in a subcategory is 100,000 pounds per day of milk equivalent, it is assumed that the small plant receives 50,000 pounds per day and the large plant receives 200,000 pounds per day.

Results: Controls of pH are reasonable because the BAT guidelines do not require stricter control than what is required under BPT, therefore the pH level at BCT is being promulgated equal to BPT control. For all subcategories except the receiving stations, natural and processed cheese, dry milk and condensed whey subcategories, controls of BOD5 and TSS are reasonable because the model plants exhibit lower costs than a POTW to remove a pound of BOD5 and TSS. Therefore, those eight BAT regulations for the dairy products processing industry are being withdrawn and identical BCT limitations are being promulgated.

In the receiving stations subcategory, the large model plant is found to have unreasonable costs and the small model plant reasonable costs. Therefore, the Agency is promulgating BCT limitations equal to BAT for small plants processing 150,000 pounds or less of milk equivalent per day and withdrawing the limitations for plants larger than this size cutoff.

In the natural and processed cheese subcategory, the limitations for small plants are reasonable and the limitations for large plants unreasonable. Therefore, the Agency is promulgating BCT limitations for small plants processing 100,000 lbs/day or less of milk equivalent equal to BAT. The limitations for large plants are being withdrawn.

In the dry milk subcategory, the small plants are found unreasonable and the large plants reasonable. Therefore, the Agency is promulgating the BCT limitations equal to BAT for large plants processing more than 145,000 pounds per day of milk equivalent, and withdrawing the limitations for smaller plants.

In the condensed whey subcategory, the limitations for large plants processing 300,000 pounds per day of fluid raw whey are found unreasonable and are being withdrawn.

For two subcategories, condensed milk (Subpart I) and condensed whey (Subpart K), discharges of barometric condenser water for small plants are allowed for BPT, while no discharge of barometric condenser water is assumed for BAT. The Agency is reviewing comments submitted on the costs for conversion from barometric condensers. The BAT limitations for the small plants (less than 100,000 per day of milk equivalent for condensed milk, and less than 300,000 pounds per day of fluid raw whey for condensed whey) in these subcategories are being withdrawn and BCT limitations will be promulgated after further review.

Industry Comments:

The Agency used data from old development documents which may be outdated and inaccurate.

The Agency has reviewed the existing BAT limitations for this, and all other, secondary industries on the basis of the information in the Agency record supporting those limitations. The gathering of new data would have unduly delayed the completion of the review, and was not contemplated by the Congress.

The Dairy industry representatives, with only one exception, did not provide any new data. The data provided by one spokesman was plant specific and not sufficient to represent the industry or the subcategory affected.

The Agency should consider the effects of other government regulations on the costs to the industry of achieving the effluent guidelines.

The limitations are evaluated based on information in the existing record. The effects of other government regulations on the pollutant load or costs of an industry were taken into account as part of the original regulatory development and contained in that record. No new consideration of those effects is warranted.

The Agency should include the costs of treating barometric condenser water in its evaluation of the limitations.

As mentioned above, this factor is being evaluated in the condensed milk and condensed whey subcategories.

The BAT limitations are not technologically achievable.

This review is limited to determining the cost reasonableness of existing regulations. It is not intended to reopen issues of technology which were properly addressed at the time BAT was promulgated.

Grain Mills (40 CFR Part 406)

Pollutants Controlled: In all subcategories tested, the only conventional pollutants controlled are BOD5, TSS, and pH. Non-conventional and toxic pollutants are not controlled.

Methodology: Data for all sizes of model plants used are taken from the development documents for the industry. The data are based on production, waste water flow, waste loading and waste load reduction at the BPT and BAT levels of control and the costs to achieve those levels of control. In those instances were more than one model plant has been developed to represent the subcategory, the cost test is applied to all model plants.

Results: Controls of pH are reasonable because the BAT guidelines do not require stricter control than required under BPT. Consequently, the pH regulations for all subcategories are being promulgated equal to the pH control at BPT.

Four of the subcategories (normal wheat flour milling, normal rice milling, animal feed, and hot cereal) are subject to a BPT and BAT regulation of zero discharge and therefore do not require any further analysis. BCT will call for a zero discharge limitation for these four subcategories. BAT is being kept in force because the zero discharge limitation applies to all pollutants, not only conventional pollutants.

Of the six remaining subcategories in this category, only one (bulgur wheat flour milling) is determined to be unreasonable. The cost per pound of BOD5 and TSS removed exceeds the POTW costs. The BAT control of BOD5 and TSS for this subcategory is being withdrawn.

The remaining five subcategories have reasonable BAT limitations for conventional pollutants. Therefore, the Agency is promulgating the BCT effluent guidelines limitations for the remaining five subcategories (corn wet milling, corn dry milling, parboiled rice processing, ready-to-eat ceral and wheat starch and gluten) equal to the existing BAT effluent limitations guidelines for conventional pollutants.

Industry Comments:

The Agency uses cost figures which are inaccurate and understated.

Data submitted by industry spokesmen showed total costs to be significantly higher than those used by EPA. An analysis of these submitted costs shows, however, that several of the treatment component costs included in the figures are those of technologies required under BPT. The data submitted is not sufficient for the Agency to change its determination of reasonableness since only costs above those required for BPT are appropriate to consider.

Canned and Preserved Fruits and Vegetables Processing (40 CFR Part 407)

Pollutants Controlled: In all subcategories, BOD5, TSS and pH are controlled. Toxic and nonconventional pollutants are not controlled in any of the subcategories.

Methodology: Data for model plants in all of the subcategories are taken from the development document and economic analysis for the industry. This data includes information on production, waste water flow,

pollutant load concentration, pollutant load reduction at the BPT and BAT levels of control, and costs to achieve those levels of control.

Results: (1) Citrus products, and dehydrated potato products: The limitation of pH is reasonable because it is the same at both BPT and BAT. Therefore, the BCT pH limitation is being promulgated equal to BPT. The BAT guidelines for two of these subcategories for TSS and BOD5, are determined to be reasonable and are redesignated as BCT.

(2) Apple juice: Two model plants are tested in this subcategory. The large model plant (500 tons per day) is reasonable. The small plant (100 tons per day) is unreasonable. Therefore, the Agency has determined that the BAT limitations for plants processing less than 500 tons per day of raw material will be withdrawn and that BCT limitations for plants processing 500 tons per day or more of raw material will be promulgated equal to BAT.

(3) Apple products: Two model plants are tested in this subcategory. The BAT effluent guideline for the large plant (100 tons per day) is reasonable, while the BAT effluent guideline for the small plant (10 tons per day) is unreasonable. The Agency is promulgating BCT equal to BAT for all plants that have a production of at least 100 tons per day of raw material processed. Additionally, the Agency is withdrawing the BAT limitation for plants processing less than 100 tons per day of raw material.

(4) Canned and preserved fruits, canned and preserved vegetables, canned and miscellaneous specialties: In a separate action, pursuant to an agreement between the Agency and the National Food Processors Association, the BAT limitations for these subcategories have been withdrawn. 44 FR 36033 (June 20, 1979). BCT limitations will be promulgated after further review.

(5) Frozen potato products: The Agency is reviewing data submitted during the comment period. The BAT limitations are withdrawn and BCT limitations will be promulgated after further review.

EPA used outdated and inaccurate data in determining the reasonableness of BAT for the potato processing industry.

Potato processing industry spokesmen submitted data on current operating conditions. As discussed above EPA is reviewing the data submitted.

Sugar Processing (40 CFR Part 409)

Pollutants Controlled: In all subcategories, BOD5, TSS and pH are controlled. In the beet processing subcategory, fecal coliform is also controlled. No nonconventional or toxic pollutants are controlled.

Methodology: Data for model plants in all of the subcategories are taken from the development documents published pursuant to the promulgation of BAT guidelines. The data includes information on production, waste water flow, pollutant load concentrations, pollutant load reduction at the BPT and BAT levels of control, and the costs to achieve those levels of control.

Results: Three subcategories were considered in this review: beet sugar processing, crystalline cane sugar refining, and liquid cane sugar refining. The Hilo-Hamakua Coast of the Island of Hawaii raw cane sugar processing subcategory, the Louisiana raw cane sugar processing subcategory, and the Puerto Rican raw cane sugar processing subcategory do not have any BAT regulations in effect. The Florida and Texas raw cane sugar processing subcategory and the Hawaiian raw cane sugar processing subcategory have a BPT effluent limitation of zero discharge. Consequently, no test of reasonableness is required.

For the three subcategories originally tested, controls of pH and fecal coliform are reasonable because the BAT guidelines do not require any additional control beyond BPT.

The Agency is not promulgating its determination of reasonableness in the beet sugar and cane sugar refining subcategories. In the proposed rulemaking, the limitations for all subcategories were found reasonable. In the cane sugar refining subcategories, the Agency is currently reviewing the BAT limitations pursuant to a court agreement with the industry. *See California & Hawaiian Sugar Co. v. EPA*, 553 F. 2d 280, 282, n.3. (2 Cir. 1977). The BCT limitations will be established as part of this review. In the interim, the BAT limitations for conventional pollutants are withdrawn. In the beet sugar subcategory, the industry submitted data sufficient to warrant a reevaluation of the Agency's determination of reasonableness.

Industry Comments:

The Agency failed to use current data on costs and pollutant removals to determine the reasonableness of the limitations.

Representatives of the beet sugar industry have provided industrywide data on costs and pollutant loadings. The Agency is still evaluating this data and will promulgate its determination of reasonableness when the evaluation is complete.

Canned and Preserved Seafoods (40 CFR Part 408)

The Agency, in a separate action, is reviewing the BAT limitations for the seafoods industry. When that review is complete, the BCT limitations for this industry will be promulgated. Until that time, the Agency is withdrawing all BAT limitations in the seafood industry.

Cement Manufacturing (40 CFR Part 411)

Pollutants Controlled: In all subcategories the conventional pollutants controlled are total suspended solids and pH. The nonleaching and leaching subcategories also have a temperature limitation.

Methodology: The data for the subcategory model plant are taken from the development document. The data includes information on production, waste water flow, pollutant loads and concentrations, pollutant load reduction at the BPT and BAT levels, and the costs to achieve those treatment levels.

Results: The leaching subcategory is the only subcategory which is tested and is found to have unreasonable limitations for TSS at the BAT level. The Agency is withdrawing the BAT control of TSS for this subcategory, but is retaining the control for pH, redesignating that control as BCT.

The subcategories of nonleaching and materials storage piles runoff were not tested because both are under equal limitations at BPT and BAT. The Agency is promulgating the BCT limitations equal to the BAT limitations.

Industry Comments:

Industry disputed EPA's statement that the BCT limitations for the Nonleaching and Material Runoff Subcategories were to be set at zero discharge.

In Appendix E of its proposed regulation, EPA stated that the BPT and BAT limitations were zero discharge. This was an error; discharge is allowed in these subcategories. However, BPT and BAT limitations are identical, and, in the proposed regulation itself, BCT was set at the correct level. This rulemaking promulgates those limitations as BCT.

Feedlots (40 CFR Part 412)

Pollutants Controlled: The pollutants BOD5 and fecal coliform are controlled under BPT in the ducks subcategory. The BAT limitation is no discharge of process wastewater. In the other subcategory (all subcategories except ducks) the BPT and BAT limitations are zero discharge. There are no nonconventional or toxic pollutant controls.

Methodology: The only subcategory which has stricter limitations at BAT than BPT is the ducks subcategory. However, the information on the costs and technologies necessary to achieve BAT is not available. Because of this, the BAT limitation for this subcategory is being withdrawn until information becomes available to properly evaluate the limitation.

Results: Subcategory A (all subcategories except ducks) is excluded from the analysis because both BPT and BAT limitations are zero discharge of process wastewater. This limitation will also be used as the BCT regulation.

The BAT limitations for the ducks subcategory are being withdrawn. The BCT limitations for this subcategory will be promulgated after further information is developed to evaluate the subcategory.

Industry Comments:

The Agency improperly found the ducks subcategory to be reasonable without performing the required cost test.

The Agency recognizes this inconsistency and is withdrawing those limitations.

Fertilizer Manufacturing (40 CFR Part 418)

The phosphate subcategory has zero discharge limitations at both BPT and BAT. The effluent resulting from storm runoff also must be treated to certain levels of concentration. These concentration limits are equal at BPT and BAT. Therefore, the BCT limitation is being promulgated equal to BAT.

The ammonium sulfate production and mixed and blend fertilizer production subcategories have zero discharge limitations at BPT and BAT. This same limitation is being promulgated for BCT.

The urea and ammonium nitrate subcategories are being dealt with in a separate rulemaking.

The nitric acid subcategory has no limitations on conventional pollutants.

Industry Comments: No comments were received concerning this industry.

Phosphate Manufacturing (40 CFR Part 422)

Pollutants Controlled: Total suspended solids, total phosphorus, and pH are the controlled conventional pollutants in this point source category. Fluoride, a nonconventional pollutant, is also controlled.

Methodology: Model plant data for the sodium phosphate subcategory (the only subcategory tested) is taken from the development document. The data includes information in production, waste water flow, pollutant loading, pollutant load reduction at the BPT and BAT levels, and the costs associated with achieving those levels of control.

Results: The sodium phosphates subcategory is found to have reasonable BAT limitations for conventional pollutants. Although the incremental costs to meet BAT are not specified, the costs are estimated to be less than 5% of the costs to comply with BPT. Based on this estimate, the cost per pound of TSS removed, if all costs were applied to the removal of TSS, is less than the cost of removal for POTWs. Therefore the BCT control of TSS and pH is being equated to BAT control.

The defluorinated phosphate rock and defluorinated phosphoric acid subcategories have BAT limitations which are equal to their BPT limitation. The Agency is therefore promulgating the BCT limitations equal to the BAT limitations for conventional pollutants. No other subcategories have regulations which are in effect.

Industry Comments: No comments were received concerning this industry.

Ferroalloy Manufacturing (40 CFR Part 424)

Pollutants Controlled: In all subcategories tested, the controlled conventional pollutants are total suspended solids and pH. Toxic pollutants, including chromium, manganese, cyanide and phenols are also controlled in most subcategories.

Methodology: The data for a model plant for each subcategory are from the development documents. All data on model plant production, waste water flow, and pollutant loading, and pollutant control levels are taken from those development documents.

Results: Of the six subcategories analyzed as to the reasonableness of their respective conventional pollutant BAT limitations, three are reasonable and three unreasonable. The three reasonable subcategories are: Subpart A, open electric furnaces and other smelting operations with wet air pollution control devices; Subpart B, covered electric furnaces and other smelting operations with wet air pollution control devices; and Subpart C, slag processing. The BCT limitations for these subcategories are set equal to BAT. The three unreasonable subcategories are: Subpart D, covered calcium carbide furnaces with wet air pollution control devices; Subpart F, electrolytic manganese products; and Subpart G, electrolytic chromium. The BAT limitations for the unreasonable subcategories are therefore withdrawn and BCT limitations will be set at a later date.

Subpart E, other calcium carbide furnaces, has a BPT and BAT limitation of zero discharge and is, therefore, not included in the analysis. The BCT limitation is being promulgated as zero discharge for this subcategory.

Industry Comments:

The industry does not believe TSS to be an indicator of toxic pollutants. If it is designated such, then costs attributable to the Resource Conservation and Recovery Act should also be considered in the BCT cost test.

The designation of TSS as an indicator of toxic pollutants in this industry is only a possibility. If the TSS limitation in this industry is called a toxic indicator, the TSS parameter would also be controlled under BAT.

The Agency used model plants which vary considerably in size from those found in the development document.

Model plants in the industry were developed to find a flow size for the cost comparison to a POTW in the proposed methodology. The revised methodology eliminates the need to develop flow sizes for model plants. The development document indicates a constant cost per megawatt-hour (Mwhr) of power use. The effluent limitations are set on a pounds per Mwhr basis. The cost per pound is calculated by dividing the cost per Mwhr by the pounds of removal per Mwhr. The result is the same as that stated in the proposed rules.

Glass Manufacturing (40 CFR Part 426)

Pollutants Controlled: Total suspended solids and pH are controlled in all subcategories. Three subcategories have increased controls for oil. Additionally, three subcategories have controls of other pollutants such as fluoride and lead.

Methodology: Data for a model plant for each subcategory tested are from the industry development documents. The data includes information on production, waste water flow, pollutant concentrations, and treatment costs to achieve the BPT and BAT limitations, as well as the pollutant load reductions for each level of control.

Results: The BPT and BAT limitation for process water in the insulation fiberglass subcategory is zero discharge. Specific limitations are established at BPT on the discharge of conventional pollutants and phenols from wet air pollution control devices. The BAT limitation is zero discharge from all sources. Since the zero discharge limitation controls phenols, a toxic pollutant, no BCT analysis is required. A BCT limitation of zero discharge from all sources is being promulgated.

The sheet glass and rolled glass subcategories are not analyzed because the BPT limitation is zero discharge. BCT is also being promulgated as zero discharge for these subcategories.

The plate glass subcategory is the only subcategory of those tested to be found reasonable. The Agency is promulgating the BCT control of conventional pollutants equal to the BAT control of conventional pollutants in this subcategory.

All other subcategories (float glass manufacturing, automotive glass tempering, automotive glass laminating, glass container manufacturing, television picture tube envelope manufacturing, incandescent lamp envelope manufacturing and hand pressed and blown glass manufacturing) are found to be unreasonable and the BAT control of conventional pollutants is being withdrawn. In the hand pressed and blown glass subcategory, no cost information is available for the analysis. However, the technology and pollutant loads are similar to the rest of the unreasonable subcategories. On this basis, it is assumed that costs would be similar, and unreasonable.

Industry Comments: No comments were received concerning specific industry issues.

Meat Products (40 CFR Part 432)

Pollutants Controlled: In all subcategories tested, the conventional pollutants controlled are TSS, BOD5, oil and grease and pH. Ammonia, a nonconventional pollutant, is also controlled in all subcategories. However, the ammonia limitation has been remanded in the simple slaughterhouse, complex slaughterhouse, low processing packinghouse and high processing packinghouse subcategories.

Methodology: The data for model plants for each subcategory are from the development documents for the regulations. The data includes information on production, waste water flow, pollutant concentrations, pollutant reductions at the BCT and BAT levels of control, and the costs to achieve those levels of control for each model plant.

Results: For subparts A through D, portions of the BAT limitations not applying to conventional pollutants have been remanded by the courts. In one of these subcategories, the TSS limitations were also remanded. In response to this removal, these limitations are currently being reviewed. In the interim, the Agency is withdrawing the remaining BAT limitations for BOD5 and TSS. The limitations for fecal coliform and pH in these subcategories are being retained because controls of these pollutants are the same at BPT and BAT.

In the case of four additional meat industry subcategories, subparts E through I, the Agency is conducting a review of the limitations beyond BPT, so BCT is not being promulgated at this time. The final limitations will be promulgated at a later date.

In the small processor subcategory, there are minimal costs associated with the BAT limitations. The costs of such additional removal are reasonable and the Agency is promulgating BCT equal to BAT.

The limitations in the renderer subcategory are reasonable. The waste water flow allows the existing end-of-pipe treatment system to remove ammonia and conventional pollutants. This technology was chosen as the most cost-effective means of controlling ammonia, a nonconventional pollutant. The costs are totally attributable to ammonia control in this case.

Industry Comments:

A substantial portion of the costs of treatment are attributable to conventional pollutant control. Not all costs should be allocated to ammonia control.

The Agency is reviewing its determination of reasonableness for the meat cutter, sausage and luncheon meats, ham processor and canned meats subcategories based on this comment. These subcategory regulations include extensive added and of

treatment beyond BPT, part of which could be attributable to conventional pollutant control. In the renderer subcategory, there is no added end-of-pipe treatment beyond BPT, part of which could be listed above. For the reasons stated above, the Agency is promulgating the BCT regulations for the renderer subcategory equal to BAT.

Other Industries

There are industrial categories and subcategories, other than those listed previously, that are not tested for reasonableness. These categories were excluded from the analysis because they do not have any regulations in effect, or have only BPT regulations in effect.

The industrial categories which have no regulations in effect are: water supply; miscellaneous foods and beverages; transportation; fish hatcheries and farms; steam supply; clay, gypsum, refractory, and ceramic production; concrete products; and shore receptors and bulk terminals.

Three additional industrial categories have in effect only the BPT limitations. These are offshore oil and gas extraction, hospitals, and mineral mining and processing. The mineral mining and processing category also has some subcategories which have no limitations in effect.

The Asbestos industrial category has a BAT limitation of zero discharge in seven subcategories. These subcategories are not analyzed because the zero discharge limit is for the control of toxic pollutants and is not subject to review.

Table C1.—*Summary of Data*

Industry and subcategory	1 Model Plant size	2 Model* Plant $/lb.
Dairy		
1. Receiving stations	s	0.58
	l	1.55
2. Fluid produce	s	.12
	l	.76
3. Cultured produce	s	.29
	l	.99
4. Butter	s	.26
	l	.59
5. Cottage, cream cheese	s	.35
	l	1.06
6 Natural, processed cheese	s	.61
	l	1.21
7. Fluid mix for ice cream	s	.38
	l	.98
8. Ice cream, frozen desserts.	s	.31
	l	.92
9. Condensed milk	Withdrawn pending further study.	1.09
10. Dry milk	s	1.63
	l	1.05
11. Condensed whey	Withdrawn pending further study.	1.30
12. Dry whey	s	.39
	l	.80
Grain mills		
13. Corn wet milling	s	.13
	m	.10
	l	.09
14. Corn dry milling	s	.85
	l	.56
15. Bulgar wheat	t	22.00
16. Parboiled rice	t	1.02
17. Ready-to-eat cereal	s	.76
	m	.57
	l	.45
18. Wheat starch and gluten	t	.20
Canned and preserved fruits and vegetables		
19. Apple juice	s	1.16
	l	
20. Apple products	s	1.79/3.74
	l	.35
21. Citrus products	s	.39
	l	.13
22. Frozen potato	Withdrawn pending further study.	
23. Dehydrated potato	s	.20
	l	.13
24. Canned and preserved fruits.	Withdrawn in separate action.	
25. Canned and preserved vegetables.	Do.	
26. Canned and miscellaneous specialties.	Do.	
Canned and preserved seafoods		
27. Farm raised catfish	Withdrawn pending further study.	
28. Conventional blue crab	Do.	
29. Mechanized blue crab	Do.	
30. Nonremote Alaskan crab	Do.	
31. Remote Alaskan crab	Do.	
32. Nonremote Alaskan whole crab.	Do.	
33. Remote Alaskan whole crab.	Do.	
34. Dungeness and tanner crab.	Do.	
35. Nonremote Alabama shrimp.	Do.	
36. Remote Alabama shrimp	Do.	
37. Northern shrimp	Do.	
38. Southern nonbreaded shrimp.	Do.	
39. Breaded shrimp	Do.	
40. Tuna	Do.	
41. Fish meal w/out solubles plant.	Do.	
42. West coast butchered salmon.	Do.	
43. West coast mechanized salmon.	Do.	
44. Non-Alaskan Conventional bottom fish.	Do.	
45. Non-Alaskan Mechanized bottom fish.	Do.	
46. Handshucked clam	Do.	
47. Mechanized clam	Do.	
48. Pacific handshucked oyster.	Do.	
49. Atlantic and Gulf hand-shucked oyster.	Do.	
50. Steamed and canned oyster.	Do.	
51. Sardine	Do.	
52. Non-Alaskan scallop	Do.	
53. Non-Alaskan herring fillet	Do.	
54. Abalone Processing	Do.	
Sugar processing		
55. Beet sugar	Not Promulgated pending further study	
56. Crystalline cane sugar	Do.	
57. Liquid cane sugar	Do.	
Cement manufacturing:		
58. Leaching	t	4.40
Feedlots		
59. Ducks	Data not available, withdrawn.	
Ferroalloys		
60. Open electric furnaces wet.	t	.84
61. Covered electric and smelting wet.	t	.83
62. Slag Processing	t	.02
63. Covered calcium carbide wet.	t	1.58
64. Electrolytic manganese	t	1.45
65. Electrolytic chromium	t	1.96
Glass manufacturing		
66. Ins. Fiberglass	t	(1)
67. Plate	t	.33
68. Float	t	14.42
69. Auto tempering	t	2.88
70. Auto laminating	t	5.58
71. Container	t	3.80
72. Tubing	t	2.76
73. TV picture tube	t	8.56
74. Incandescent Lamp envelope.	t	26.29
75. Hand pressed and blown	Costs unknown.	
Asbestos		
76. Cement Pipe	Not part of ECT review because pollutants are toxics.	
77. Cement sheet	Do.	
78. Paper starch binder	Do.	
79. Paper (elastomeric binder)	Do.	
80. Roofing	Do.	
81. Floor File	Do.	
82. Wet Dust Collection	Do.	
Meat products		
83. Simple slaughterhouse	Regulations remanded by the court, regulations suspended.	
84. Complex slaughterhouse	Do.	
85. Low Processed packinghouse.	Do.	
86. High processed packinghouse.	Do.	
87. Small Processed	No costs associated with meeting BAT.	
88. Meat cutter	Withdrawn pending further study.	
89. Sausage and luncheon	Do.	
90. Ham processing	Do.	
91. Canned meats	Do.	
92. Renderers	t	0
Phosphates		
93. Sodium phosphates	Minimal costs associated with meeting BAT.	

xs = Extra small size model plants.
s = Small size model plants.
m = Medium size model plants.
l = Large size model plants.
t = Typical size model plants.

*The model plant $/lb. is compared to a POTW cost of $1.15 to determine reasonableness.

[1] BAT technology applies to wastewater of wet scrubbers only, costs and removal's not available.

Appendix D—Responses to Comments

1. *Comment*—Several comments state that the Act requires the application of two tests in determining an appropriate BCT. Two supplemental tests are suggested by commenters. One involves some measure of water quality benefits, while the other calls for an examination of the cost-effectiveness of pollutant removal within an industry subcategory.

Response—Commenters base their assertion that the Act requires the use of two tests in establishing BCT on the specific language of Section 304(b)(4)(B). This subsection requires the Administrator to consider:

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

Although many commenters assert that this section requires the use of two tests, most simply point to the conjunctive nature of the clause contained in that section. Few suggest alternative tests.

In developing the proposed BCT methodology, EPA carefully examined the language of the statute and its legislative history. The Agency has fully and exhaustively looked at a number of alternative approaches and believes that the methodology detailed here fully satisfies Congressional intent.

The range of other tests which have been considered independently or as a supplement to the promulgated approach are detailed in the proposal (see 44 Fed. Reg. 37606–07). In fact, EPA did apply a second test, the "concentration test", in the proposed rulemaking, but for reasons explained elsewhere, this test is not being included in the final methodology.

Several commenters argue that, in addition to any POTW comparison, the local water quality benefits of applying BCT must be examined. They rely on that portion of section 304(b)(4)(B) which requires that BCT include consideration of "effluent reduction benefits." Consideration of "effluent reduction benefits" is already required in setting BPT limitations, and EPA has consistently interpreted this phrase as requiring an evaluation of the total incremental amount of pollutants removed by application of the effluent limitations. Courts have agreed that the phrase does not require an assessment of the benefits to local water quality. *See, e.g., Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011 (D.C. Cir. 1978); *American Petroleum Institute* v. *EPA,* 540 FW 1023 (10th Cir. 1976). As in the case of BPT and BAT, BCT limitations are nationally applicable technology-based limitations for which it is impossible to identify localized water quality benefits. However, EPA does consider "effluent reduction benefits" when the total quantity of pollutants removed is calculated and a cost per pound determined.

Several commenters argue that a "knee-of-the-curve" assessment be made which would identify the point at which the rate of increasing costs drastically begins to exceed pollutant removal rates. EPA agrees that the "knee-of-the-curve" analysis could conceptually be a valid consideration in determining BCT, and indeed one factor in assessing POTW costs was such an analysis. Nonetheless, the Agency found this concept impossible to apply in determining industry cost ratios. First, any determination of "knee-of-the-curve" requires large amounts of data about the performance of various levels of treatment technology. Such data is not now available and, in industries with limited technology options, cannot be developed. More fundamentally, this assessment involves the presumption that there is, in fact, some point where costs dramatically begin rise in relation to effluent reduction benefits. In virtually no case can such a point be identified for industrial sources. First, limited data do not yield sufficient information to plot any accurate graph of "cost to benefits". Second, in some cases, costs do not rise exponentially; certain later stages of treatment may in fact be more cost-effective than the necessary preliminary steps. In the absence of any "knee-of-the-curve" benchmark, there is no point at which costs can be said to be unreasonable in relation to benefits.

Some commenters suggest that a "knee-of-the-curve" be determined based on the ratio of the average cost of achieving BPT to the cost to progress from BPT to BAT. No suggestion is made, however, as to what ratio should be considered unreasonable. Again, this approach provides no benchmark for determining a point at which BCT costs are reasonable. Congress, however, established the POTW cost comparison which provides just such a benchmark.

2. *Comment*—Several commenters state that EPA should use BPT as a starting point in evaluating the reasonableness of existing limitations. They point to statements in the legislative history of the 1977 Amendments indicating that BPT was to be the starting point in determining BCT limitations. This statement is supported by citations of the legislative history which indicate that certain Members of Congress believed that BPT was generally an adequate level of control, and that BAT was probably unreasonably stringent.

EPA agrees that the purpose of establishing BCT is to insure that requirements beyond BPT are not unreasonable. EPA will allow only BPT to remain in-effect where further controls are appropriate. The POTW comparison establishes the maximum point at which costs are reasonable in relation to benefits. The Agency uses BPT as the base for determining the reasonableness of incremental levels of control.

3. *Comment*—EPA's proposed "concentration test" has no statutory basis and, moreover, fails to account for variation in influent pollutant concentrations and penalizes industries which practice water conservation.

Response—In order to provide for greater flexibility in conducting the industry BCT reviews, EPA proposed that a concentration test be performed where industries that had treatment costs higher than POTW costs. In this test, the effluent concentration of the industry subcategory was compared to the effluent of a POTW at secondary treatment, and, if the industrial effluent showed significantly higher concentrations of pollutants, BAT for the industry was determined to still be reasonable.

EPA agrees with many of the criticisms of the concentration test. Although the legislative history indicates that, in some cases, industries failing the POTW test may still have reasonable limitations, the use of this concentration test present problems. It may actually be a disincentive to water conservation, and it fails to account for differences in influent concentrations. Further, it may not be a good measure of treatment efficiencies. The test is therefore being dropped.

4. *Comment*—Several commenters assert that EPA, in establishing its cost comparison methodology, fails to consider additional factors specified by Congress.

Response—Section 304(b)(4)(B) provides that in establishing BCT the Administrator must consider a range of factors in addition to the cost reasonableness assessment. Such factors include, among others, the age of equipment, production processes and energy requirements. These factors are, however, identical to those which must be considered in establishing BAT, and have already been evaluated for those BAT limitations which have been found to be reasonable. When new BCT limitations are promulgated, these factors will be assessed when evaluating candidate technologies.

5. *Comment*—EPA should use a single number POTW cost figure for comparison with industry costs.

Response—In its proposed methodology, EPA compared the cost per pound of removal for industries with those of POTWs of comparable flow. Costs for these POTWs ranged from $0.36 to $1.72 per pound. This approach resulted, in some cases, in industries with low costs for removal being found to have unreasonable limitations, while limitations on industries with high costs were found to be reasonable. To remedy this problem, EPA now will use a single POTW cost figure for comparison with all industries. As discussed in Appendix B, this single number is based on costs for removal at a 2 mgd POTW. This size facility was selected based on a flow weighted average of existing POTWs.

6. *Comment*—Several commenters argue that EPA's use of the increment from BPT to BAT in its cost calculation underestimates the marginal costs of removal at BCT. These costs are underestimated, it is argued, because

costs are likely to rise at a much steeper rate as treatment levels reach BAT.

Response—EPA believes that use of the BPT to BAT increment appropriately reflects the costs per pound to achieve increased levels of control. For purposes of this review of the secondary industries no other increment could have been used. For most of these industries cost data was only available for the BPT and BAT technologies, and, since Congress did not intend that EPA undertake extensive new analyses, this was the only increment available for calculating BCT costs.

For any industry which BCT is established in the future, including the primary industries, EPA will evaluate the increment from BPT to the candidate BCT technology. This increment most accurately reflects the costs to upgrade existing facilities from BPT to BCT. Only such increased levels of control which pass the cost reasonableness assessment may be established as BCT.

The increment of BPT to BAT is suitable for several reasons. First, this increment does approximate the marginal costs of removal at the BCT candidate level. While use of narrower increments based on intermediate levels of technology might yield better approximations, none would accurately reflect marginal costs and thus, even these increments would be subject to the same criticism. Second, it is difficult to select the intermediate technologies to calculate costs and removals, since selection of intermediate technologies is, of necessity, arbitrary. If an intermediate increment were used, alternative increments could in all cases be identified which would affect the cost per pound calculation. Lastly a methodology which employed the suggested approach could not feasibly be employed by permit writers to set BCT limitations on a case-by-case basis.

Use of the increment from BPT to the candidate technology avoids these problems. Although various candidates might be evaluated, calculations of the cost per pound for each is certain since they are based on a fixed interval from BPT to the candidate level.

7. *Comment*—Several commenters argue that EPA should calculate POTW cost per pound of removal based on the increment from primary to secondary treatment or from raw waste load to secondary treatment.

Response—As discussed in the preamble section, "Modifications to the Proposal", EPA believes that for purposes of the BCT comparison, the increment from secondary to advanced secondary most accurately reflects costs per pound of pollutant removal at POTWs. This increment approximates marginal costs at secondary treatment, represents a narrow, cost-effective increment beyond secondary treatment, and parallels the increment used in the industry calculation.

Commenters suggest that EPA should calculate the POTW cost comparison figure to emphasize the initial cheapest pounds of pollutants removed by POTWs. EPA believes that this is clearly contrary to Congress' intent in this matter. Congress acknowledged that current BPT treatment requirements are reasonable, and that costs to achieve BPT were not to be included in industrial calculations. Inclusion of costs to go from raw waste load or primary treatment to secondary treatment in calculating POTW costs, however, would be comparable to calculation of BCT based on the costs to industry to progress from no control to BCT. Nor do any such increments have any conceptual value in identifying the marginal costs of treatment. Use of such increments biases the POTW figure and obviously leads to a very low POTW cost comparison figure.

8. *Comment*—Commenters argue that the POTW calculation is based on treatment practices that are peculiar to POTWs and not typical of industrial treatment. They notice that industry generally removes a greater percentage of pollutants and that industries generally have higher influent concentrations.

Response—The POTW/industry cost comparison was established by Congress. It is not intended to compare technology practices; rather, the costs to POTWs for treatment, regardless of the type of treatment, serve as a benchmark for measuring the reasonableness of costs to industry.

9. *Comment*—Several commenters feel that it is improper for EPA to include COD and oil and grease in the BCT analysis because these parameters had not been officially determined to be conventional pollutants at the time of the BCT proposal last August.

Response—EPA has withdrawn its proposal to designate COD as a conventional pollutant, and therefore it is not used in the BCT caculations. Oil and grease has, however, been designated as a conventional pollutant and will continue to be included in the BCT methodology.

10. *Comment*—One commenter states that the addition of the pounds of TSS and BOD might, in some cases, result in the "double counting" of pollutants removed. Other commenters object to the substitution of oil and grease or COD for BOD.

Response—In developing its methodology, EPA was aware of the difficulties of calculating total pounds of conventional pollutants removed. In many cases treatment equipment removes more than one pollutant, and, in some cases, a pollutant can be properly classed as more than one type of pollutant. To minimize this problem EPA has divided into two classes the pollutants which may tend to be double counted. These classes are solids (TSS), and oxygen demanding substances (BOD and oil and grease). Only one pollutant from each class will be included in the calculation. Thus, if both both BOD and oil and grease are removed by an industry, only the parameter with the greater amount of removal will be used. This methodology helps ensure that an industry is not attributed artificially low cost per pound of removal because of the double counting of these pollutants. Additionally, any problem of double counting between classes is greatly reduced by the fact that the same methodology is employed in both the POTW and industry cost per pound calculations. Any decrease in cost per pound attributable to such double counting will occur on both sides of the cost comparison.

11. *Comment*—Several respondents express concerns that the treatment costs they would bear at the BAT level would result in severe economic hardships. They request that EPA give greater attention in the BCT review to assessing the magnitude of possible economic impacts and that the Agency consider these impacts when making the BCT determinations.

Response—The purpose of this review was to determine whether existing regulations were "cost reasonable." EPA addressed the question of overall economic impacts during the initial development of BAT regulations. When these BAT limitations were established, the economic impacts were considered along with the other necessary factors. Regardless, no additional impacts will result from these BCT limitations, and for many industries some cost savings will occur.

12. *Comment*—Some commenters state that the methodology employed to calculate conventional pollutants removed should be based on the long-term performance of a treatment system rather than the maximum average effluent quality allowable over any 30 day period. They argue that use of the 30 day maximum allowable discharge in the BCT calculation inappropriately biases the costs of removal downward.

Response—EPA continues to believe that calculations of total pollutant removal should be based on the maximum levels allowed for the average

of any 30 day period. These 30 day limitations are contained in all effluent limitations guidelines and are the primary limitation relied on for enforcement of the Act. Long term average limitations have been written for only a very small number of subcategories, and data on such long term compliance is not, in most cases, collected.

EPA recognizes that variability in pollutant concentrations can affect the calculation of long term removal rates based on 30 day averages. Nonetheless, such variability exists with respect to POTWs as well as industrial effluents, and use of the same time period to calculate pollutant removals for industries and the POTWs should minimize the problem.

13. *Comment*—New Source Performance Standards (NSPS) should be subject to the BCT cost reasonableness assessment.

Response—EPA believes that BCT only applies to existing sources and that NSPS is not affected by BCT decisions. This is supported by both the language and legislative history of section 304(b)(4)(B). First, section 304(b)(4)(B) is, on its face, limited in application to existing sources; section 306 contains the requirements applicable to new sources. Further, Congress was quite explicit in stating that BCT was designed to replace BAT for industrial sources. There is no indication in the legislative history that Congress was dissatisfied with, or intended to modify, the NSPS applicable to new sources. Finally, new sources may, in permits subsequent to their first, be subject to BCT. New sources receive NSPS limitations only in their initial permit. Any subsequent, and more stringent, limitations on conventional pollutants will be subject to the BCT cost reasonableness analysis. Such limitations could not be imposed until after the expiration of the exemption period specified in section 306(d).

14. *Comment*—Several commenters note that a variety of factors, particularly climate, can affect the cost of compliance with effluent limitations.

Response—Although technology-based limitations are to be set on a national basis, EPA does consider whether variation with respect to factors such as climate affects the ability of industrial dischargers to achieve such limitations. Thus, the effects of climate and similar factors were included in the original assessment of BAT limitations.

15. *Comment*—Several respondents suggest that EPA consider lessening the stringency of pH requirements so as to reduce treatment costs and improve treatment efficiencies. These respondents note that pH ranges slightly below 6 or above 9 have no significant water quality impact and, moreover, in other BAT regulations, EPA allows for pH in excess of 9.

Response—The purpose of this rulemaking is to review existing BAT regulations that are more stringent than BPT. In all cases, the pH regulations for secondary industries are the same at both BPT and BAT. Therefore, there is no basis for changing the pH limitations as a result of the BCT review. The validity of the Agency's pH limitations were subject to challenge when the original BPT limitations were promulgated. The Agency has received petition for modification of certain pH limitations. That petition is currently under review.

16. *Comment*—The definition of contaminated nonprocess wastewater implicitly condones poor maintenance, careless operation and/or lack of preventive maintenance.

Response—The definition of nonprocess wastewater was developed as the result of a court suit which required EPA to define more precisely the different types of wastewater. The purpose of the BCT review is to evaluate the "cost reasonableness" of regulations as they exist, not to reassess any existing terminology or treatment. EPA will not at this time reconsider the definition.

17. *Comment*—Commenters raise a range of technical issues regarding EPA's use of the documents identified in the April 2, 1979 Federal Register (40 CFR 405 through 432). Such issues include the validity of the underlying data base, inconsistencies in presentation of data in two documents relied on by the Agency, the statistical techniques employed, and the validity of the results.

Response—EPA has evaluated each of these criticisms at length. Although detailed responses to each of these comments are not included here the Agency has carefully considered these comments and believes that it has employed a sound methodological approach and that the results are valid.

18. *Comment*—EPA annualized POTW capital costs at a 10 percent interest rate, yet EPA has previously used a 6⅝ percent rate for evaluating the costs of new POTWs. The former rate results in POTW costs being higher than is appropriate.

Response—EPA considers the 10 percent interest rate to be proper in determining total annual POTW costs. The 10 percent rate is cited in the Office of Management and Budget Circular A-94 for use in Agency programs not covered by the Water Resources Council principles and standards. Although the 6⅝ percent rate has been used by the Agency to achieve the goal of emphasizing capital intensive projects such as land treatment, this same notice states that "use of the 10-percent discount rate would help produce a more economically efficient distribution of construction grant funds." 40 Fed. Reg. 44022, 44032 (September 27, 1978).

19. *Comment*—Several commenters assert that the POTW data used by EPA was both inaccurate and overstated.

Response—Since proposal, EPA has improved its POTW cost data. After proposal of the BCT methodology EPA identified new data provided in two EPA documents, "Construction Costs for Municipal Wastewater Treatment Plants: 1973–1977" and "Analysis of Operations and Maintenance Costs for Municipal Wastewater Treatment Systems." Both of these documents represent empirical and bid data on POTW costs. EPA published a notice of its intention to use this data and public comment was solicited 44 FR 19214 (April 12, 1979). No commenter recommended more current or complete references than these.

20. *Comment*—Many commenters complain that EPA used old, out-dated information on industries in performing its BCT evaluation.

Response—In performing the review of secondary industry BAT guidelines, the Agency restricted its gathering of data to the development documents and the economic analyses documents which were published in support of the promulgation of the BAT guidelines for each industrial category. Congress, when it established BCT in the 1977 Clean Water Act Amendments, required the Agency to perform an immediate "90 day" review of BAT guidelines for secondary industries. Therefore, Congress seems to have intended that EPA rely on existing data and not undertake extensive and time consuming new analyses of industries.

Obviously, EPA has not managed to complete this review in the short time asked by Congress. This delay has resulted from the complexity of the issues involved and review of the extensive comments received. Although this rulemaking is late, any requirement to gather data on each of the many subcategories evaluated here would require several additional years of study, and this would be far more time consuming than the Agency believes Congress intended.

EPA has, however, reviewed all data submitted by industry. In several cases, where such data seriously question the accuracy of the data used in this review,

the Agency has delayed promulgation of BCT limitations to allow a more thorough investigation. Regardless, the Act provides that BCT will be subject to periodic reexamination and review.

21. *Comment*—Some commenters disagree with EPA's statement (made in the August 23, 1978 proposed rules) that Executive Order 12044, "Improving Government Regulations," does not apply to the proposed action because the proceeding was pending at the time the order was issued; some also say that regulatory analysis is required because this regulation will result in an annual effect on the economy of $100 million or more and because the regulations will result in a major increase in costs and/or prices; some further comment that an economic impact statement must be prepared in accordance with Executive Order 11821 and 11949, if the proceeding was pending when Executive Order 12044 was issued.

Response—EPA continues to assert that Executive Order 12044 does not apply to this action because the BCT rulemaking proceedings were pending on March 23, 1978, the date Executive Order 12044 was issued.

However, even if the Executive Order did apply, the Agency sees no necessity for performing a regulatory analysis in this case. EPA's criteria for conducting regulatory analysis states that regulatory analysis will be performed when the impacts of the regulations cause additional annual costs of compliance in excess of $100 million or production cost increases result in price increases of 5% or more. 44 Fed. Reg. 30988 (May 29, 1979). However, this action decreases costs of compliance from those required by existing regulations. BCT requirements are in no case more stringent than original BAT regulations and, for most subcategories, existing regulations are being withdrawn. The Agency also does not believe that an economic impact statement must be prepared in accordance with Executive Orders 11821 and 11949. The economic impacts of the regulations were examined when the original BAT standards were established, and no greater impacts will result from this action. The sole purpose is to determine if the BAT standards meet the additional BCT test.

Appendix E—Public Comments

The following parties responded with comments regarding the August 23, 1978 BCT proposed rules: Alto Cooperative Creamery; American Crystal Sugar Company; American Farm Bureau Federation; American Iron and Steel Institute; American Paper Institute; American Petroleum Institute; Anheuser-Busch, Inc.; Arnold and Porter, Inc.; Atlantic Corporation; Boise Cascade; California and Hawaiian Sugar Company; Canners League of California; CF Industries; Cleary, Gottlieb, Steen and Hamilton; Clinton Corn Processing Company; Collier, Shannon, Rill, Edwards and Scott; Consolidated Badger Cooperative; Council on Wage and Price Stability; Corn Refiners Association, Inc.; CPC International; Dairy Industry Committee; Dean Foods Company; Dow Chemical; East Bay Municipal Utility District; Ronald J. Eberhard; Eli Lilly and Company; The Ferroalloys Association; Ford Motor Company; Frito-Lay, Inc.; Galloway Company; General Electric Company; H. J. Heinz Company; Holly Sugar Corporation; Tom Holmes; H. P. Hood, Inc.; Kaiser Aluminum and Chemical Corporation; Kraft, Inc.; Lake to Lake Dairy Cooperative; Land O'Lakes, Inc.; Mary Lewis; Lone Star Industries, Inc.; Long Island Duck Growers Association; Manufacturing Chemists Association; Mead Corporation; Michigan Sugar Company; Mobil Oil Corporation; Keith Montombe; National Fisheries Institute, Inc.; National Food Processors Association; National Milk Producers Federation; National Renderers Association, Inc.; National Steel Corporation; New York State Department of Environmental Conservation; Offshore Operators Committee; Olin Chemicals Group; Pacific Seafood Processors Association; E. B. Pugsley; Reynolds Aluminum; Scott Paper Company; Shellfish Institute of North America; Shell Oil Company; Snokist Growers; State of Florida; State of Oregon; State of Washington; State of Wisconsin; Tenneco, Inc.; Texaco, Inc.; Texas Department of Water Resources; U and I, Inc.; Union Carbide Corporation; U.S. Brewer's Association, Inc.; U.S. Cane Sugar Refiners Association; U.S. Department of Interior; Warners Duck Farm; Wells Engineers, Inc.; Donald Williams; Wisconsin Dairies; Wisconsin Dairy Products Association, Inc.

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