

the final decision will be published in the FEDERAL REGISTER.

7. One objection requested clarification of § 11.7(b)(1) (21 CFR 11.7(b)(1)), stating that it was not clear "how it is possible to determine a most probable number of coliforms by the multiple-tube fermentation technique by a single 5 ml. portion." No hearing was requested on this objection.

Confusion on this point has developed because an error was made in paragraph 16 of the preamble to the final order (38 FR 32558), in response to a comment. The Commissioner advises that the response in paragraph 16 should read as follows: The coliform criteria in the proposal and in § 11.7(b)(1) of the final regulation are essentially the same as those of the drinking water standard. These criteria are based upon the laboratory testing of a representative sample of water from a lot. A sample is composed of 10 subsamples. For the multiple tube fermentation method, from each subsample of water, five portions of equal volume are removed for analysis. The five portions constitute one analytical unit. Not more than one analytical unit may have a MPN (most probable number) of 2.2 or more coliform organisms/100 ml., and none of the analytical units may have an MPN of 9.2 or more coliform organisms/100 ml. Thus this coliform requirement is based upon the results from each analytical unit and not upon the average value of the 10 analytical units.

The Commissioner concludes that the only request for a hearing involved an issue that is irrelevant to establishing a quality standard for bottled water; consequently, there is no basis for granting a hearing; and that the other submitted objections do not justify a change in the regulation.

Therefore, pursuant to the Federal Food, Drug, and Cosmetic Act (secs. 401, 403(h), 701, 52 Stat. 1046-1047, 1055-1056, as amended, 70 Stat. 919, 72 Stat. 948 (21 U.S.C. 341, 343(h), 371)) and under authority delegated to the Commissioner (21 CFR 2.120), notice is given that (1) the regulation amending § 11.7 as published in the FEDERAL REGISTER of November 26, 1973 (38 FR 32558) is confirmed and the effective date is amended to be June 19, 1975, and (2) effective May 20, 1975, § 11.2 is amended by changing the words "a portion" to read "the portion(s)".

Dated: May 14, 1975.

SAM D. FINE,  
Associate Commissioner  
for Compliance.

[FR Doc.75-13170 Filed 5-19-75;8:45 am]

#### PART 121—FOOD ADDITIVES

##### Subpart F—Food Additives Resulting From Contact With Containers or Equipment and Food Additives Otherwise Affecting Food

###### ADHESIVES

The Commissioner of Food and Drugs is amending the food additive regulations

in § 121.2520 *Adhesives* (21 CFR 121.2520) to provide for safe use of a preservative in food-packaging materials, effective May 20, 1975.

The Commissioner, having evaluated the data in a petition (FAP 4B2979) filed by Drew Chemical Corp., subsidiary of United States Filter Corp., P.O. Box 248, Parsippany, NJ 07054, and other relevant material, concludes that the food additive regulations should be amended, as set forth below, to provide for safe use of tributyltin chloride complex of ethylene oxide condensate of dehydroabietylamine as a preservative in adhesives for food-packaging materials. The preservative effect is to inhibit microbial growth.

Therefore, pursuant to provisions of the Federal Food, Drug, and Cosmetic Act (sec. 409(c)(1), 72 Stat. 1786 (21 U.S.C. 348(c)(1))) and under authority delegated to the Commissioner (21 CFR 2.120), § 121.2520(c)(5) is amended by alphabetically inserting an item in the list of substances, to read as follows:

#### § 121.2520 Adhesives.

(c) * * *	* * *
(5) * * *	* * *
COMPONENTS OF ADHESIVES	
<i>Substances</i>	<i>Limitations</i>
* * *	* * *
Tributyltin chloride complex of ethylene oxide condensate of dehydroabietylamine.	For use as preservative only.
* * *	* * *

Any person who will be adversely affected by the foregoing order may at any time on or before June 19, 1975 file with the Hearing Clerk, Food and Drug Administration, Rm. 4-65, 5600 Fishers Lane, Rockville, MD 20852, written objections thereto. Objections shall show wherein the person filing will be adversely affected by the order, specify with particularity the provisions of the order deemed objectionable, and state the grounds for the objections. If a hearing is requested, the objections shall state the issues for the hearing, shall be supported by grounds factually and legally sufficient to justify the relief sought, and shall include a detailed description and analysis of the factual information intended to be presented in support of the objections in the event that a hearing is held. Six copies of all documents shall be filed. Received objections may be seen in the above office during working hours, Monday through Friday.

*Effective date.* This order shall become effective May 20, 1975.

(Sec. 409(c)(1), 72 Stat. 1786 (21 U.S.C. 348(c)(1)).)

Dated: May 13, 1975.

SAM D. FINE,  
Associate Commissioner  
for Compliance.

[FR Doc.75-13171 Filed 5-19-75;8:45 am]

#### Title 23—Highways

##### CHAPTER I—FEDERAL HIGHWAY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

###### SUBCHAPTER H—RIGHT-OF-WAY AND ENVIRONMENT

##### PART 750—HIGHWAY BEAUTIFICATION

###### Outdoor Advertising

Subpart B, Part 750, Subchapter H, Chapter I, Title 23, Code of Federal Regulations, is amended to reflect changes made to section 131, Title 23, United States Code, by the Federal-Aid Highway Amendments of 1974, Pub. L. 93-643, section 109, January 4, 1975, 88 Stat. 2284 (hereafter referred to as the 1974 Amendments). These changes are:

(1) The 1974 Amendments amended 23 U.S.C. 131(c)(1) by striking the word "other" in referring to directional and official signs. The change made here is only a "housekeeping" measure, designed to keep the language of the National Standards in conformity with the language of 23 U.S.C. 131. No additional outdoor advertising devices will be permitted as a result of this change, nor should existing State standards or procedures governing directional and official signs be altered or broadened. It is the view of the Federal Highway Administration that the striking of the word "other" made no substantial changes in the law. With the foregoing caveat in mind, Subpart B must be amended to reflect this change as follows:

(a) The title of Subpart B is amended by striking the word "Other" and will read: "Subpart B—National Standards for Directional and Official Signs."

§§ 750.151, 750.153, 750.155 [Amended]

(b) Sections 750.151(a)(2), 750.153(m), and 750.155, 23 CFR, is amended by striking the word "Other" between the words "Directional and" and the words "Official Signs" in the first sentence.

(2) In addition a change similar to those referred to in paragraph (1) above, § 750.152, 23 CFR, must be amended to reflect an expansion in the area subject to control. Thus, existing § 750.152 is revised to read as follows:

#### § 750.152 Application.

The following standards apply to directional and official signs and notices located within six hundred and sixty (660) feet of the right-of-way of the Interstate and Federal-aid primary systems and to those located beyond six hundred and sixty (660) feet of the right-of-way of such systems, outside of urban areas, visible from the main traveled way of such systems and erected with the purpose of their message being read from such main traveled way. These standards do not apply to directional and official signs erected on the highway right-of-way.

(3) A new definition is added to § 750.153, 23 CFR, as follows:

§ 750.153 Definitions.

(t) Urban area means an urbanized area or, in the case of an urbanized area encompassing more than one State, that part of the urbanized areas in each such State, or an urban place as designated by the Bureau of the Census having a population of five thousand or more and not within any urbanized area, within boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary. Such boundaries shall, as a minimum, encompass the entire urban place designated by the Bureau of the Census.

These changes become effective on the date of issuance.

Issued on: May 12, 1975.

NORBERT T. TIEMANN,  
Federal Highway Administrator.

[FR Doc.75-13152 Filed 5-19-75;9:45 am]

Title 24—Housing and Urban Development  
CHAPTER II—OFFICE OF ASSISTANT SECRETARY FOR HOUSING PRODUCTION AND MORTGAGE CREDIT-FEDERAL HOUSING COMMISSIONER (FEDERAL HOUSING ADMINISTRATION), DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. R-75-333]

PART 215—RENT SUPPLEMENT PAYMENTS

Asset Limits for Tenant Eligibility; Interim Rule

The Department is amending Part 215 by changing the asset limits with respect to tenant eligibility for rent supplement benefits. In the case of the non-elderly, the new asset limit is equal to the dollar amount of the applicable income limit for the particular locality and in the case of the elderly, the new limit is three times the dollar amount of the applicable income limit.

This amendment is necessary because the old limits—\$2,000 for the non-elderly and \$5,000 for the elderly—have not been revised since the inception of the rent supplement program in 1966, notwithstanding the vast economic changes which have occurred since that time. In light of the pressing need for revised asset limits in some localities, the publication of this regulation for comment in advance of the effective date is deemed contrary to the public interest; instead, this amendment is being published as an interim rule effective upon publication.

However, the Department invites interested persons to submit data, views, and suggestions with respect to this rule and is providing 60 days in lieu of the usual 30 days in which to file comments. All relevant material received on or before July 21, 1975, will be considered by the Department before a final rule is adopted. Filings should refer to the above Docket number and should be filed with the Rules Docket Clerk, Office of General Counsel, Department of Housing and Urban Development, Room 10245, 451

Seventh Street, SW, Washington, D.C. 20410. Copies of comments submitted will be available during business hours at the above address for examination by interested persons.

The Department has determined that an Environmental Impact Statement is not required with respect to this rule. The Finding of Inapplicability is available for inspection at the above address.

Section 215.20 of Title 24 is amended by revising paragraphs (a) (1), (2) and (3) to read as follows:

§ 215.20 Qualified tenant.

(a) \* \* \*

(1) Have an annual income below the maximum amount established by the Secretary, which amount shall not be higher than can be established in the area where the property is located for occupancy in a low-rent public housing project assisted under the United States Housing Act of 1937. The limits are determined by the Secretary on the basis of recommended limits and supporting data and information received from the Public Housing Agency or the HUD field office serving the locality. The limits are available for inspection in the HUD field office. In computing a tenant's income for the purpose of this section, \$300 shall be deducted for each minor person who is a member of the immediate family of the tenant and residing with the tenant and any earnings of such minor shall not be included in computing the tenant's income.

(2) In a case involving an elderly individual or a family whose head or spouse is elderly, have assets not exceeding three times the dollar amount of the applicable income limit for the locality as determined in accordance with the second sentence in paragraph (a) (1) of this section.

(3) In a case involving other than the elderly, have assets not exceeding the dollar amount of the applicable income limit for the locality as determined in accordance with the second sentence in paragraph (a) (1) of this section.

(Sec. 101(g), 79 Stat. 354 (12 U.S.C. 1701s))

Effective date. This amendment is effective May 20, 1975.

SANFORD A. WITKOWSKI,  
Acting Assistant Secretary for  
Housing Production and  
Mortgage Credit—Federal  
Housing Commissioner.

[FR Doc.75-13262 Filed 5-19-75;8:45 am]

Title 29—Labor

CHAPTER XVII—OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PART 1908—CONTRACTS FOR ON-SITE CONSULTATION PROGRAMS

Notice of Final Rulemaking

1. Background. On January 15, 1975, a notice of proposed rulemaking was published in the FEDERAL REGISTER (40 FR 2703) concerning regulations under sections 7(c)(1) and 21(c) of the Occupational Safety and Health Act of 1970 (29

U.S.C. 651 et seq.) (hereinafter called the Act) which set out policies and procedures through which on-site consultation services may be furnished to employers by State personnel, with partial Federal funding.

After consideration of the relevant material which has been submitted by interested persons, the proposal is hereby adopted with various changes.

2. Public comments. Numerous public comments were received pursuant to the proposal. Statements of support were received from the Associated Industries of Massachusetts, the Building Trades Employers Association of the City of New York, Richard J. Kos, Gooch Packing Company, Inc., the Painting and Decorating Contractors of America, the National Environmental System Contractors Association, the National Oil Jobbers Council, the Southern Industrial Distributors Association, Senator George McGovern, B. H. Electronics, the Concrete Reinforcing Steel Institute, the National Wholesale Druggists Association, the Nebraska Association of Commerce and Industry and others.

Many important issues were raised in other comments. These comments voiced objection to the use of a consultant's report in a subsequent compliance inspection, the lack of mandatory employee participation, and the limitation to States without approved plans. Questions were also raised concerning qualifications for consultants, number of consultants, action upon discovery of imminent danger, monitoring, and the system of priorities. These comments are discussed below.

3. Discussion of changes. Several substantive changes were made in the regulations as follows:

(a) In consideration of comments received from the Massachusetts Department of Labor and Industries, the New York State Department of Labor, the National Association of Wholesale Distributors, and others, the limitation on the number of consultants each State would be permitted has been revised. Under the final regulation, the number of consultants in each State will be determined by the State's individual needs as determined by the employer demand for consultative services and the recommendation of the Occupational Safety and Health Administration Assistant Regional Director.

(b) The Edison Electric Institute, the U.S. Small Business Administration, and the National Small Business Administration, all recommended that, in addition to using the size of an employer's establishment to determine priority for consultation visits, consideration should be given to the hazardous nature of the business. Therefore, in order to increase the protection to workers whose exposure would be greatest, §§ 1908.1 and 1908.5(c)(2) have been changed to provide for such consideration. Thus, the hazardous nature of an employer's activities has been included as an additional consideration in establishing priorities for consultation.

(c) The Health Research Group raised the objection that the proposed regulation provided that the consultant be required to seek elimination of hazards only in imminent danger situations and not of serious violations. We believe that the vast majority of conscientious employers seeking consultant's advice under these regulations, upon learning that conditions at their workplaces could reasonably be expected to cause death or serious physical harm to employees, will take the necessary action to eliminate such conditions. We have therefore modified the regulation to provide that the consultant be required to seek the elimination of any observed conditions that present hazards which could reasonably be expected to cause death or serious physical harm to employees, without regard to the characterization of the hazard in terms of imminent danger or serious violation, which is relevant primarily for determining the action to be taken in an enforcement context. This provision will afford practical guidance to the consultant as to whether the hazard is of sufficient seriousness to require him to seek its immediate elimination. If such elimination is not achieved, employees shall be informed and the matter will be referred to OSHA for a determination as to the appropriate enforcement procedure to be undertaken. Section 1908.5(c) (7) and other sections have been changed accordingly.

Under the final regulation, where the consultant observes conditions presenting hazards that could reasonably be expected to cause death or serious physical harm to employees, he shall immediately request the employer to eliminate the hazard at once, or, if this is not possible, to prohibit the presence of any employees in the danger area. A follow-up visit shall be made by the consultant where elimination of the hazard has not been effected immediately, unless the consultant is otherwise satisfied, on the basis of documentary or other evidence, that such elimination has taken place. If the employer fails to take the necessary action to eliminate the hazard, the consultant shall immediately inform the affected employees and advise the OSHA Assistant Regional Director, who will take appropriate enforcement action.

(d) Comments were received from Congressman William A. Steiger, the Chamber of Commerce of the United States and others regarding notice to employers of the imminent danger requirements under the proposal. Changes have been made in § 1908.4(c) (6) (re-numbered § 1908.5(c) (6)) to require that consultants explain to employers before the walk through what actions they are required to take upon the discovery of conditions that present hazards which could reasonably be expected to cause death or serious physical harm.

In addition, § 1908.5(c) (6) (i) of the final regulation requires that the consultant advise each employer that, in the event of a subsequent compliance inspection, the compliance officer would

not be legally bound by the advice of the consultant concerning specific hazards or the failure of the consultant to point out a specific hazard. This section also requires that the written report inform the employer of the above requirements and restrictions.

(e) Numerous comments were received concerning § 1908.4(c) (12) which provides for a written consultant's report and the use of the report in the event of a future compliance inspection. The Edison Electric Institute, National Pest Control Association, Tenneco, National Association of Manufacturers, New York State Department of Labor, the National Roofing Contractors Association and others expressed opinions that this section would seriously jeopardize the on-site consultation program since it could result in more severe penalties being imposed upon employers who made use of the consultation program. The final regulation has, therefore, been changed to afford the employer the option of furnishing the report to the compliance officer and provides that the failure to furnish the report would not create a presumption of bad faith. However, we have decided to retain the requirement for a written report since it would more clearly inform the employers of the consultant's findings, and will assist in the monitoring of the effectiveness of the consultation program.

(f) The Health Research Group, International Brotherhood of Teamsters, American Federation of State, County and Municipal Employees, the United Paperworkers International Union and others objected to § 1908.4(c) (9) of the proposal which provided that employees would not participate in the consultation, except upon the specific request of the employer.

The consultation program is designed to advise employers since they, and not employees, are the persons subject to possible legal sanctions under the Act. Employers specifically request consultative services, and are immediately benefited by the identification of potential violations at their worksites. Even though employees also ultimately benefit from the consultant's advice, especially with respect to the elimination of hazards which could reasonably be expected to cause death or serious physical harm, the consultation program is primarily to assist the employer who is the person subject to the sanctions of the Act. Therefore, the final decision on employee participation must ultimately rest with the employer. However, since the employer may wish to build upon existing safety expertise and experience by involving joint labor management committees or employee groups in the consultation, § 1908.5(c) (6) (iii), provides that the consultant shall ask the employer prior to the walk through, whether such participation is desired. Thus, the final provision advises the employer that such participation is permitted, and even encouraged, whereas under the proposed regulation, the em-

ployer could easily assume that employee participation was not permitted.

4. *Discussion of provisions which were not changed and clarifications.* (a) Comments on consultants' qualifications were received from the Association of General Contractors of St. Louis, the National Association of Manufacturers, the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry, the New Mexico Environmental Improvement Agency, the American Society of Safety Engineers and others. Concern was expressed that consultants would not have adequate qualifications for the performance of their duties. The proposal and the final regulations define the qualification requirements in general terms and indicate that the Assistant Secretary will set out requirements in addition to those provided by the State. These requirements have been set forth in Occupational Safety and Health Administration Program Directive No. 75-1. These requirements include four years of experience in safety and health or a Bachelor of Science degree. The applicants will also be interviewed by the Assistant Regional Director of the Occupational Safety and Health Administration (OSHA-ARD) and must be qualified in his judgment to perform consultation services. We believe that these requirements are sufficient to insure that State consultants will be qualified to carry out their responsibilities under this program.

(b) Several comments, including those by the Central Illinois Light Company, National Association of Home Builders, E. L. LeBaron Foundry Company, the National Maritime Safety Association and others, suggested that this program should be extended to States with approved 18(b) plans. However, this extension would be unnecessary owing to the fact that States with approved plans are encouraged to and do provide for on-site consultation services under their approved plans. Guidelines for those State services are set out in Program Directive #72-27 and #74-13, and fifty percent Federal funding is provided for both programs. Thus, any State, whether the State has an approved plan or not, has an opportunity to participate in an on-site consultation program. Extension of this program to States with approved plans would therefore be redundant.

(c) The Health Research Group submitted extensive comments which, in part, challenged the authority for the entire program proposed under the regulation. This challenge was based upon the Health Research Group's assertion that the on-site consultation program was an illegal delegation of the Secretary of Labor's authority under the Act. It contends that, since the Secretary is delegating the Act's right of entry to State personnel, consultants will be "authorized representatives" of the Secretary and would therefore be

required to comply with other mandatory provisions of the Act, including citations for observed violations and employee participation.

The Assistant Secretary, however, is not in fact delegating any enforcement authority to a State. Entry by a consultant does not stem from the right of entry under the Act, but rather is by employer request and permission.

Further, under this program, the State is not given authority to do anything that it may not already do. Any State, should it so desire, could engage in a program whereunder State employees may advise employers in the State concerning provisions of this or any Act. This regulation merely provides Federal requirements for eligibility for Federal funding through reimbursement of expenses under section 7(c)(1) of the Act. This is consistent with the intent of the Congress, which was to provide consultation services primarily to small employers who could not ordinarily afford to hire private consultants.

(d) Several comments expressed confusion over the language of § 1908.4(c)(10) which required the separation of consultation and enforcement staffs. This provision was intended to deal with the situation in States which have 7(c)(1) enforcement agreements in addition to 7(c)(1) consultation agreements, and the paragraph (now § 1908.5(c)(10)) has been amended to so indicate.

(e) It became apparent from reviewing the public comments that the overall organization of the regulation was subject to some confusion. In the proposal, provisions which were actually directed to Federal activities were included within the section regarding consent of agreements. These provisions have therefore been deleted and placed in a new § 1908.4, with appropriate renumbering of the original sections.

(f) Although the term "consultation" is used throughout the regulation, the consultative service to be provided by State personnel is not necessarily the same type of service provided by insurance companies or private consulting firms. The purpose of the consultative service to be provided under the regulation is to advise employers on how to comply with OSHA standards, and rules and regulations.

(g) Because of the importance of the recognition of potential health hazards, § 1908.5(c)(6)(viii) has been revised to more clearly define the consultant's responsibilities. Under the final regulation, the consultant is required to ensure to the best of his ability that all possible health hazards are identified.

This program has already been subject to intense evaluation by the public and extensive comments have been received. In addition, the proposed regulations were discussed at a meeting of the National Advisory Committee on Occupational Safety and Health. In view of the fact that services are being provided for the assistance of the public, it is desirable that the program be implemented

as soon as possible. Therefore, good cause is found and this regulation shall be effective immediately.

In accordance with the above, Chapter XVII of Title 29, Code of Federal Regulations is hereby amended by adding a new Part 1908 as follows:

Sec.	
1908.1	Purpose and scope.
1908.2	Definitions.
1908.3	Eligibility.
1908.4	General provisions.
1908.5	Making of agreements.
1908.6	Actions upon requests for agreements.
1908.7	Termination of agreements.
1908.8	Exclusion.

AUTHORITY: Secs. 7(c)(1), 21(c), 84 Stat. 1598, 1612; (29 U.S.C. 656(c)(1), 670(c))

#### § 1908.1 Purpose and scope.

This part contains procedures for the negotiation and award of contracts under section 7(c)(1) of the Occupational Safety and Health Act of 1970 (hereinafter called the Act (29 U.S.C. 651, et seq.) to States for the purpose of using State personnel to conduct on-site consultations under authority of sections 7(c)(1) and 21(c) of the Act, and the requirements for the content of such agreements. Under this part, States which do not have a plan approved under section 18(c) of the Act are eligible to participate in the program with 50 percent funding by the Federal government. The number of consultants who will provide consultative services under the terms of the 7(c)(1) contracts will be determined on the basis of the number of employer requests for consultation in each State. These consultants will provide on-site consultative services upon employer request only, and such services would be limited to the scope of that request; the smaller the business, the less specific the request will have to be. However, in carrying out the consultative visit as requested by the employer, the consultant will bring to the employer's attention any hazards observed. In providing these services, priority will be given to small businesses, to be determined on the basis of the number of employees of the employer, with further consideration given to the hazardous nature of the workplace. The consultant will provide information on how the employer may comply with the Act by pointing out specific hazards in the workplace and suggesting corrective measures. The consultant's visit will not result in an enforcement inspection except in cases where hazards which could reasonably be expected to cause death or serious physical harm are discovered and the employer fails to cooperate in their elimination. However, the consultant's report may be requested by the Compliance Safety and Health Officer and used to determine the employer's good faith or lack thereof in the event of a subsequent inspection. The employer, however, may refuse to provide the report, and such refusal shall not be regarded as bad faith. Any agreement made hereunder shall incorporate the requirements of this part.

#### § 1908.2 Definitions.

As used in this part and in consultation agreements entered into pursuant to this part:

"Act" means the Williams-Steiger Occupational Safety and Health Act of 1970.

"ARD" means the Assistant Regional Director for Occupational Safety and Health of the Region in which the State concerned is located.

"Assistant Secretary" means the Assistant Secretary of Labor for Occupational Safety and Health.

"CHSO" means a compliance safety and health officer.

"OSHA" means the Occupational Safety and Health Administration.

"State" includes a State of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Trust Territory of the Pacific Islands.

#### § 1908.3 Eligibility.

Each State without an occupational safety and health plan approved under section 18(c) of the Act is eligible to enter into an on-site consultation agreement with the Assistant Secretary under sections 7(c)(1) and 21(c) of the Act.

#### § 1908.4 General provisions.

(a) *Qualifications of consultants.* State consultants serving under 7(c)(1) agreements must have adequate education and experience in occupational safety and health to satisfy the ARD, after interview, that they have the ability to perform satisfactorily pursuant to the agreement. All consultants under the agreement shall be qualified under State requirements for employment in occupational safety and health, and shall meet additional requirements as may be established by the Assistant Secretary. All consultants shall be selected in accordance with the provisions of Executive Order 11246 of September 24, 1965, as amended.

(b) *Training.* All consultants under the agreement shall receive consultative training which includes successful completion of the training course requirements for OSHA CSOs. The consultants shall also receive such additional training as may be deemed necessary by the Assistant Secretary in order to efficiently perform their duties as consultants. Consultants shall receive appropriate State credentials upon successful completion of their training. Transportation and per diem for purposes of training shall be at Federal expense.

(c) *Number of consultants.* The number of consultants who will provide consultative services under the terms of a 7(c)(1) agreement will be determined on the basis of the number of employer requests for consultation in each State, and the recommendation of the ARD.

(d) *Effect upon enforcement activities.* (1) A consultative visit shall not generate any enforcement activity by OSHA, except as provided in § 1908.5(c)(7). The file of the consultant's visit shall not be forwarded to OSHA for use

in compliance activities, but may be used for the purpose of monitoring the effectiveness of the program by OSHA in accordance with § 1908.4(d)(5).

(2) Federal inspection and enforcement activity shall be conducted independently of any consultation activity by a State. However, a consultative visit in progress will delay an initial compliance inspection until after the visit is completed. OSHA accident investigations, responses to complaints, imminent danger investigations, or follow-up inspections shall not be delayed.

(3) In the event of a subsequent OSHA inspection of an employer who has had a consultation visit, the CSHO may request a copy of the consultant's written report to the employer. The report may be used to determine the employer's good faith or lack thereof for purposes of proposing penalties. The employer is not required, however, to furnish the report, and his refusal to do so shall not give rise to any inference of bad faith.

(4) In the event of a subsequent OSHA inspection, the opinions, suggestions, advice and interpretations of a consultant shall not be binding on a CSHO and will not affect the regular conduct of the inspection, or preclude the finding of alleged violations or the proposing of penalties. Further, the CSHO shall not be bound by the consultant's failure to identify specific hazards. However, the fact that an employer took advantage of consultative services and was in compliance with a consultant's advice shall be a major factor in the determination of an employer's good faith, but shall not operate as a defense to any enforcement action.

(5) A State's performance under the agreement shall be monitored by the ARD and changes may be directed pursuant to such evaluation and OSHA's consultation policy. In such monitoring, special attention shall be given to determine whether those hazards which could reasonably be expected to cause death or serious physical harm disclosed during a consultation visit remain unabated. This monitoring shall not include the utilization of OSHA enforcement personnel.

#### § 1908.5 Making of agreements.

(a) *Who may make agreements.* The Assistant Secretary may make an agreement under section 7(c)(1) of the Act with any State agency designated for that purpose by the Governor.

(b) *Commencement of negotiations.* Negotiations for making an agreement may be commenced by the Governor of the State, or a State agency which is designated for this purpose under paragraph (a) of this section in such manner as the Assistant Secretary may prescribe. Instructions may be obtained through the ARD. The contents of the agreement shall be those described in paragraph (c) of this section.

(c) *Contents of the agreement.* Any agreement, including any modification thereof, shall be in writing and shall contain but not be limited to the following provisions:

(1) A statement that the State agency is authorized by the Governor to perform the obligations under the agreement and is authorized to receive and expend Federal funds and matching State funds.

(2) A statement of purpose that the State agency shall provide consultative services to employers, with priority to small business, to be determined by the number of employees of the employer, with further consideration given to the hazardous nature of the employer's activities. Consultants shall advise employers of their obligations and responsibilities under the Act and its implementing regulations.

(3) A statement that the State will adequately publicize the availability of consultative services for employers in the State, and inform employers of the procedures to be followed in requesting such services.

(4) A statement that consultants under the agreement shall be qualified under State requirements for employment in the occupational safety and health field, and shall meet the requirements as set out in § 1908.4(a) and any additional requirements as may be established by the Assistant Secretary.

(5) A statement that consultants under the agreement shall receive consultative training as set out in § 1908.4(b) and as may be deemed necessary by the Assistant Secretary in order to efficiently perform their duties as consultants.

(6) Provisions that consultative visits will be made only at the request of the employer, and that the consultation shall consist of an opening conference (introduction), a walk through the work place, and a closing conference with a subsequent written report (summary). During the visit the consultant shall:

(i) Advise the employer that, in the event of a subsequent OSHA inspection, the compliance officer will not be legally bound by the advice given by the consultant or the failure of the consultant to point out a specific hazard. The consultant shall also advise the employer that he may, but is not required to provide a copy of the written report to the inspecting compliance officer and if he chooses to make the report available to the CSHO it may be used to determine the employer's good faith or lack thereof. This information shall also be contained in the written report under paragraph (c)(6)(x) of this section.

(ii) Advise the employer as to the actions and the consultant's responsibility described in paragraph (c)(7) of this section.

(iii) Ask the employer whether, and under what circumstances, the consultant may confer with employees in the course of his visit.

(iv) Explain to the employer which OSHA standards and rules and regulations apply to his workplace;

(v) Explain the technical language and application of the standards when necessary;

(vi) Advise if and how the employer is not in compliance with OSHA standards and rules and regulations;

(vii) Where feasible and within his technical competence, suggest means by which identified hazards may be abated;

(viii) Ask the employer to identify all potential health hazards present in the workplace, and ensure, to the best of his ability, that all other possible health hazards have been identified to the employer. For those hazards on which additional information, or laboratory analyses is needed, the employer will be advised of available sources of information or further assistance to confirm the existence of such hazards;

(ix) Advise the employer of additional sources of assistance;

(x) Advise the employer that the visit to his workplace will be followed by a written report. The report shall contain the information in paragraph (c)(6)(i) of this section, and shall identify the specific hazards discovered and describe their nature, including a reference to the specific applicable OSHA standard, and where feasible, a suggested means of abatement.

(7) A statement that consultants, upon discovery of hazards which could reasonably be expected to cause death or serious physical harm, shall immediately request the employer to eliminate the hazards, or if this is not possible to prohibit the presence of any employee in the danger area. A follow-up visit shall be made by the consultant where elimination of the hazard has not been effected immediately unless the consultant is otherwise satisfied, on the basis of documentary or other evidence, that such elimination has taken place. If the employer fails to take the necessary action in eliminating those hazards, the consultant shall immediately inform the affected employees and advise the ARD of the situation.

(8) A provision for the protection of the confidentiality of trade secrets disclosed during the consultant's visit.

(9) A statement that employees or their representatives, or members of a joint labor-management safety committee, may participate in the consultation visit, with the express permission of the employer.

(10) A statement that the State will maintain a clear separation between paragraph 7(c)(1) of this section enforcement and paragraph 7(c)(1) of this section consultation staffs.

(11) A detailed budget of the State's proposed expenditures under this agreement.

(d) *Location of sample agreement.* A copy of a sample agreement under these provisions is available for inspection at the Office of Regional Programs, Room N-3112, 200 Constitution Ave., NW, Washington, D.C. 20210, and all Regional Offices of the Occupational Safety and Health Administration of the U.S. Department of Labor.

#### § 1908.6 Action upon requests for agreements.

The State shall be notified within a reasonable time of any decision concerning its request for an agreement. If a request is denied, the State shall be

informed in writing of the reasons therefor. If an agreement is negotiated, the initial funding shall specify the period for which that agreement is contemplated. Additional funds may be added at a later time provided the activity is satisfactorily carried out and appropriations are available. The State may also be required to amend the agreement for continued support.

§ 1908.7 Termination of agreement.

(a) *Termination by the parties.* Either party may terminate this agreement upon 15 days written notice to the other party.

(b) *Termination upon plan approval.* In no event shall an agreement under this part continue in effect beyond 30 days after a State's occupational safety and health plan has been approved under section 18(c) of the Act.

§ 1908.8 Exclusion.

This agreement does not restrict in any manner the authority and responsibility of the Assistant Secretary under sections 8, 9, 10, 13, and 17 of the Act.

Signed at Washington, D.C. this 15th day of May 1975.

JOHN STENDER,  
Assistant Secretary of Labor.

[FR Doc. 75-13246 Filed 5-19-75; 8:45 am]

Title 40—Protection of the Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER N—EFFLUENT GUIDELINES AND STANDARDS

[FRL 375-2]

PART 419—PETROLEUM REFINING POINT SOURCE CATEGORY

Effluent Limitations, Guidelines and Pretreatment Standards; Amendments

On May 9, 1974, effluent limitations, guidelines, and standards of performance and pretreatment standards for new sources were published applicable to the topping subcategory, cracking subcategory, petrochemical subcategory, lube subcategory, and integrated subcategory of the petroleum refining category of point sources. Public participation procedures for those regulations were described in the preamble thereto, and are further discussed below.

Petitions for review of the regulations were filed by the American Petroleum Institute and others on August 26, 1974.

After the regulations were published, comments were received criticizing certain aspects of the regulations. As a result of these comments, the Agency concluded that the ranges used in preparing the size and process factors were too broad. Accordingly, a notice was published in the FEDERAL REGISTER (Thursday, October 17, 1974, 39 FR 37069) of the Agency's intention to reduce the range sizes.

In response to the October 17 notice, a variety of detailed comments were received concerning all aspects of the regulations. The commenters sought major modifications of the regulations as promulgated.

The Environmental Protection Agency has carefully evaluated all comments which were received. The data base and methodology have been reexamined, and, in some cases, new data have been gathered and reviewed.

Most commenters favored the changes outlined in the modifications proposed on October 17th. However, many more substantial changes were sought by commenters. The Agency has concluded that promulgation of the proposed modifications is appropriate. However, the record does not warrant, except in two instances, the additional modifications sought. The bases for the Agency's conclusions are set forth in detail below, with responses to all major comments received.

HISTORY OF THE REGULATIONS DEVELOPMENT

*Background.* With the enactment of the 1972 Amendments to the Federal Water Pollution Control Act (FWPCA), the Effluent Guidelines Division of the Environmental Protection Agency (EPA) assumed responsibility for the preparation of effluent guidelines and limitations under sections 301 and 304 of the Act.

The Petroleum Refining Industry in the United States and its territories is made up of 253 refineries. These refineries produce a wide range of petroleum and petrochemical products and intermediates from crude oil and natural gas liquids.

The size and type of hydrocarbon molecules and impurities contained in crude oils from around the world vary greatly, as do the products produced at each refinery. The configuration of a refinery is therefore a function of the type of feedstock used (crude oil and natural gas liquids) and the products which are to be produced. There are several hundred different processes used in this industry because of these variations in feedstocks and products. The general categories of processes used are: (1) Distillation, which separates hydrocarbon molecules by differences in their physical properties (boiling points); (2) cracking, which is the breaking down of high molecular weight hydrocarbons to lower weight hydrocarbons; (3) polymerization and alkylation, which rebuild the hydrocarbon molecules; (4) isomerization and reforming, which rearrange molecular structures; (5) solvent refining, which is the separation of different hydrocarbon molecules by differences in solubility in other compounds; (6) desalting and hydrotreating, which remove impurities occurring in the feedstock; (7) the removal of impurities from finished products by various treating and finishing operations; and (8) other processes.

Several years ago, the industry began classifying refineries into five categories: A, B, C, D, and E. Each category was defined as follows:

- A—Refineries using distillation and any other processes except cracking.
- B—Refineries using distillation, cracking, and any other process, but with no petrochemical or lube oil manufacturing.

- C—Category B, with the addition of petrochemicals.
- D—Category B, with the addition of lube oils.
- E—Category B, with the addition of both petrochemicals and lube oils.

Petrochemicals as used by the industry meant any amount of production in a group of compounds historically defined as "petrochemicals". These compounds included some produced through processes normally associated with refineries, such as isomerization or distillation, and will be referred to as first generation petrochemicals. The second group of compounds considered petrochemicals were those produced through more complex chemical reactions. These compounds will be referred to as second generation petrochemicals.

The Agency was given the task of establishing effluent limitations for this diverse group of refineries. The first step needed was a breakdown of the industry into smaller groups of refineries, since the flow per unit of production within the industry was too diverse to be fit by a single set of limitations. Refineries were subcategorized based upon process configurations, i.e., the process used on the feedstock.

Once the industry was subcategorized, it was necessary to determine how the effluent limitations would be derived and what limitations would be established for each subcategory. Since refinery performance data (effluent concentrations) seemed to be independent of subcategory, EPA concluded that a single set of effluent concentrations could be achieved by all subcategories. It was then necessary to define a flow base and a method by which the amount of production at any given refinery could be taken into account. Since the industry produces many hundreds of products and those products produced are a function of process configuration and feedstock, it was decided to base the limits on the quantity of feedstock consumed. The flows were therefore based on a unit of flow per unit of feedstock consumed.

The resulting limits were therefore defined as a quantity of pollutant per unit of feedstock (mass allocation), derived by multiplying a predicted flow per unit of production times an achievable concentration.

A more detailed discussion is set forth below of how the subcategories, flows, achievable concentrations, and short-term limits were derived, beginning with the contractor's report and ending with EPA's reconsideration.

1. *Subcategorization.* The earliest subcategorization of the Petroleum Refining Industry for pollution control purposes was made by the Office of Permit Programs in the preparation of their Effluent Guidance for the issuance of discharge permits under the 1899 Refuse Act. This initial subcategorization, which was made prior to the enactment of the FWPCA, followed a classification of the industry made by the industry itself, as discussed above.

Roy F. Weston, Inc., which had previously assisted EPA in preparing Effluent

Guidance for the Petroleum Refining Industry, was retained to prepare a Draft Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category. After an additional six-month study of the industry, Weston submitted a draft report in June, 1973, which proposed a somewhat different subcategorization approach than had been used previously. These modifications in subcategorization were in recognition of the wide range of industry complexities found within the original five subcategories and constituted division of the B subcategory (into B-1 and B-2) based on the amount of cracking, and the combining of the D and E subcategories.

Many comments on the draft report subcategorization argued that splitting B into B-1 and B-2 was a step in the right direction, but it was inappropriate to combine D and E. It was also argued that a further breakdown of the industry was warranted because of the wide range of sizes and complexities within each subcategory.

In response to these early comments, EPA, in its proposed regulation published December 14, 1973, 38 FR 34542, modified Weston's subcategorization by redefining the term petrochemicals, once again separating the D and E subcategories, and establishing a new specialty lube subcategory. The 18 specialty lube refineries in the U.S. were not covered by the proposed regulation, because of the lack of data available at the time.

As in the case of the draft report, many comments on the proposed regulation argued that the proposed subcategorization did not adequately consider the wide range of plants within each subcategory. Representatives of the American Petroleum Institute Environmental Committee (including both API personnel and employees of several member companies) met with EPA on several occasions in January, February, and March, 1974. At these meetings API presented a new subcategorization technique which had been developed by one of its subcommittees. Additional meetings were held with API through April for further discussion of the API proposed subcategorization technique and of EPA's response to their proposal.

API proposed a method of predicting raw waste loads for each refinery based on a regression analysis (best fit) performed on the data for various waste parameters drawn from the 1972 refinery survey carried out jointly by API and EPA. This approach would predict expected flows and raw waste load levels for such parameters as BOD, COD, etc. API proposed guidelines that were to be derived from the raw waste loads by assuming a removal efficiency for each parameter.

There were several major problems with the specific approach recommended by API: (1) After initially running their regressions, API discarded 20 percent of the data points in order to improve the correlation. Much of the discarded data pertained to large refineries. Thus, the

validity of the analysis, particularly as applied to those refineries, is open to serious questions. (2) API adjusted the results of the mathematical analysis by making "engineering judgments." The Agency could find no defensible basis for these judgments. (3) The results of the regression on raw waste load showed little hope for a further subcategorization because of the poor correlations found. This might, in part, be explained by the fact that the regression data base included only a single day's sample for each refinery for each of the raw waste load parameters (BOD, COD, etc.).

A major drawback to API's proposal that EPA use these analyses was that a separate regression and set of criteria (achievable removal efficiency) would be required for each parameter (BOD, COD, suspended solids, oil and grease, phenolics, ammonia, sulfides, and chromium). Based on API's initial work, this approach did not appear to be workable. API expected to complete, by September 1974, a report embodying their recommended approach; this report has never been submitted to the Agency.

Nevertheless, it appeared that the regression analysis proposed by API might work well in predicting differences in flow volumes from refineries based on the configuration of each refinery, because the dry weather flows from refineries are relatively constant and the one day's data (taken during dry weather) gathered in the API/EPA survey would therefore be representative. A procedure for predicting flows based on refinery characteristics would also be usable in connection with the approach used in the proposed regulations, since the limitations were based on achievable concentrations for each parameter multiplied by a flow for each subcategory.

After several months of work, EPA arrived at a technique, utilizing regression analysis, for predicting flows. The promulgated regulations are based upon this technique. It was found that size as well as complexity (type of processing carried on in each refinery) had an effect on the expected flow volume. Using the results of a regression analysis would then allow the limits to vary up or down for each refinery based on the actual characteristics of the individual refinery.

EPA compared the median flows used in the proposed regulations and the flows predicted by the regression, to the actual refinery flows given in the API/EPA survey. It was found that the regression predicted flows for the individual refineries more accurately than did the median for the appropriate subcategory.

In the final regulations, EPA's regression analysis was used to develop factors by which the median flows are adjusted up or down, depending upon the complexity and size of the refinery. For example, a complex, very large refinery would be predicted to have a higher flow per unit of production than a simple, less complex refinery.

2. *Sources of data.* One of the difficulties encountered in developing these regulations has been, except for the data supplied by the API for flows, obtaining

usable data. Few refineries either kept data on their effluent or reported it if kept. The data used and relied upon by EPA represents a significant fraction of all the pertinent data extant.

The draft contractor's report utilized, for its flow data, information from 94 of the refineries of the 1972 API/EPA Raw Waste Load Survey. The achievable concentrations in the report for Best Practicable Technology (BPT) (1977) were based upon data from 12 refineries, upon reference materials, and upon pilot plants. These 12 refineries, misnamed "exemplary" refineries, were selected because they had treatment in place and data available; they did not necessarily represent the best or even the better refineries. The achievable concentrations in the contractor's report for Best Available Technology (BAT) (1983) were based upon pilot plant and reference materials. The variabilities used in the report were derived from those of the 12 "exemplary" refineries for which long-term data were available.

The proposed regulations were issued using the same data as that in the contractor's report.

The flow basis of the final regulations was the same as that of the contractor's report. The BPT achievable concentrations used in the final regulations were the same as those in the contractor's report, except that three additional refineries were used to calculate the chemical oxidation demand (COD) concentrations. The BAT achievable concentrations for those regulations were the same as the contractor's. For variabilities, data from five additional refineries were added to those used in the contractor's report.

For EPA's reconsideration of the regulations, leading to promulgation of the amendments to the effluent limitations guidelines, the flow basis did not change from that utilized in the contractor's report. In reexamining the BPT achievable concentrations, however, additional refinery data were used, as well as the data from the above-cited 12 refineries used for the final regulations. In reexamining the BAT achievable concentrations, additional references and pilot plant data were used. Long-term data for 7 additional refineries were used in the reconsideration of the variabilities.

3. *Flow basis.* In the draft contractor's report the flows from the refineries were broken down into three categories: 1) process water, 2) storm runoff, and 3) once-through cooling water. The process waters included: waters which come into direct contact with a product, intermediate, or raw material; contaminated storm runoff; and cooling tower blow-down. Process waters were considered to require treatment, and were to be segregated and discharged separately from clean storm runoff and once-through cooling water which were presumed to be uncontaminated. If the clean storm runoff and once-through cooling water were contaminated, however, no additional allocations were made.

The process flows appropriate to each subcategory were derived from the 1972

API EPA survey. This survey gave total flow data (process water plus once-through cooling water) for 136 refineries. Since Weston's proposed allocation was to be based on process flow, it was appropriate to restrict this data base to the 94 refineries having less than 3 percent removal of heat by once-through cooling water. Of the 94 refineries, 75 had no once-through cooling water.

EPA continued to use the 94-refinery data base, because it was believed that the inclusion of the 19 refineries with 1-3 percent of heat removal by once-through cooling would only cause a slight overestimate of the process water flows and that the disadvantage of the resultant over-allocation of process flow would be more than offset by the advantage of using a larger data base.

The proposed regulation differed from the contractor's report in several respects. The definition of process water remained the same, except that an added allocation was given for ballast water and contaminated storm water, over and above the basic allocation. In addition, concentration limits were set for both clean storm runoff and once-through cooling water. These changes meant that the basic pollutant allocation was now actually based on process water flows, and the contaminated storm runoff, ballast, clean storm runoff and once-through cooling water each received separate allocations.

In the promulgated regulation, the subcategory definitions were changed. This change altered the number of refineries in each subcategory, and consequently altered the median flows for each subcategory. However, these flows continued to be based upon the same 94 refineries, and the previous definitions of different types of waste streams (process water, ballast water, etc.) were retained. EPA has not modified the contractor's original approach to identifying flows used in the calculation of the BAT limitations. BAT flow is the average of the flows for those refineries in each subcategory having less flow than the BPT median flows. These flow values have changed as the subcategory definitions have changed.

**4. Achievable concentrations.** The effluent concentrations used to calculate the pound allocations (BPT and new source) were the same for both the contractor's draft report and the proposed regulations. The achievable concentrations were recommended by the contractor and were based upon actual performance within this and other industries, and in pilot plants.

When the effluent regulations were promulgated the achievable concentrations for chemical oxygen demand (COD) and ammonia were changed. The COD limitations were increased (for the cracking, petrochemical, lube, and integrated subcategories) to account for differences in treatability of raw waste associated with various feedstocks (specifically heavy crudes). The changes in the ammonia limitations were a consequence of the changes in subcategorization.

During the past several months EPA has obtained additional data, including

data on refineries in cold climates. Analysis of these data shows that the pollutant parameter concentrations established for BPT are in fact practicably attainable. In fact, a number of refineries are achieving all of the regulations concentrations. As expected, refineries processing light crudes generally discharge COD concentrations 20-30 percent lower than the concentrations on which the final regulations are based. Only the ammonia limitations are occasionally being exceeded by a few of the refineries examined. However, most of these refineries are currently designing or installing additional stripping capacity or a second stage of sour water stripping which will allow them to achieve the ammonia limitations.

**5. Variability factor.** The flow basis and achievable concentrations discussed to this point are based on the limits refineries are designed to attain and expected to achieve over a long period of time (generally considered to be one year). For enforcement purposes, shorter term limits were set to allow determination to be made more quickly whether or not a given refinery is in compliance with its permit limitations.

In order to derive short-term limitations from long-term data, the dispersion of short-term values about a long-term mean must be taken into account. Some daily values will be higher than the mean, some will be lower. The daily variability is the magnitude of this dispersion of daily values about the long-term mean. The monthly averages will also show variability about the long-term mean, but to a lesser extent.

Variability occurs in both flow and concentration. Some of the factors which cause variability are listed below:

- I. Flow volume variations—
  - A. Storm runoff in addition to dry weather flow
  - B. The varying throughput of the refinery, since it will not always operate at its rated capacity
  - C. Variations in pump capacity and pressure losses through the refinery
  - D. Variations in blowdown volume from the cooling towers because of the evaporation rate from the towers
  - E. Others
- II. Variation in treatment system efficiency (effluent concentration)—
  - A. Flow variations result in varying retention times (since the biological treatment system for a given refinery are fixed in size, the retention time will vary with flow-volume and the removal efficiency varies with retention time)
  - B. System upsets
  - C. Raw waste variations
  - D. Amount of equalization, which controls the impact of system upsets or raw waste variations
  - E. Slugging of storm runoff
  - F. Start-up and shut downs
  - G. Spills
  - H. Extreme or unusual weather conditions
  - I. Temperature effects
- III. Factors affecting both flow and concentrations—
  - A. Sampling techniques
  - B. Measurement error and variability

Many of the factors listed above can be minimized through proper design and

operation of a given facility. Some techniques used to minimize variability are as follows:

**1. Storm-runoff.** Storm water holding facilities should be used. Their design capacity should be based on the rainfall history and area being drained at each refinery. They allow the runoff to be drawn off at a constant rate to the treatment system.

**2. Flow variations, system upsets and raw waste variations.** The solution to these problems is similar to that for storm runoff; leveling off the peaks through equalization. Equalization is simply a retention of the wastes in a holding system to average out the influent to the treatment system.

**3. Spills.** Spills which will cause a heavy loading on the system for a short period of time, can be most damaging. A spill may not only cause high effluent levels as it goes through the system, but may also kill or damage a biological treatment system and therefore have longer term effects. Equalization helps to lessen the effects of spills. However, long-term, reliable control can only be attained by an aggressive spill prevention and maintenance program including careful training of operating personnel.

**4. Start-up and shut-down.** These should be reduced to a minimum and their effect dampened through equalization or retention, as with storm runoff.

**5. Temperature.** The design operation and choice of type of biological treatment system should in part be based on the temperature range encountered at the refinery location so that this effect can be minimized. The data base utilized by the Agency includes refinery data from cold climates and very large summer-winter temperature differences.

**6. Sampling techniques and analytical error.** These can be minimized through utilization of trained personnel and careful procedures.

From the beginning it was realized that the causes of variability could not be quantified individually. The variability (variation from average) must therefore be calculated from actual refinery data, representing the combined effect of all causes. The information sought from the data were the maximum daily and monthly average limits, which should not be exceeded if the refinery is meeting the prescribed long-term averages.

The contractor analyzed data from several refineries. To determine the daily variability (variations of single values from the average) he arranged the data from each refinery for each parameter in ascending order. The data point that was exceeded only 5 percent of the time, and the median point (50 percent above, 50 percent below) were identified. The ratio of these values (95 percent probability/50 percent probability) was called the daily variability. For the monthly variability, the daily values for each month's data were averaged and these monthly averages were analyzed as above. The resulting daily and monthly variabilities for each parameter were averaged with the variabilities for the same parameter for all of the refineries

to yield the daily and monthly variabilities for the entire industry. These industry variabilities were then multiplied by the long-term average limits to obtain the maximum daily and maximum monthly average limits.

For the proposed regulation, all of the variabilities were recalculated. The approach used by the contractor was rejected because it was inappropriate except for extremely large quantities of data, and it made no attempt to differentiate between preventable and unpreventable variability. EPA selected from the contractor's data those periods believed to represent proper operation. The data used by the contractor for some refineries contained unexplained periods of high values. Attempts were made to determine the causes of these values. In one case, one month of extremely high values occurred after a major hurricane hit the refinery in 1971. Not until a month later was the treatment system back in normal operation. In another case the treatment system operated with relatively low variability for over one year and then showed an unexplained large increase in variability the following year. Since the data for the first year of operation demonstrated that lower variability could be achieved over a long period of time, that year was selected for analysis.

The contractor determined daily variability by dividing the 95th percentile point by the 50th percentile point. EPA modified this approach by selecting the predicted 99th percentile divided by the mean. The change from 95th to 99th percentile was intended to minimize the chance that a refinery would be found in violation on the basis of random samples exceeding the limitations. Similarly, EPA selected the 98th percentile for use in determining the maximum monthly average.

The upper percentiles were derived based on the assumption that the data were distributed according to a normal or bell shaped distribution. An average variability for each parameter was then calculated and that average multiplied by the long-term average to set the daily maximum and maximum monthly averages.

Between proposal and promulgation, data were given to EPA by the American Petroleum Institute for five additional refineries, which were said to have BPT end-of-pipe treatment or its equivalent. EPA did not know the names or locations of these refineries and therefore could not check potential causes of variability. The BOD<sub>5</sub> data from these refineries were studied, and the data base used to calculate the proposed BOD<sub>5</sub> limits was reexamined. It was found that for most refineries the data more nearly approximate a log-normal (where the logarithm of the data is normally distributed) rather than a normal distribution. The variabilities were then recalculated assuming either a normal or log-normal distribution, whichever was the better fit. This analysis yielded an average daily variability for BOD<sub>5</sub> of 3.1,

instead of the proposed value of 2.1. The final regulations were based on the recalculated BOD<sub>5</sub> value of 3.1. The monthly average variabilities were not changed. For other parameters, the variabilities in the proposed regulations were multiplied by the ratio of the recalculated BOD<sub>5</sub> variability (3.1/2.3=1.35). The daily maximum to the median BOD<sub>5</sub> variability assuming normal distribution limits were determined by multiplying the long-term average by the recalculated variability.

On reexamination following promulgation of the regulations, EPA has reviewed 1974 data from seven refineries on all parameters. With the exception of suspended solids, the variability factors derived from these data confirm the variability factors originally established. This additional data on suspended solids indicated that the daily variability of 2.9 and the monthly variability of 1.7 originally calculated may be too low. Accordingly, a daily variability of 3.3 and a monthly variability of 2.1 have been established, based on the addition of this new data.

No existing plant employs the treatment technology (biological treatment followed by activated carbon) specified for 1983. The variability used for 1983 was, however, based upon the lowest variability achieved by any plant for each parameter. The Agency believes that this low variability represents the best prediction that can be made at the present time of variabilities which will be achieved by 1983. These should be much lower than the average variabilities presently being attained for the following reasons: 1) the additional step of treatment should tend to dampen peaks in the data; 2) most of the effluent data were not from systems with a filter or polishing step after biological treatment and this should help dampen peaks; 3) the activated carbon is unaffected by several of the factors causing variability in biological systems; and 4) the industry will have 10-11 years of additional experience in the area of treatment plant operation and control from the time when data was taken.

#### SUMMARY OF MAJOR COMMENTS

The following responded to the request for comments which was made in the preamble to the proposed amendment: Shell Oil Company, The American Petroleum Institute, and Texaco Inc.

Each of the comments received was carefully reviewed and analyzed. The following is a summary of the significant comments and EPA's response to those comments.

(1) One commenter stated that the regulations and the Development Document fail to disclose or explain the criteria employed by the engineering contractor or EPA for selecting the thirty candidate refineries for "exemplary plant treatment," and that EPA had not explained or justified why and how the thirty candidate refineries were narrowed down to only twelve "exemplary" refineries.

The sources of information available to the contractor for the development of the subcategorization and the choice of well-operated refineries (in terms of pollution abatement) were as follows:

1. 1972 EPA/API Raw Waste Load Survey
2. Corps of Engineers (Refuse Act) Permit Applications
3. Self-reporting discharge data from Texas, Illinois, and Washington
4. Monitoring data from state agencies and/or regional EPA offices for individual refineries.

A preliminary analysis of these data indicated an obvious need for additional information. Although 136 refineries were surveyed during the 1972 EPA/API Raw Waste Load Survey, the survey did not include any effluent data.

Refuse Act Permit Application data were limited to identification of the treatment systems used, and reporting of final concentrations (which were diluted with cooling waters in many cases); consequently, operating performance could not be established.

Self-reporting data was available from Texas, Illinois, and Washington. These reports show only the final effluent concentrations and in only some cases identify the treatment system in use; rarely is there production information available which would permit the establishment of unit waste loads.

Additional data in the following areas were required: (1) Currently practiced or potential in-process waste control techniques; (2) Identity and effectiveness of end-of-pipe waste control techniques; and (3) long-term data to establish the variability of performance of the end-of-pipe waste control techniques. The best source of information was the petroleum refineries themselves. New information was obtained from direct interviews and inspection visits to petroleum refinery facilities. Verification of data relative to long-term performance of waste control techniques was obtained by the use of standard EPA reference samples to determine the reliability of data submitted by the petroleum refineries, and by comparison with monitoring data from the state agencies and/or regional EPA offices.

The selection of petroleum refineries as candidates to be visited was guided by the trial categorization, which was based on the 1972 EPA/API Raw Waste Load Survey. The final selection was developed from identifying information available in the 1972 EPA/API Raw Waste Load Survey, Corps of Engineers Permit Applications, State self-reporting discharge data, and contacts with regional EPA offices and the industry. Every effort was made to choose facilities where meaningful information on both treatment facilities and manufacturing processes could be obtained.

After development of a probability plot for the respective raw waste loads from the tentative refinery categorization, the tentative categorization was presented to API and EPA for review and comment. Three refineries in each category were then tentatively designated as "exemplary" refineries based

on low raw waste loads determined by the API/EPA survey. Simultaneously, tentative lists of additional refineries were collected from each of the Regional EPA offices. Several lists were then prepared and submitted to EPA. From the approximately 30 refineries on these lists, the refineries for further study were then selected.

During this screening process, arrangements were made to either visit the refineries or collect additional information relative to plant operations. In some cases, refineries declined to participate in the program. As a result of the screening program, twenty-three (23) refineries were then involved in plant visits. These refineries are listed in Table 1.

The purpose of the refinery visits was to collect sufficient data in the areas of wastewater plant operations to define raw waste loads, effluent treatment schematics, operating conditions, and effluent analyses. As a result of these plant visits, data from only twelve (12) refineries (designated by stars in Table 1) were found to be available for a sufficiently long-term period (one year or more) to provide an adequate data basis for further definitive projections. Consequently, operating data from these twelve (12) refineries were then used as one of the major data sources in development of the regulations.

TABLE 1

REFINERIES VISITED UNDER CONTRACT NO. 68-01-0598

Company*	Location
Union Oil	Lemont, Ill.
Amoco	Whiting, Ind.
Amoco*	Yorktown, Va.
Coastal States <sup>1</sup>	Corpus Christi, Tex.
Champlin <sup>1</sup>	Do.
Total Leonard <sup>1</sup>	Alma, Mich.
Union Oil <sup>1</sup>	Beaumont, Tex.
Exxon	Baton Rouge, La.
Marathon <sup>1</sup>	Texas City, Tex.
Shell <sup>1</sup>	Deer Park, Tex.
OKC Refining	Oklmulgee, Okla.
Texaco <sup>1</sup>	Lockport, Ill.
Phillips <sup>1</sup>	Sweeney, Tex.
U.S. Oil & Refining*	Tacoma, Wash.
Shell <sup>1</sup>	Martinez, Calif.
BP	Philadelphia, Pa.
Gulf	Do.
Amerada Hess	Port Reading, N.J.
Arco	Philadelphia, Pa.
Gulf	Port Arthur, Tex.
Sun <sup>1</sup>	Duncan, Okla.
Kerr-McGee	Wynwood, Okla.
Laketon Refinery	Lakeside, Ind.

\* Chosen as "exemplary" refineries.

As can be seen from the above, the selection of these twelve refineries was in large part dictated by the limited availability of information.

More complete or more recent data show some of the original twelve refineries to be less than "exemplary." See Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category, pp. 12-14; "Draft Development Document for Effluent Limitations Guidelines and Standards of Performance, Petroleum Refining Industry," pp. III-2-4.

(2) One commenter objected to the calculation of 1977 flow rates from only 94 refineries, 40 percent of the industry.

Of a total of 253 petroleum refineries, EPA holds permit applications for surface water discharge for 190-200 refineries. The remaining 50-60 refineries are either "zero discharge" operations or are currently discharging to municipal waste treatment systems. EPA is aware of a number of zero discharge refineries in arid or semi-arid areas of Texas, New Mexico and Southern California, and several refineries in Los Angeles County are currently discharging to municipal waste treatment. Since none of these plants have direct surface discharge, they are excluded as potential sources of data.

Of the remaining 190-200 discharging refineries, 136 were included in the 1972 API/EPA survey, which is the only available comprehensive source of data on refinery water use. Since the survey does not show process water use as a separate discharge, but instead lists total flow volume, this limited the number of refineries for which data could be used to those for which process flow constituted most or all of the total wastewater discharged. Data from refineries removing more than 3 percent of heat by means of once-through cooling were not used, since cooling water would cause any estimate of process flow based on total plant flow to be greatly overstated for those refineries. Thus, EPA could use data from only 94 refineries. Since the API/EPA raw waste load survey was designed to be representative of the total industry, and since EPA used all of the refineries in the survey with 3 percent or less heat removal by once-through cooling water, the flows used are actually higher than the process water flows achieved by the industry. (See "Flow Basis" portion of the History of Guidelines Development in this Document).

(3) One commenter stated that, of the twelve "exemplary" refineries only one actually complies with the prescribed 1977 levels for every pollutant parameter.

EPA based the regulations not upon the overall performance of the so-called "exemplary" refineries, but on the efflu-

ent concentrations achieved by the "exemplary" refineries and plants in other industries, the variabilities achieved by the "exemplary" refineries, and flows achieved by the industry as a whole. EPA did not expect that these refineries would uniformly comply with all limitations, since they did not have all the recommended technology in place. For example, few of the "exemplary" refineries were expected to meet the degree of ammonia removal specified, since few were practicing adequate ammonia stripping.

EPA has obtained effluent data covering a full year for six of the twelve refineries. Four of these had no violations of the 1977 limitations, while another had only five data points, out of several hundred data points, above the limits.

In addition, EPA now has data on 10 additional refineries in the United States which had no violations of the regulation limits in 1974, and four others that only exceed the ammonia limits.

Included in this group of 18 refineries (14 with no violations and 4 exceeding, the ammonia limits) are "sour" crude users and refineries that are not located in areas with water shortages. It should be noted that these 18 refineries do not necessarily represent all of the refineries in the country currently meeting the regulations. The available data cover only 12 of 33 States which have refineries. EPA has requested the American Petroleum Institute to supply additional effluent data.

(4) One commenter stated that EPA failed to base the standards on the average of the best existing performances by plants currently in place.

EPA has based its limitations upon the best existing performance of plants currently providing treatment except where the industry is uniformly providing inadequate treatment. In every case, the limitations for the Petroleum Refining Point Source Category reflect actual performance of plants currently in place.

The following table summarizes the approach followed by the Agency in developing the regulations.

EPA set the BPT, BAT and New Source limits as follows:

Level	Flow	Concentration	Variability
BPT (1977)	Flow being met by 50 percent of the plants in place adjusted for process and complexity factors.	Average of the best plants for which data were available.	The average of those plants with treatment in place for which long-term data were available.
BAT (1983)	Average of the best.	Based on pilot plants.	Best individual refinery.
BADT (new source)	do.	Average of the best plants for which data were available.	The average of those plants with treatment in place for which long-term data were available.

(See Sections IV, V, IX, X, XI of the Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category, and Supplement B—"Probability Plots", refinery data and analysis files, "Variability Analysis.")

(5) One commenter objected to the Agency's reliance upon refineries in Texas and California, arguing that EPA's sample should be representative

of the geographical distribution of the industry. The commenter noted that subcategories "C", "D", and "E" are represented solely by refineries in the coastal areas of Texas and California.

A. EPA's flow data base includes refineries from all areas of the country.

B. Of the four refineries selected by the contractor in the "A" and "B" subcategories, only one was located in Texas or California.

C. There is only one "E" refinery (Phillips, Kansas City) which is not located in Texas, California, or in a coastal area.

D. The data base for "D" refineries has been broadened by adding a refinery in Illinois.

E. Of the 17 "C" refineries in the country, 9 are in Texas, California, or in a coastal area. The agency has broadened its data base to include a "C" refinery in Illinois.

(6) Several commenters stated that EPA has ignored the effect of crude oil feedstock characteristics on the treatability of refinery effluent. They claim that feedstocks containing heavy crudes, in particular crudes from California, have a substantial impact on effluent quality.

Subsequent to publication of the proposed regulations, the Shell Oil Company and the Phillips Petroleum Company submitted data for three refineries processing California crudes: Shell at Martinez, California; Shell at Wilmington, California; and Phillips at Avon, California. These data indicated that these refineries appeared to have experienced higher pollutant raw waste loads (the quantities of pollutants in the waste stream before treatment) than the median refineries of their subcategories. EPA considered this additional information in assessing whether an additional pollutant allocation should be allowed those refineries processing heavy crudes.

EPA was interested in determining whether the above-median raw waste loads of the three refineries could be clearly attributed to their California crude feedstocks, or whether their high waste loads reflected the complexities of their refinery processes. Each of the three refineries is well above-average in complexity for its subcategory.

The commenters provided raw waste loads for five parameters (BOD<sub>5</sub>, COD, TOC, phenols and ammonia) from each of the three refineries. Of these raw waste loads, 13 out of the 15 instances were above the applicable subcategory median. This is shown by the following table:

REFINERY RAW WASTE LOAD AS PERCENT ABOVE THE MEDIAN FOR THE APPROPRIATE SUBCATEGORY

	Phillips Avon	Shell Wilmington	Shell Martinez	3 refineries average
BOD <sub>5</sub> .....	29	116	99	81
COD.....	7	198	330	178
TOC.....	77	93	111	94
Ammonia.....	20	351	-47	95
Phenols.....	917	1,386	662	688

However, if refinery complexity is taken into account, by dividing each refinery's reported raw waste loads by that refinery's process factor, the resulting "complexity adjusted" raw waste loads exceed the appropriate subcategory median in only 7 of the 15 instances. This is demonstrated by the following table:

REFINERY RAW WASTE LOAD DIVIDED BY THE REFINERY PROCESS FACTOR AS PERCENT ABOVE THE MEDIAN FOR THE APPROPRIATE SUBCATEGORY

	Phillips Avon	Shell Wilmington	Shell Martinez	3 refineries average
BOD <sub>5</sub> .....	-8	-11	-12	-10
COD.....	-24	22	90	29
TOC.....	25	-21	-6	-1
Ammonia.....	-43	85	-77	-12
Phenols.....	621	609	237	490

The above table shows that the increased refinery complexity associated with those refineries processing California crudes might well be a cause of their higher raw waste loads. Since the process factor is a component of the allowed effluent limitations, it adequately compensates (with the possible exception of phenols) for the larger raw waste loads of those refineries. Existing treatment facilities have demonstrated that the phenol limits are achievable, even when raw waste loads are greatly in excess of the median.

Even if it were possible unequivocally to attribute an increased raw waste load to a feedstock type, this would not in itself justify an increased effluent limitation for refineries processing that feedstock. The long-term average quantity of a pollutant in a refinery effluent depends more upon the design and operation of the treatment system than upon the average raw waste load input to the system.

To determine whether there exists in practice a relationship between average effluent quality and raw waste load, EPA compared, for 14 refineries with both raw waste load and effluent data available, the average amount of pollutant in the effluent with the raw waste load of the pollutant. No meaningful correlation between average effluent and raw waste load was observed for the pollutants BOD<sub>5</sub>, TSS, oil and grease, phenols, and ammonia.

Thus, for these pollutants, differences in effluent quality between refineries are associated more with other factors (e.g., differences in treatment systems or in-plant controls) than with differences in raw waste load. However, EPA did find a significant correlation between the quantity of COD in the effluent of each of the refineries and the refineries' raw waste loads.

This finding merely supports EPA's action, when it promulgated the regulations, in increasing the COD limitations to avoid any possible inequity to processors of heavy crudes. (See "History of the Regulations", Part 4, "achievable concentrations".)

In addition, EPA examined data from one refinery which processed a mixture of crude types. In particular, it was claimed that the effluent quality for BOD<sub>5</sub>, phenols, and ammonia decreased as the percentage of Arabian crude in the feedstock increased. The Agency could find no significant correlation between effluent quality and the percent of Arabian crude used.

(7) One commenter stated that operating experience with the full-scale carbon adsorption system at BP's Marcus Hook refinery has been less than satisfactory, that Gulf Oil Company has found that carbon treatment is not feasible for their Port Arthur refinery wastewater, and that Texaco has apparently reached the same conclusion with regard to its Eagle Point refinery.

The best available technology economically achievable specified for the petroleum refining industry is the application of carbon adsorption to the effluent from a well operated biological/physical

treatment plant of the type required to meet the 1977 limitations. In each case specified by the commenter, activated carbon treatment was applied to wastewaters of considerably poorer quality than is required for 1977, since activated carbon was being used in lieu of biological treatment.

(8) Comments were received which assert that special unproven techniques, such as biological nitrification—denitrification for ammonia removal, and some unspecified technology for phenols, would be required to meet the ammonia and phenol limitations.

The achievable ammonia limits are based on in-plant sour water stripping techniques which are currently in use in the refining industry. A number of plants in this industry are meeting the ammonia limits using this technology. (See "Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category", pp. 95-97; 40 CFR Part 419, 39 FR 16562(23) May 9, 1974.)

The achievable phenol limits are based on the refinery effluent data and references cited in Tables 26 and 27 of the Development Document. In addition, EPA has recently acquired phenol effluent data from 11 refineries not cited in the Development Document, which data show an average phenol effluent concentration of 0.058 mg/l (0.10 mg/l was used as the achievable concentration in setting the BPT limits).

(9) Some commenters stated that neither the regulation nor the Development Document explains or assesses how refineries of widely varying age, process, geographic location, load availability, and other circumstances can further reduce flows to the 1983 volumes.

The methods currently being applied by the industry to achieve flow reductions are listed on page 169 of the Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category.

Some other methods of reducing flows not listed on page 169 are:

1. Maximum reuse of treatment plant effluent, evaporation, and consumptive use.
2. Lime and lime soda softening to reduce hardness to allow further recycling.
3. Use of specially designed high dissolved solids cooling towers which would use the blowdown from other cooling towers as make-up water.

Of the 94 refineries used in determining the flow base for the 1977 limitations, 26 were doing as well or better than the 1983 flow base. These 26 refineries are located in 15 different states (Alaska, California, Colorado, Illinois, Kansas, Kentucky, Louisiana, Montana, North Dakota, New Mexico, Ohio, Oklahoma, Texas, Utah, and Wyoming).

(10) One commenter stated that the control efficiencies needed to meet the limitations are higher than those attained by municipal plants employing traditional secondary treatment, and are derived partially from EPA's inclusion of polishing steps, including granular filtration or polishing ponds. The commenter

argued that EPA's own publications concede that there is no carefully documented filter operating experience with wastewater, and that the operating experience of the two refineries using granular media filtration (Amoco, Yorktown; BP, Marcus Hook) shows that this technology will not achieve the limits.

Many dischargers will be able to meet the limitations without a polishing step. However, the cost of filters was included in the estimates since some refineries might need a polishing step to achieve the suspended solids and oil and grease limits.

The average effluent suspended solids for the 12 refineries for which EPA has 1974 suspended solids data is 15.1 mg/l (10 mg/l is the guideline basis). Only one of these plants (Marathon Oil, Robinson, Ill.) has a filter in operation. Several are achieving less than 10 mg/l of suspended solids without a polishing step. The ten refineries for which EPA has 1974 oil and grease data are averaging 5.0 mg/l (5.0 mg/l is the regulation basis).

Experience with granular media filters, as well as with other polishing steps, is extensive and well documented. EPA's "Process Design Manual for Suspended Solids Removal" gives the results of studies of filtration of effluent from secondary biological treatment for 32 facilities. These 32 show an average suspended solids effluent concentration of 6.6 mg/l, with only 3 of the 32 over 10 mg/l.

In addition, there are approximately 2500 granular media filters being used for suspended solids removal in the Water Supply Industry. Many filters are in operation in other industries, such as steel, for oil and solids removal.

Within the petroleum industry many filters are being employed for oil removal from production water before its discharge from offshore oil platforms. Filters are also being used prior to secondary treatment (BP, Marcus Hook, Pa.; Exxon, Bayonne, N.J.; Amara-Hess, Port Reading, N.J., etc.).

Two filters are currently being used as a polishing step for secondary treatment effluents (Amoco, Yorktown, Va. and Marathon, Robinson, Ill.) and several others are now in design or under construction.

It is true that the two installations with filters now in place do not achieve the 10 mg/l of suspended solids and 5 mg/l of oil and grease expected from these units. This is a result of the conditions under which these installations have been operated. EPA's 1977 treatment model assumes that the influent to a polishing step will be an effluent from a well designed, well operated secondary treatment plant, and that the average suspended solids and oil and grease influents to the filters will be 15-25 mg/l and 5-10 mg/l, respectively.

The following data from Amoco, Yorktown's filter operation show a distinct improvement in effluent quality when the influent is within the expected range:

Date	Suspended solids (mg/l)		Oil and grease (mg/l)	
	Influent	Effluent	Influent	Effluent
July 1971 to Aug. 1971.....	18	4.8	7	1.9
Sept. 1971 to Nov. 1971.....	43	13.0	16	8.3
Dec. 1971 to Feb. 1972.....	68	39	16	10
Mar. 1972 to May 1972.....	69	38	17	13
Sept. 1972 to Nov. 1972.....	99	42	9	1.6

<sup>1</sup> Lower than the monthly maximum limit of 17 mg/l for suspended solids, and of 8 mg/l for oil and grease, assuming median flow.

The above data indicates adequate performance of the filter when the secondary treatment effluent was within the ranges of expected operation, in spite of the following unusual (and correctable) difficulties encountered at the facility; 1) filter media losses and channeling eventually forced replacement of the entire filter bed; 2) an unexpected increase in flow volume was caused by refinery acceptance of ballast water; 3) untreated lagoon water (used for backwash) was left in the filter after backwashing; and 4) the filter was not properly designed for both summer and winter influent conditions.

Not as much information was available to EPA on the Marathon, Robinson filters as was available on Amoco, but the following is known: The data for the 9 months (8/72-4/73) of operation prior to the installation of the filters show a suspended solids effluent from the secondary treatment plant of 19 mg/l average. The secondary treatment plant effluent for the 12 months of 1974 showed an average suspended solids concentration of 49 mg/l. Thus, the filters were operating at a level well above their design limits and on 2.6 times higher influent suspended solids concentration than at their initial installation. It should be noted that in spite of this, the filter effluent averaged 12 mg/l of suspended solids for the first 18 months of operation.

Granular media filters are not a cure-all or a substitute for a well designed and well operated secondary treatment system, but rather, as EPA intended, a polishing step to further improve a good secondary treatment plant effluent. Thus employed, they can productively be part of a system to meet the 1977 limitations.

(11) In support of the previous comment opposing the use of granular media filtration, a discussion of the results from a pilot plant study carried out by Standard of Ohio at its Lima, Ohio Refinery was submitted. The pilot study was designed to determine the reductions achievable in BOD<sub>5</sub>, COD, and suspended solids when a granular media filter was used to treat the effluent from their biological treatment pond.

The commenter claimed that the growth of algae precluded attainment of the BPT suspended solids, BOD<sub>5</sub>, and COD limits.

As in the cases cited in response to comment no. 10, these filters were being used for more than the polishing step EPA intended. EPA did not base the regulations on the use of granular media filtration for BOD<sub>5</sub> and COD removal. The treatment model assumes the influent to the filter be below 25 mg/l of suspended solids and 15 mg/l of BOD<sub>5</sub>. Thus, the biological treatment step preceding filtration should deliver an effluent of such quality to the filters. Such treatment can be accomplished by several techniques, either separately or in combination, including activated sludge, biological ponds, trickling filters, and aerated lagoons. The technique selected depends upon an engineering evaluation of the specific site and raw waste characteristics.

Where lagoons are employed, the effluent quality of a lagoon system can be affected adversely during certain periods of the year by the algae generated in the system. The algae can settle out in the bottom of a receiving stream or lake, undergo death and degradation, exert an oxygen demand in effluent samples and in the stream, and will be measured as part of the solids in the effluent.

There are, however, a variety of approaches which can be used to control the quantity of solids in the effluent. Most of these approaches either are in use or have been thoroughly demonstrated and can be used where needed. Under specific design and operational conditions, each approach can be economical. Applicable approaches include micro-straining, coagulation-flocculation, land disposal, granular media or intermittent sand filtration, and chemical control.

Micro-strainers have been used successfully in numerous applications for the removal of algae and other suspended material from water. In a series of nine investigations over a period of years, plankton removal averaged 89 percent. Micro-straining requires little maintenance and can be used for the removal of algae from stabilization ponds or lagoons.

Coagulation-flocculation, followed by sedimentation, has been applied extensively for the removal of suspended and colloidal material from water.

Land disposal (spray irrigation) for all or a portion of the lagoon effluent can reduce outflow to a stream during periods of high algae. This reduction can compensate for the increased solids concentrations and permit the limitations to be attained. Spray irrigation in a controlled manner onto adjacent land can be accomplished without additional environmental problems.

Although EPA did not contemplate using granular media filtration specifically to remove algae, filters have been shown to achieve the BPT limits even when influent quality was degraded due to algal growth. The Lima Refinery pilot project showed that the limits were obtained with certain media sizes and flow rates.

Chemical measures for the control of excessive algae growths in lagoons are also effective. Proper application depends upon the type, magnitude, and frequency of growth, the local conditions, and the degree of control that is necessary. For maximum effectiveness, algal control measures should be undertaken before the development of the algal bloom.

Thus, there are many alternatives that can be used for algae control and/or removal to assure that the lagoon effluent quality meets the described limitations. The alternative selected at a specific refinery will be a function of land availability, available operating personnel, degree of difficulty in meeting the limitations, and overall waste management economics.

(12) A commenter suggested that the BPT flow basis was based on flows experienced by refineries which apply good water conservation practices, and that only 50 (37 percent) of the 136 refineries in the 1972 API/EPA survey are meeting the EPA flow basis.

EPA based the BAT and BADT (1983 and New Source) flow bases on refineries employing good water conservation practices. The BPT flows were based on what one-half of the industry was achieving in 1972. In fact, 51 (54 percent) of the 94 refineries used from the 1972 API/EPA survey were at or below the BPT process water flows. No assessment of process water flows was made for the remaining 42 of the 136 refineries in the survey, since their flow volumes included large amounts of once-through cooling water, which was not included in the flow base definition. It must be recognized that the flow base is not a flow limitation, and that the pollutant allocations allowed by the regulations can be met with flows higher than predicted if the effluent concentrations are lower than those used by EPA. Since a number of refineries are achieving concentrations for each pollutant parameter that are considerably below the concentrations used by EPA, a refinery might be able to meet the effluent limits with a higher than predicted flow. The same result might be achieved by careful control and design and consequent lowered variability.

(13) Some commenters stated that EPA did not adequately consider the effects of climate on biological wastewater treatment and that substantially higher reductions can be achieved in southern states and for installations requiring summer operations only. Included were several examples of claimed summer-winter variations in refinery effluents.

EPA has collected data from ten refineries located in Illinois, Montana, North Dakota, Washington, and Utah. Effluent data from these ten refineries for the parameters which could be affected by cold climates are as follows: BOD<sub>5</sub>—13.2 mg/l average (the limitation basis is 15 mg/l), COD—75.5 mg/l average (the limitation basis for these refineries varies between 110–115 mg/l) and phenols—0.049 mg/l average (the limitation basis is 0.10 mg/l).

The commenters own data submitted with the comment provide little support for the position taken in the comment. These data tend to show, and EPA agrees, that temperature variations, with a host of other factors, do affect refinery variability. This effect is fully taken into account by the variability factors and does not appear to depend on refinery location.

(14) A commenter argued that EPA regulations would require in-plant modifications, and that EPA was not authorized under the law to require such modifications for 1977.

EPA's regulations do not require any particular form of treatment, nor do they require in-plant modifications. The regulations require the achievement of effluent limitations which are based upon the performance of good existing plants. Since the total effluent loading in pounds or kilograms is controlled by three variables, the total effluent flow, the concentration of pollutant in the effluent, and the variability, reduction of one or more of these components can be used to achieve the limitations. The limitations are based upon flow, concentration, and variability figures which are readily achievable. If a discharger's flow is higher than the flow upon which the regulations are based, the discharger has three options: he may reduce his flow to or below the predicted level, and maintain the appropriate effluent concentrations and variability; he may modify his treatment system so as to achieve lower effluent concentrations; or he may design and operate more carefully to achieve lower variability. EPA has data on dischargers which are achieving concentrations, flows, and variabilities well below those upon which the limitations are based.

EPA is aware, however, that for most such dischargers reduction of flow would be the most economical and, in the long run, the most effective means of meeting the regulations. Accordingly, our cost estimates are based upon the installation of treatment necessary to meet the regulations, and for any inplant modifications necessary to reduce process water flow commensurately.

It should be emphasized that, even for those dischargers who choose to reduce process water flow by in-plant modifications, such modifications amount to nothing more than modification and re-piping of existing processes. To meet the 1983 guidelines, more extensive changes may be appropriate. For example, dischargers employing fluid catalytic cracking may change to hydro-cracking; or those acid treating may change to hydro-treating, to help in meeting the 1983 limitations. However, such changes will not be necessary for any discharger to meet the 1977 limitations.

(15) One commenter argued that EPA made many errors in its development of the median raw waste loads from the API/EPA survey used in the regression analysis.

The median raw waste loads (Tables 18–22 in the Development Document)

were not used in the regression analysis. The regression analysis was based on the size, flow, and refining processes of each refinery used.

(16) A comment was received to the effect that EPA used median values rather than mean values to determine allowable effluent loadings and variability factors.

The commenter was incorrect. Mean values, not medians, were calculated from the "exemplary" refineries. These means were used to develop the achievable concentrations.

In calculating the variabilities for each refinery, the 99 percent probability limit was divided by the mean because the variabilities were used to predict 30-day and daily maximums from an annual average (mean).

(17) A commenter noted that the variability allowed in many of EPA's other industrial guidelines is greater than that used for the Petroleum Refining limitations. The commenter therefore requested higher variability factors, especially to cover upset conditions.

The variabilities used by EPA in setting the Petroleum Refining limitations are derived from extensive long-term data from refinery operations. These variabilities therefore reflect what is currently being achieved in this industry.

Comparison to variabilities in other industries is considered invalid for several reasons:

1. The data base used to calculate the variabilities in the Refining industry was at least 10 times larger than that available in any of the other industries mentioned by the commenter.

2. In other industries, the Agency was often required to establish variabilities based upon relatively little long-term data. In such cases, variabilities were often conservatively set at a high level, in order to compensate for the lack of data. Because of the availability of good long-term data on petroleum refiners, the Agency is confident that these variabilities are readily achievable by all refiners over the long-term.

3. The technology specified as the best practicable control technology currently available has been in use in the petroleum refining industry for a long period of time. The experience accumulated over this period of time has enabled the industry to iron out many irregularities which contribute to variability. This has enabled the petroleum industry to achieve lower variabilities than many other industries with less experience in pollution abatement. The Agency believes that the industry as a whole should be required to maintain the level of control presently practiced by many refiners.

The commenter also requested higher variabilities to cover upset conditions. As has been stated previously, data taken during periods of spills, in-plant upset conditions, etc., were included in calculating the variabilities. However, a few data points, which reported either preventable upsets of catastrophic events (such as the effects of hurricane Agnes on a coastal refinery in Texas), were deleted from the variability data base, since they did not reflect the normal operation of a well run, carefully maintained operation.

(18) One comment shows that EPA used an incorrect equation in the calculation of sample variance.

A minor error was made in the calculations used in preparation of the proposed regulations. However, since the approach used for data analysis after publication of the proposed regulations corrected that error, it did not appear in the final regulation.

(19) A commenter complained of biased data selection on the part of EPA in determining the variabilities.

The commenter presented four charts showing the monthly average loading for BOD, TSS, oil and grease, and ammonia from January, 1970 through April, 1973 for Shell, Martinez. EPA selected one year's data, for each parameter, to calculate the variability. For BOD, TSS, and oil and grease, EPA chose the year after the installation of Shell's waste treatment plant in September, 1971. The data for these parameters prior to that date could not be used because it was representative of raw waste and not effluent variability. A period of one year was chosen for several reasons: 1) one year's data should adequately represent the unpreventable causes of variability; and 2) the quantity of data is sufficient for statistical analysis and prediction of both variability and long-term performance. For oil and grease, EPA did erroneously analyze data for a period before the installation of biological treatment. However, EPA has recomputed the variability using data from the same period (after installation of treatment) used for the other parameters. The difference is negligible.

EPA believes, as indicated previously, that low variability is concomitant with good plant operation. For this reason a year different from that used for the other parameters, a year in which low ammonia variability was attained, was selected for calculating ammonia variability. It is immaterial that this year preceded installation of the biological treatment system, since most ammonia removal is accomplished by a separate system.

The commenter also pointed to several data points that were deleted from the data analyzed from the Marathon, Texas City Refinery. Five data points were dropped during the analysis of the ammonia data as not being representative of the normal plant operation. The data points were all of the data from the period 10/11/72 through 12/6/72. The data prior to 10/11/72 ranged from 2.2 to 23.4 mg/l and the data after 12/6/72 ranged from 3.2 to 39.4. The points dropped were 0.6, 0, 0, 0, and 80 mg/l. These data points were dropped because: 1) they immediately followed a 23 day period for which no data were recorded; and 2) for whatever reason (EPA has been unable to determine the cause of these aberrant values), these five consecutive deleted data points are both startlingly lower and higher than all the rest of the data. They thus may represent sampling or analytical errors. These data are clearly so atypical that EPA decided not to use them in the analysis.

Six data points are depicted as having been ignored by EPA in its analysis of Marathon's COD data. Two of these points are duplicates (1/12/72 and 1/15/73), and one point (1/31/73) was mistakenly deleted by EPA. However, the deletion of this single point (which was a low value) would have no significant effect on the regulations. The remaining four data points were deleted because Weston's trip report identified them as the result of operator mistakes.

(20) A commenter questioned the inclusion of three data points since they were preceded by the symbol meaning "less than the sensitivity at that level."

For all analytical techniques a limit of sensitivity exists below which the method does not yield reliable quantitative measurements. EPA, throughout its analysis of the Refinery Industry data, has used the level of analytical sensitivity as the data points where a "less than sensitivity" indicator appeared in the data. It is believed that elimination of these low data points might significantly bias the analysis of the total data base.

(21) A commenter questioned EPA's variability analysis on Amoco, Yorktown's BOD5 data, on the grounds that two analyses by EPA of the same data yielded strikingly different results (4.54 vs. 2.29).

This supposed inconsistency arose as a result of the progression followed by EPA in preparing the regulations (see "Variability" above). The 2.29 daily variability is the result of fitting Amoco's data to a normal distribution, while the 4.54 figure is based on a log-normal fit. The improved methodology now being used by EPA results in a 2.80 daily variability. The corrections made initially for the facts that the data fit only imperfectly to either a normal or log-normal distribution are no longer necessary.

(22) A commenter stated that EPA erred in using 2.3 as the BOD5 variability for three refineries in calculating variabilities for other parameters, since the mean of the three refineries' BOD5 variabilities is 2.14.

The mean of the three refineries' BOD5 variabilities is in fact 2.22; however, EPA used the median value, 2.3, instead of the mean.

(23) A commenter indicated that EPA did not avail itself of the data in the Brown and Root Variability Study.

EPA did in fact utilize data from five of the refineries used in the Brown and Root Variability Study. However, the Brown and Root Variability Study itself could not be used in deriving the limitations. The study did not give any raw data, or identify the refineries used in the study. Thus, EPA had no knowledge of the operation of these refineries and no opportunity to determine the causes of suspect data. Moreover, the statistical approach used by Brown and Root was inconsistent with that selected by the Agency.

The data from five of the refineries used in the Brown and Root Variability Study were used, along with other re-

finery data, to make the adjustment to the original variabilities which had been based upon a normal distribution. Since EPA has been unable to obtain the names of the refineries used by Brown and Root, it has been unable to make further use of these data.

(24) One commenter stated that since there is enormous variation in the variability factors themselves, their statistical veracity must be challenged.

The validity of a variability factor increases as the number of data points and the length of time analyzed increase. The commenter has calculated daily variabilities within each month and a coefficient of variation (standard deviation divided by the mean) for each month. Thus, his calculations would be expected to show relatively wide fluctuations. EPA used longer term data (in most cases, a full year). Accordingly, the uncertainty observed by the commenter is minimized by EPA's method of analysis.

The commenter also compared the daily variabilities based on long-term data to show the wide range of values. EPA is perfectly aware of the wide range of variabilities, and one of the intentions of the limitations is to prevent these widely varying discharges. In defining BPT, operational control is considered extremely important.

The prevention of spills, operator education, limiting analytical error, and proper treatment plant design for the control of variability are just as important as flow minimization or designing to achieve a long-term concentration limit.

(25) One commenter stated that, since EPA based effluent limits (in pounds) on the product of flow times concentration times variability, and since the commenter found no consistent correlation between flow and any effluent parameter, EPA should reevaluate the basis of its effluent limits.

The commenter provided EPA with a list of ten refineries for which he examined the correlation of effluent load with flow, and a list of those effluent parameters which he found to be significantly correlated with flow. These lists, for which the commenter failed to provide either the data on which they are based or the regression model he used to analyze that data, constitute merely a summary of results obtained.

EPA determined which effluent parameters were reported by each of the ten refineries used by the commenter. None of the ten refineries reported all effluent parameters, although the commenter's lists might lead one to believe they did. Based upon the commenter's own submission, then, the following table can be constructed:

Effluent parameter	Number of refineries (with more than 25 data points) reporting the effluent parameter	Number of refineries with significant correlation between effluent parameter and flow
BOD5.....	6	5
COD.....	8	7
TOC.....	1	1
TSS.....	8	8
Phenol.....	8	0
Oil and grease.....	9	0

Thus, in most cases where the refiners recorded data on a specific parameter, the commenter actually reported a significant correlation between effluent loading and flow. There was no reason, therefore, for EPA to reevaluate the basis for its effluent limits.

(26) One commenter stated that, since data from Shell's Martinez refinery were not distributed either normally or log-normally, EPA's approach to variability was incorrect.

The commenter provided with his comment a table summarizing the statistical parameters he investigated at the Martinez refinery. He did not provide EPA with the data he used. From the number of data points he reported, however, he apparently used data taken over approximately a three-year period. Since the treatment plant at the Martinez refinery was not installed until late in 1971, it is likely that the commenter combined in his summary data taken both before and after the treatment facilities were installed. If two such disparate statistical populations were so combined, the results obtained would be meaningless.

In addition, the procedure now used by EPA to determine the variability factor does not require that the data be distributed either normally or log-normally over its entire range.

(27) A commenter analyzed BOD data from Exxon's Baytown refinery, and derived a variability factor of 3.06, not 2.03 as given by EPA.

The commenter's value of 3.06 is the ratio between the 99th percentile of the variability distribution and the 50th percentile of that distribution (C99/C50) for the Baytown refinery. EPA actually defines the variability factor as the ratio between the 99th percentile of the variability distribution and the mean (C99/A). The correct variability factor for the Baytown refinery therefore is 2.69. EPA originally gave the figure 2.03 as that factor. Upon reanalyzing the Baytown data, EPA discovered that it had made an error in transcribing the original figures from the work sheets. EPA then recomputed the overall variability factor using the 2.69 figure, and found it remained unchanged, to within the round-off limits.

(28) A commenter argued that EPA has not demonstrated the availability of carbon adsorption as a proper basis for establishing the 1983 limitations. The commenter cited several references, in addition to those used by EPA, in making this argument.

Carbon adsorption technology has been used by industry for many years for the removal of organic contamination in the Sugar and Liquor Industries. In 1960, the detailed evaluation of carbon adsorption as a possible wastewater treatment technology began as part of the mandate of Congress (Pub. L. 87-88) to investigate advanced waste treatment technology.

A 1974 article by Hager in *Industrial Water Engineering* cites sixteen examples of full-scale industry wastewater treat-

ment installations using activated carbon. In addition, the article gives the results of 220 carbon isotherm tests, depicting the almost universal applicability of activated carbon as a viable treatment.

Much of the work done to date on activated carbon adsorption has been to show it is an alternative to biological treatment. However, carbon adsorption seems more universally applicable as a polishing step after biological treatment. A paper by Short and Myers states: "the best levels of reduction were obtained with biological treatment followed by carbon adsorption. Apparently, bio-treatment and activated carbon complement each other very well and those materials which are resistant to biological degradation are adsorbed fairly easily while those materials which are not adsorbed by carbon are biologically degradable." This statement is confirmed by: (1) A paper by Hale and Myers entitled "The Organics Removed by Carbon Treatment of Refinery Wastewater"; (2) A study carried out by Union Carbide Corporation on 93 organic compounds; (3) a paper by E. G. Paulson, "Adsorption as a Treatment of Refinery Effluent" in which carbon isotherm tests show higher BOD and COD percent removals from biological effluents than from raw wastes; and (4) the 1974 pilot plant study at the BP, Marcus Hook Refinery where a Bio-Disk was used to remove a portion of BOD5 prior to carbon adsorption, resulting in substantially better effluent quality than provided by the carbon alone.

The Agency derived its achievable BAT effluent concentrations from the information available on the results of activated carbon polishing of biologically treated effluents. The sources used to confirm the probable achievability of these effluent concentrations are as follows: Short and Myers—"Pilot Plant Activated Carbon Treatment of Petroleum Refining Wastewater"; The BP, Marcus Hook 1974 pilot plant study of Filtration and Activated Carbon (Bio-Disk); EPA Process Design Manual for Carbon Adsorption, especially the South Lake Tahoe, California, and Orange, California, biological-activated carbon treatment plant studies.

An important factor in the EPA's choice of activated carbon adsorption as a treatment step on which to base the 1983 limitations was the fact that it would be an add-on to the 1977 treatment technology. In addition, the current interest in activated carbon adsorption should make available sufficient information for the Agency to determine, prior to the implementation of BAT technology not later than 1983, if the limitations will require modification.

The commenter also questioned the justification for lower ammonia concentrations for 1983, since activated carbon does not remove ammonia. While the commenter is correct, he misunderstood the BAT ammonia limitation. That limitation is not based upon use of carbon adsorption, but rather is based on improved control of the amount of am-

monia released from the ammonia stripper to reach the amount just needed to satisfy the nutrient needs of the biological treatment plant. The Agency concluded that several additional years of experience and experimentation with both ammonia strippers and individual biological system should result in better control of stripper effluents and more complete knowledge of the nutrient needs of biological systems. Therefore, the Agency set the BAT ammonia limitations to reflect the expected reduction in "excess" ammonia (the difference between the amount discharged from strippers now and the amount of ammonia needed by biological systems).

(29) Several comments were received concerning the apparent anomaly in the final pound allocations (base limits times process factors times size factor) for certain subcategories. That is, hypothetically, in some instances, if sufficient petrochemical operations were added to either cracking refineries ("B") or lube refineries ("D") to change their classifications to, respectively, petrochemical refineries ("C") or integrated refineries ("E"), the final pound allocations for those refineries would decrease. The commenters suggested two solutions for this anomaly; either (1) add a weighting factor for the various petrochemical operations to increase the size of their process factors, or (2) eliminate the "C" and "E" subcategories, and add to the pound allocations for "B" and "D" refineries additional pounds based upon the regulations for the plastics, rubber, and organic chemical industries.

In calculating the flows, based upon the API/EPA survey (see "flow basis" above), EPA attempted to derive from the survey data the actual process wastewater flow which would require treatment. For the most part, the flows listed in the survey combined both process water and once-through cooling water. Since the once-through cooling water would ordinarily not require treatment, it was necessary to develop a means for deriving the process flow from the total flow listed in the survey.

The promulgated regulations were based upon the flows from 94 of the refineries in the API/EPA survey. Of these 94 refineries, 75 had no once-through cooling and 19 removed less than 3 percent of their heat by means of once-through cooling water. It was considered that total flow for these 94 refineries would correspond closely to process flow.

After promulgation of the regulations, EPA undertook to identify the cause of the apparent anomaly identified by the commenters. Upon careful examination of the flows in the API/EPA survey, it was found that the actual process flows for 108 of these 136 refineries (including all the original 94) could be calculated. When these process flows were compared to the total flows used, the reason for the anomaly became apparent: of the original 94 refineries, most of those with more than zero but less than 3 percent once-through heat removed by cooling water (13 of 19) were in the cracking ("B") or lube ("C") subcategories. This

cooling water appeared in the process flow allocations for the cracking and lube refineries, giving those refineries an extra "cushion" which will make the regulations easier to attain for such refineries.

EPA does not believe that the excess water allocations for the cracking and lube subcategories require modification of the regulations. Such modification would have the effect of decreasing the quantity of pollutants allowed to be discharged by refineries in these subcategories. Petrochemical and integrated refineries would be less affected, since the original flow data for these subcategories included a relatively lower proportion of once-through cooling water.

It is clear, in any event, that the solutions proposed by the commenters would be inappropriate. Since the regulations are based upon actual performance by refineries in each subcategory, it would be absurd to attempt to modify them on the basis of regulations designed for other industries. Moreover, no "weighting factor" is necessary to account for petrochemical operations, since the flows contributed by such operations are fully reflected in the flow data from petrochemical and integrated refineries used to develop the regulations.

(30) One commenter argued that the limitation for hexavalent chromium was unreasonable since technology to measure such low concentrations was unavailable.

The commenter was correct. Consequently, the achievable concentration for hexavalent chromium has been changed from 0.005 mg/l, to 0.02 mg/l in the amended regulations.

(31) Several commenters stated that EPA underestimated the costs of achieving compliance with the regulations.

EPA reexamined the economic impact analysis assuming that the cost of compliance would be 50 percent higher than the costs estimated when the regulations were originally analyzed. That is, the conclusions of the analysis were checked using cost estimates that were 50 percent higher than those shown in the economic impact report (EPA 230/2-74-020) for BAT treatment and for the "b" implant cost extrapolation (see Table III on page II-30). The conclusion of this sensitivity analysis was that the impact of the regulations would not be appreciably changed even if the costs were assumed to be 50 percent higher. Thus, even if this assumption about costs were correct, the results of the impact study and the appropriateness of the regulations would be unchanged.

Specifically, using the higher cost assumption, the analysis indicates that a total of ten small refineries, representing a total of 33,000 barrels per day capacity, would be economically threatened by the regulations. Two of these refineries, representing 7,000 barrels per day capacity, would face a significant threat of closure. These essentially are the impacts projected under the original analysis using the lower cost estimates, and may be affected in any event by governmental policy.

This sensitivity analysis was conducted using a 50 percent increase in the

cost estimates, whereas the industry has suggested that the costs actually are as much as 150 percent higher than originally estimated. This claim was believed to be totally unrealistic for several reasons. Specifically, the estimates should not include "sunk costs" (those costs that already have been increased in the past for pollution abatement). Neither should costs which would be incurred regardless of EPA regulations be included in the estimated costs of the guidelines. Therefore, an increase in the cost estimates of 50 percent is more than adequate to test for the possibility that the original costs were in error. This is particularly true because it is likely that any price increases which might have raised the costs since the original analysis was made would be offset by the conservative assumptions which were built into the original cost estimates.

The cost estimates are based upon a complete activated sludge treatment system including equalization, flotation cells, and polishing with mixed media filters. However, from the data before the Agency, it is clear that such an elaborate system will not be required in all cases. Of the plants which are achieving the limitations, a number use only aeration lagoons for treatment. Where adequate land is available at a reasonable cost, the costs of constructing a lagoon system can be considerably lower than the costs associated with installing an activated sludge system. Moreover, the operating costs of a lagoon system are minimal. Thus, if EPA cost estimates are in error, they are more likely to overstate, rather than to understate, the required capital and operating costs.

(c) As a result of the review undertaken by EPA in response to public comment upon the promulgated regulations, and upon the modifications thereto proposed on October 14, 1974, the following changes have been made in the regulations as promulgated:

Revision of the proposed amendment and promulgated regulation:

(1) The proposed amendments have been promulgated without change (See 39 FR 37069);

(2) The achievable concentration for hexavalent chromium has been changed from .005 mg/l to .02 mg/l; and

(3) The daily and monthly variabilities for suspended solids have been changed from 2.9 and 1.7 to 3.3 and 2.1 respectively.

40 CFR Chapter I, Subchapter N, Part 419 is hereby amended as set forth below to be effective June 19, 1975.

Dated: May 9, 1975.

RUSSELL E. TRAIN,  
Administrator.

**EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES AND STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES FOR THE PETROLEUM REFINING POINT SOURCE CATEGORY**

(1) The tables in § 419.12 (a), (b) (1) and (2), and (c) (1) and (2) are revised to read as follows:

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

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub> .....	22.7.....	12.0
TSS.....	15.8.....	10.1
COD.....	117.....	61.3
Oil and grease.....	6.9.....	3.7
Phenolic compounds.....	.168.....	.078
Ammonia as N.....	2.81.....	1.27
Sulfide.....	.149.....	.068
Total chromium.....	.345.....	.20
Hexavalent chromium.....	.028.....	.012
pH.....	Within the range 6.0 to 9.0.	

English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub> .....	8.0.....	4.25
TSS.....	3.6.....	3.0
COD.....	41.2.....	21.3
Oil and grease.....	2.3.....	1.3
Phenolic compounds.....	.060.....	.027
Ammonia as N.....	.99.....	.45
Sulfide.....	.053.....	.024
Total chromium.....	.122.....	.071
Hexavalent chromium.....	0.10.....	.0044
pH.....	Within the range 6.0 to 9.0.	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9.....	1.02
25.0 to 49.9.....	1.06
50.0 to 74.9.....	1.16
75.0 to 99.9.....	1.26
100.0 to 124.9.....	1.38
125.0 to 149.9.....	1.50
150.0 or greater.....	1.57

(2) Process factor.

Process configuration:	Process factor
Less than 2.49.....	0.62
2.5 to 3.49.....	0.67
3.5 to 4.49.....	0.80
4.5 to 5.49.....	0.95
5.5 to 5.99.....	1.07
6.0 to 6.49.....	1.17
6.5 to 6.99.....	1.27
7.0 to 7.49.....	1.39
7.5 to 7.99.....	1.51
8.0 to 8.49.....	1.64
8.5 to 8.99.....	1.79
9.0 to 9.49.....	1.95
9.5 to 9.99.....	2.12
10.0 to 10.49.....	2.31
10.5 to 10.99.....	2.51
11.0 to 11.49.....	2.73
11.5 to 11.99.....	2.98
12.0 to 12.49.....	3.24
12.5 to 12.99.....	3.53
13.0 to 13.49.....	3.84
13.5 to 13.99.....	4.18
14.0 or greater.....	4.36

(c) \* \* \*

(1) \* \* \*

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Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per cubic meter of flow)		
BOD <sub>5</sub>	0.048	0.026
TSS	.033	.021
COD <sup>1</sup>	.37	.19
Oil and grease	.015	.008
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 gal of flow)		
BOD <sub>5</sub>	0.40	0.21
TSS	.26	.17
COD <sup>1</sup>	3.1	1.6
Oil and grease	.126	.067
pH	Within the range 6.0 to 9.0	

(2) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per cubic meter of flow)		
BOD <sub>5</sub>	0.048	0.026
TSS	.033	.021
COD <sup>1</sup>	.47	.24
Oil and grease	.015	.008
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 gal of flow)		
BOD <sub>5</sub>	0.40	0.21
TSS	.26	.17
COD <sup>1</sup>	3.9	2.0
Oil and grease	.126	.067
pH	Within the range 6.0 to 9.0	

(2) The tables in § 419.13(b) (1) and (2) are revised to read as follows:

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

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100.0 to 124.9	1.38
125.0 to 149.9	1.50
150.0 or greater	1.57

(2) Process factor.

Process configuration:	Process factor
Less than 2.49	0.62
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95
5.5 to 5.99	1.07
6.0 to 6.49	1.17
6.5 to 6.99	1.27

Process configuration:	Process factor
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 8.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(3) The tables in § 419.15(a), (b) (1) and (2), and (c) (1) and (2) are revised to read as follows:

§ 419.15 Standards of performance for new sources.

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	11.8	6.3
TSS	8.3	4.9
COD <sup>1</sup>	61	32
Oil and grease	3.6	1.9
Phenolic compounds	.088	.043
Ammonia as N	2.8	1.3
Sulfide	.078	.035
Total chromium	.18	.105
Hexavalent chromium	.015	.0068
pH	Within the range 6.9 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	4.2	2.2
TSS	3.0	1.9
COD <sup>1</sup>	21.7	11.2
Oil and grease	1.3	.79
Phenolic compounds	.531	.016
Ammonia as N	1.9	.45
Sulfide	.027	.012
Total chromium	.064	.037
Hexavalent chromium	.0052	.0025
pH	Within the range 6.9 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100.0 to 124.9	1.38
125.0 to 149.9	1.50
150.0 or greater	1.57

(2) Process factor.

Process configuration:	Process factor
Less than 2.49	0.62
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95
5.5 to 5.99	1.07
6.0 to 6.49	1.17
6.5 to 6.99	1.27

Process configuration:	Process factor
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 8.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(c) \* \* \*

(1) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per cubic meter of flow)		
BOD <sub>5</sub>	0.048	0.026
TSS	.033	.021
COD <sup>1</sup>	.37	.19
Oil and grease	.015	.0089
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 gal of flow)		
BOD <sub>5</sub>	0.40	0.21
TSS	.27	.17
COD <sup>1</sup>	3.1	1.6
Oil and grease	.126	.067
pH	Within the range 6.0 to 9.0	

(2) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per cubic meter of flow)		
BOD <sub>5</sub>	0.048	0.026
TSS	.033	.021
COD <sup>1</sup>	.47	.24
Oil and grease	.015	.008
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 gal of flow)		
BOD <sub>5</sub>	0.40	0.21
TSS	.27	.17
COD <sup>1</sup>	3.9	2.0
Oil and grease	.126	.067
pH	Within the range 6.0 to 9.0	

(4) The tables in § 419.22 (a) and (b) (1) and (2) are revised to read as follows:

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

(a) \* \* \*

Effluent limitations		
Effluent characteristic	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	28.2	15.6
TSS	19.5	12.6
COD <sup>1</sup>	210	100
Oil and grease	8.4	4.5
Phenolic compounds	.21	.10
Ammonia as N	18.8	8.5
Sulfide	.18	.082
Total chromium	.43	.25
Hexavalent chromium	.035	.016
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	9.9	5.5
TSS	6.9	4.4
COD <sup>1</sup>	74	38.4
Oil and grease	3.0	1.6
Phenolic compounds	.074	.036
Ammonia as N	6.6	3.0
Sulfide	.065	.029
Total chromium	.15	.088
Hexavalent chromium	.012	.0056
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration:	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(5) The tables in § 419.23(b) (1) and (2) are revised to read as follows:

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

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration:	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(6) The tables in § 419.25 (a) and (b) (1) and (2) are revised to read as follows:

§ 419.25 Standards of performance for new sources.

(a) \* \* \*

Effluent limitations		
Effluent characteristic	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	16.3	8.7
TSS	11.3	7.2
COD <sup>1</sup>	118	61
Oil and grease	4.8	2.5
Phenolic compounds	.119	.058
Ammonia as N	18.8	8.6
Sulfide	.105	.048
Total chromium	.21	.14
Hexavalent chromium	.020	.0088
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	5.8	3.1
TSS	4.0	2.5
COD <sup>1</sup>	41.5	21
Oil and grease	1.7	.93
Phenolic compounds	.042	.020
Ammonia as N	6.6	3.0
Sulfide	.037	.017
Total chromium	.084	.049
Hexavalent chromium	.0072	.0032
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration:	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29

Process configuration:

Process configuration:	Process factor
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(7) The tables in § 419.32(a) and (b) (1) and (2) are revised to read as follows:

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

(a) \* \* \*

Effluent limitations		
Effluent characteristic	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	34.6	18.4
TSS	23.4	14.8
COD <sup>1</sup>	210	109
Oil and grease	11.1	5.9
Phenolic compounds	.25	.120
Ammonia as N	23.4	10.6
Sulfide	.22	.099
Total chromium	.52	.30
Hexavalent chromium	.046	.020
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	12.1	6.5
TSS	8.3	5.25
COD <sup>1</sup>	74	38.4
Oil and grease	3.9	2.1
Phenolic compounds	.088	.0425
Ammonia as N	8.25	3.8
Sulfide	.078	.035
Total chromium	.183	.107
Hexavalent chromium	.016	.0072
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream-day:	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration:	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(8) The tables in § 419.33(b) (1) and (2) are revised to read as follows:

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

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration:	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(9) The tables in § 419.35 (a) and (b) (1) and (2) are revised to read as follows:

§ 419.35 Standards of performance for new sources.

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
	Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)	
BOD <sub>5</sub>	21.8	11.6
TSS	14.9	9.5
COD <sup>1</sup>	133	69
Oil and grease	6.0	3.5
Phenolic compounds	.158	.077
Ammonia as N	23.4	10.7
Sulfide	.149	.063
Total chromium	.32	.19
Hexavalent chromium	.025	.012
pH	Within the range 6.0 to 9.0.	

	English units (pounds per 1,000 bbl of feedstock)	
BOD <sub>5</sub>	7.7	4.1
TSS	5.3	3.3
COD <sup>1</sup>	47	24
Oil and grease	2.4	1.3
Phenolic compounds	.056	.027
Ammonia as N	8.3	3.8
Sulfide	.059	.022
Total chromium	.116	.068
Hexavalent chromium	.0096	.0044
pH	Within the range 6.0 to 9.0.	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration:	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(10) The tables in § 419.42 (a) and (b) (1) and (2) are revised to read as follows:

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

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
	Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)	
BOD <sub>5</sub>	50.8	25.8
TSS	35.8	22.7
COD <sup>1</sup>	360	187
Oil and grease	16.3	8.5
Phenolic compounds	.38	.184
Ammonia as N	23.4	10.6
Sulfide	.33	.159
Total chromium	.77	.45
Hexavalent chromium	.068	.039
pH	Within the range 6.0 to 9.0.	

	English units (pounds per 1,000 bbl of feedstock)	
BOD <sub>5</sub>	17.9	9.1
TSS	12.5	8.0
COD <sup>1</sup>	127	69
Oil and grease	5.7	3.0
Phenolic compounds	.133	.065
Ammonia as N	8.3	3.8
Sulfide	.118	.053
Total chromium	.273	.159
Hexavalent chromium	.024	.011
pH	Within the range 6.0 to 9.0.	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(11) The tables in § 419.43 (b) (1) and (2) are revised to read as follows:

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

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream-day:	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(12) The tables in § 419.45 (a) and (b) (1) and (2) are revised to read as follows:

§ 419.45 Standards of performance for new sources.

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	34.6	18.4
TSS	23.4	14.9
COD <sup>1</sup>	945	196
Oil and grease	10.5	5.6
Phenolic compounds	.25	.12
Ammonia as N	23.4	10.7
Sulfide	.230	.10
Total chromium	.82	.31
Hexavalent chromium	.046	.021
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	12.2	6.5
TSS	8.3	5.3
COD <sup>1</sup>	87	45
Oil and grease	3.8	2.6
Phenolic compounds	.088	.043
Ammonia as N	8.3	3.8
Sulfide	.078	.035
Total chromium	.180	.105
Hexavalent chromium	.022	.0072
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(13) The tables in § 419.52 (a) and (b) (1) and (2) are revised to read as follows:

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

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	54.4	28.9
TSS	37.3	23.7
COD <sup>1</sup>	388	198
Oil and grease	17.1	9.1
Phenolic compounds	.40	.192
Ammonia as N	23.4	10.6
Sulfide	.35	.158
Total chromium	.82	.48
Hexavalent chromium	.098	.032
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	19.2	10.2
TSS	13.2	8.4
COD <sup>1</sup>	186	70
Oil and grease	6.0	3.2
Phenolic compounds	.14	.068
Ammonia as N	8.3	3.8
Sulfide	.124	.056
Total chromium	.29	.17
Hexavalent chromium	.025	.011
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200.0 to 224.9	0.99
225 or greater	1.04

(2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(14) The tables in § 419.53 (b) (1) and (2) are revised to read as follows:

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

(b) \* \* \*

(b) \* \* \*

(1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200.0 to 224.9	0.99
225 or greater	1.04

(2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(15) The tables in 419.55 (a) and (b) (1) and (2) are amended to read as follows:

§ 419.55 Standards of performance for new sources.

(a) \* \* \*

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock)		
BOD <sub>5</sub>	41.6	22.1
TSS	28.1	17.9
COD <sup>1</sup>	205	152
Oil and grease	12.6	6.7
Phenolic compounds	.30	.14
Ammonia as N	23.4	10.7
Sulfide	.26	.12
Total chromium	.64	.37
Hexavalent chromium	.052	.024
pH	Within the range 6.0 to 9.0	
English units (pounds per 1,000 bbl of feedstock)		
BOD <sub>5</sub>	14.7	7.8
TSS	9.9	6.3
COD <sup>1</sup>	104	84
Oil and grease	4.5	2.4
Phenolic compounds	.105	.051
Ammonia as N	8.3	3.8
Sulfide	.033	.042
Total chromium	.230	.13
Hexavalent chromium	.019	.0084
pH	Within the range 6.0 to 9.0	

(b) \* \* \*

## (1) Size factor.

1,000 bbl of feedstock per stream day:	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200.0 to 224.9	0.99
225 or greater	1.04

## (2) Process factor.

Process configuration:	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

[FR Doc.75-12959 Filed 5-19-75;8:45 am]

## Title 41—Public Contracts and Property Management

## CHAPTER 114—DEPARTMENT OF THE INTERIOR

## PART 114-47—UTILIZATION AND DISPOSAL OF REAL PROPERTY

## Reassignment by Agencies and Report of Identical Bids

Pursuant to the authority of the Secretary of the Interior contained in 5 U.S.C. 301, and sec. 205(c), 63 Stat. 390 (40 U.S.C. 486(c)), Subparts 114-47.2 and 114-47.3, Chapter 114, of Title 41 of the Code of Federal Regulations, are amended as set forth below.

It is the general policy of the Department of the Interior to allow time for interested parties to take part in the rulemaking process. However, these amendments are entirely administrative in nature. Therefore, the public rulemaking process is waived and these amendments will become effective on May 20, 1975.

RICHARD R. HITE,  
Deputy Assistant Secretary  
of the Interior.

MAY 12, 1975.

## Subpart 114-47.2—Utilization of Excess Real Property

Section 114-47.203-1 is amended by revising paragraph (d) to read as follows:  
§ 114-47.203-1 Reassignment of real property by the agencies.

(d) *Circularization of power transmission facilities.* The approval of the appropriate program Assistant Secretary shall be obtained prior to circularization of any available power transmission line or related facility having an estimated fair market value of \$1,000 or more.

(1) In the case of planned disposal of facilities held by the Bonneville Power

Administration, Alaska Power Administration, and the Southwestern Power Administration such approval shall be obtained from the Assistant Secretary—Energy and Minerals.

(2) In the case of planned disposal of facilities held by the Bureau of Reclamation, approval of the Assistant Secretary—Land and Water Resources shall be obtained.

(3) Requests for approval to initiate action to dispose of power transmission facilities shall be accompanied by a complete description of the circumstances which the holding Bureau believes makes such disposal feasible. A copy of each request shall be furnished the Assistant Director for Property Management, Office of Management Services.

## Subpart 114-47.3—Surplus Real Property Disposal

Section 114-47.304-8 is revised to read as follows:

## § 114-47.304-8 Report of identical bids.

(a) The reporting requirements specified in FPMR 114-47.304-8 are applicable to all sales of Government-owned property made on a competitive basis whether competition is obtained through sealed bid, negotiation, auction, or spot bid procedures. They apply to:

(1) Program sales made pursuant to special statutes authorizing the Secretary of the Interior to sell specific real properties, and

(2) Sales of surplus real property made pursuant to the provisions of the Federal Property and Administrative Services Act of 1949, as amended.

(b) Reports on identical bids required by this subsection shall be submitted by the heads of Bureaus and Offices directly to the Attorney General in accord with FPMR 101-47.304-8. A copy of the transmittal letter and a copy of the abstract of bids shall be furnished to the Assistant Director for Property Management, Office of Management Services.

[FR Doc.75-13146 Filed 5-19-75;8:45 am]

## Title 45—Public Welfare

## CHAPTER 1—OFFICE OF EDUCATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

## PART 100a—DIRECT PROJECT GRANT AND CONTRACT PROGRAM

## PART 184—ETHNIC HERITAGE STUDIES PROGRAM

## Miscellaneous Amendments

Notice of proposed rule making was published in the FEDERAL REGISTER on December 31, 1974 (39 FR 45297), setting forth regulations for the Ethnic Heritage Studies Program (Title IX of the Elementary and Secondary Education Act) as added by section 504 of the Education Amendments of 1972, Pub. L. 92-318 (20 U.S.C. 900 to 900a-5), and amended by section 111 of the Education Amendments of 1974, Pub. L. 93-380.

These proposed rules would replace standards and funding criteria which were published on April 12, 1974 (39 FR

13297) by adding a new Part 184 to the Code of Federal Regulations. This program was administered under the April 12 standards last fiscal year.

The following paragraphs reiterate the fundamental changes between the standards published on April 12, 1974 and the regulations as they will be published in final form.

a. The standards published in April required all authorized activities (curriculum development, dissemination, and training) to be performed by a grant recipient. This may have had the result of unduly restricting entry into the program because some applicants with the ability to perform some activities lacked the capacity to perform all activities. Section 184.11(a) of the rule permits an applicant to qualify for consideration if it can perform at least one of the three activities listed. This change results from a substantive amendment to the Act made by section 111 of Pub. L. 93-380.

b. Previously, the Act required that curriculum materials developed be for use in elementary and secondary schools and institutions of higher education. The amendment contained in section 111 of Pub. L. 93-380 permits the development of materials for elementary schools, secondary schools, or institutions of higher education, thus allowing a more flexible approach. This change is reflected in § 184.11(a) (i) of the rule.

c. As a result of the 1974 amendments, funding criteria have been added for separate activities (curriculum, dissemination, and training). (see § 184.31(c).)

d. The section on advisory councils (§ 184.12) is essentially in the form set forth in the previous standard, with some drafting and clarifying changes.

Interested parties were invited to submit written comments, suggestions and objections. Below is a summary of the comments received pertaining to the proposed rule and the responses from this Office. All comments received were given careful consideration, but none was sufficiently substantive to merit a change in the proposed rules. Several technical corrections were made in the citations of legal authority under the table of contents and under subpart D, Funding Criteria. Several typographical errors were also corrected.

1. *Comment.* A commenter, an Indian tribe, requested that American Indian tribes be specifically designated as eligible applicants in the regulations.

*Response.* Title IX acknowledges the importance of the ethnic heritage of all Americans, consequently the scope of the legislative intent encompasses native American tribes and organizations as eligible to the extent that they are nonprofit and have an educational purpose. Section 184.21 states the parties eligible for assistance, as provided by the statute, including nonprofit educational organizations. The nonprofit educational organizations of an Indian tribe would be eligible under this language. This office received applications from several different Indian organizations which were considered in the preceding year.