ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 419

[OW-FRL-2815-5]

Petroleum Refining Point Source Category; Effluent Limitations Guidelines

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is amending the regulation which limits effluent discharges to waters of the United States from facilities engaged in the refining and processing of petroleum. EPA proposed these modifications on August 28, 1984, (49 FR 34153) in accordance with a settlement agreement which resolved a lawsuit brought against EPA by the Natural Resources Defense Council, Inc. The lawsuit challenged the final petroleum refining regulation promulgated on October 18, 1982 (47 FR 40434). Today's final rule incorporates the proposed amendments which are: (1) Modifications to the "best available technology economically achievable" (BCT) effluent limitations for process wastewater for the pollutants phenolic compounds, total chromium, and hexavalent chromium; (2) "best conventional pollutant control technology" (BCT) effluent limitations for process wastewater; and (3) "best practicable control technology currently available" (BPT). The Agency reserved certain cost determinations used to develop the BCT effluent limitations guidelines for "best available control technology currently available" (BPT). The Agency reserved coverage of "best conventional pollutant control technology" (BCT) effluent limitations guidelines. The preamble of the 1982 final regulations describes the history of the rulemaking. (47 FR 46543)

B. Challenges to the Prior Regulation


C. Settlement Agreement

On April 17, 1984, EPA, NRDC, API and all other interveners to the litigation entered into a comprehensive Settlement Agreement. In the Settlement Agreement, EPA agreed to publish a notice of proposed rulemaking and to solicit comments regarding certain modifications to the 1982 final petroleum refining BAT effluent limitations guidelines. In addition, EPA agreed to propose BCT effluent limitations guidelines for four conventional pollutants and BPT, BAT and BCT effluent limitations guidelines for contaminated storm water runoff. Petitioner NRDC agreed that if EPA took final action pursuant to and consistent with the Settlement Agreement that it will dismiss its lawsuit challenging the 1982 final petroleum refining regulation.

As part of the Settlement Agreement, the parties agreed to seek a judicial stay of the regulatory provisions to be modified. On July 24, 1984, the Court entered a stay of the effluent limitations for phenolic compounds, total chromium and hexavalent chromium for the following portions of the regulation pending the rulemaking: 40 CFR 419.13(a), 419.23(a), 419.33(a), 419.43(a), and 419.53(a). On August 28, 1984, EPA published the proposed amendments to the 1982 effluent limitations guidelines in accordance with the Settlement Agreement (49 FR 34152). Public comments were received and considered in issuing this final rule.

III. Changes From Proposal

Today's final rule amends the effluent limitations guidelines for the petroleum refining point source category; it is the same as the August 28, 1984 proposed amendments. However, certain cost determinations used to develop the BCT
effluent limitations guidelines have been revised since the proposal but do not affect the Agency's original conclusion that BCT should be set equal to BPT for this industry.

EPA published a proposed BCT methodology (47 FR 49176) which set forth a procedure for evaluating the cost reasonableness of BCT effluent limitations guidelines. The proposed BCT limitations for the petroleum refining industry were based upon that published methodology, which includes the "POTW test" and the "industry cost test." The Agency selected and evaluated two levels of technology for the control of conventional pollutants from petroleum refineries (i.e., recycle/reuse and recycle/reuse plus granular media filtration following BPT). Incremental (beyond BPT) conventional pollutant removals and costs associated with the candidate BCT technologies were calculated for model plants representative of each of the five petroleum refining subcategories. The resulting "cost per pound removed" ratios failed the BCT cost test. The Agency therefore proposed that BCT be set equal to BPT for all five petroleum refining subcategories.

Subsequently, EPA published a notice of data availability concerning the BCT methodology on September 20, 1984 (49 FR 37046). The Agency has revised its BCT cost evaluation for petroleum refining to incorporate the updated information referenced in the notice of data availability. The revised cost ratios for the recycle/reuse technology options with 20 to 40 percent reductions in discharge flow range from $50.48 to $1.11 (1977 dollars). The revised cost ratios for the recycle/reuse plus filtrations options range from $27.05 to $1.11 (1977 dollars). The benchmark in 1977 dollars for the POTW cost test based on the Agency's re-proposed BCT methodology is approximately $0.76 per pound of pollutant removed. The Agency is presently revising the BCT methodology and expects the benchmark to change. Based on preliminary analysis, the Agency expects that the candidate technologies will fail under future BCT cost tests. Thus, the Agency has decided to establish BCT effluent limitations guidelines equal to BPT effluent limitations guidelines for the Petroleum Refining Industry in this rulemaking. Several typographical and transcription errors appeared in 419.43(c)(2), 419.14(a), 419.34(b)(1) and in Appendix A, in the proposed rule published on August 28, 1984, 49 FR 34152. Those errors have been corrected in the amendments set forth below.

In addition, today's notice amends the BPT effluent limitations guidelines for sulfide in Subparts A and C and for hexavalent chromium in Subpart A, which appeared in the Federal Register notice of October 18, 1982 (47 FR 49434) and were reprinted in 40 CFR Part 419 dated July 1, 1984 to correct typographical errors. Because these limitations appeared in both metric and English units, the typographical errors have been obvious. Also, amendments are made to correct typographical errors in a paragraph reference that appeared in Subparts D and E for NSPS, and in a refinery capacity range in a size factor table that appeared in Subpart E for BPT. These amendments appear in the amended regulation that follows this preamble.

IV. Amendments to the Petroleum Refining Point Source Category Regulation

The following are the changes to the petroleum industry regulation that EPA proposed on August 28, 1984:

A. Best Available Technology Effluent Limitations Guidelines

On October 18, 1982 EPA published final effluent limitations guidelines for best available technology economically achievable (BAT) and final pretreatment standards for existing sources (PSES) and for new sources (PSNS) for the petroleum refining industry. 47 FR 49434. The Natural Resources Defense Council ("NRDC") filed a petition to review the October 18, 1982 regulation in the United States Court of Appeals for the District of Columbia Circuit. The American Petroleum Institute (API) and seven companies which own and operate petroleum refineries intervened in that proceeding. A number of issues were raised in settlement discussions among the parties in the lawsuit pertaining to the BAT effluent limitations guidelines. After extensive discussions, the petitioner, interveners and EPA entered a Settlement Agreement, which provides for specified revisions to the BAT effluent limitations guidelines. Those revisions are set forth in today's amended regulation.

In October 1982 EPA promulgated BAT effluent limitations for the following pollutants: (1)

1. Nonconventional pollutants: chemical oxygen demand (COD), phenolic compounds (AAP), ammonium (as N) and sulfide and total chromium and hexavalent chromium.

The model technology for these regulations was flow equalization, initial oil and solids removal, advanced oil and solids removal, biological treatment and filtration or other final "polishing steps."

The Agency is now amending the BAT effluent limitations guidelines for total chromium, hexavalent chromium and phenolic compounds (AAP) being added flow reduction to the model treatment technology for the BAT effluent limitations guidelines and is basing the effluent limitations for each of these three pollutants on a more recent data base, rather than the one it relied upon in the October 18, 1982 BAT promulgation. That rulemaking utilized the same data based used by the Agency when it established best practicable control technology currently available (BPT) effluent limitations guidelines for the petroleum refining point source category. The BPT level of control for this industry was promulgated on May 9, 1974 (39 FR 16560) and subsequently amended on May 20, 1975 (40 FR 21939). The BAT effluent limitations guidelines for other pollutants remain unchanged.

The BAT effluent limitations guidelines for total chromium being promulgated today are based upon the revised 1979 flow model developed by the Agency to predict refinery flows, rather than the BPT 1974 flow model used in the October 1982 BAT promulgation. The effluent limitations for total chromium being promulgated today were derived by applying this updated flow model to concentrations for total chromium observed from plant sampling in 1976-1977.

BAT effluent limitations guidelines for hexavalent chromium and phenolic compounds being promulgated today were derived using the 1982 Development Document concentrations and the revised 1979 flow model to more accurately represent effluent reductions for these pollutants which the industry was generally achieving in 1979 or could technologically achieve by the final BAT compliance date. BAT for hexavalent chromium being promulgated today is based upon option 7 (discharge flow reduction of 37.5 percent from the revised 1979 model flow). BAT for phenolic compounds (AAP) being promulgated today is based upon option 8 (a reduction of 20 percent from the revised 1979 model flow).

Under today's rulemaking, the BAT effluent limitations guidelines for each of these three pollutants are substantially more stringent than the BAT effluent limitations guidelines promulgated in 1982. The total allowable discharge of total chromium to the nation's navigable waters is reduced by approximately 286,000 pounds per year, a 66 percent annual reduction beyond discharge levels allowable under the existing BAT effluent limitations guidelines; the total allowable discharge of hexavalent chromium is reduced by...
approximately 19,300 pounds per year, a 56 percent annual reduction beyond discharge levels allowable under existing BAT; the total allowable discharge of phenolic compounds (4AAP), is reduced by approximately 75,000 pounds per year, a 43 percent annual reduction beyond discharge levels allowable under existing BAT. These reductions are based on data in the Agency's refined BAT flow model. The refined flow model is included in the record for this rulemaking in a report entitled "Petroleum Refining Industry, Refinements to 1979 Proposed Flow Model."

EPA believes that approximately one half of the refineries which directly discharge pollutants to navigable waters already are complying with the effluent limitations being promulgated today. Further, EPA believes that the effluent limitations are economically achievable for the industry.

In the preamble to the October 16, 1982 promulgated regulations for this industry, EPA estimated that capital costs of $112 million and $37 million (1979 dollars) in annualized costs would be required in order for petroleum refiners to comply with option 7, one of the BAT control treatment options considered by the Agency (47 FR 46436). Likewise, EPA estimated that capital costs of $77 million and annualized costs of $25 million (1979 dollars) would be required in order for petroleum refiners to comply with option 6, another of the BAT control treatment options considered by the Agency (47 FR 46436).

The revised limitations being promulgated today for phenolic compounds, hexavalent chromium and total chromium are not based on either option 7 or option 6 alone. The effluent limitations for phenolic compounds are based upon option 6. The effluent limitations for hexavalent chromium are based upon option 8. The effluent limitations for total chromium are based upon option 7. The effluent limitations for total chromium, while somewhat more stringent than the BAT effluent limitations for total chromium, are less stringent than those based upon option 8.

The Agency has reevaluated the costs of compliance for today's changes to the BAT effluent limitations and estimates that the total industry costs of compliance would not exceed those previously calculated for option 8. EPA estimates that no more than 61 petroleum refineries will have to incur aggregate capital costs no greater than $77 million and annualized costs no greater than $25 million (1979 dollars). These costs translate to an average increase of no greater than one half cent per gallon of refinery product. No refinery closures are anticipated by the Agency. Refinery capacity and consumption would remain unaffected. Given these factors, the Agency believes that its earlier heavy reliance on costs as the basis for rejecting more stringent effluent controls in this industry was inappropriate, and that the effluent limitations guidelines for total chromium, hexavalent chromium and phenolic compounds (4AAP) being promulgated today, rather than the effluent limitations guidelines promulgated in 1982, are appropriate for this industry as the BAT level of control. The revised BAT numerical limitations and contained in the final regulation.

B. Best Conventional Pollutant Control Technology Effluent Limitations Guidelines

As part of the Settlement Agreement EPA agreed to propose best conventional pollutant control technology ("BCT") effluent limitations guidelines for the petroleum refining industry. The 1977 Amendments to the Clear Water Act ("CWA") added section 301(b)(2)(E) of the Act establishing BCT for discharge of conventional pollutants from existing industrial point sources. Conventional pollutants are those defined in section 304(a)(4) [biochemical oxygen demand (BOD₅), suspended solids (TSS), fecal coliform and pH], and any additional pollutants defined by the Administrator as "conventional". The Administrator designated oil and grease as a conventional pollutant on July 30, 1979, 44 FR 44501.

BCT is not an additional limitation but replaces BAT for the control of conventional pollutants. In addition to other specified in Section 304(b)(4)(B) the Act requires the BCT limitations be assessed in light of a two-part "cost reasonableness" test. American Paper Institute v. EPA, 660 F2d 954 [4th Cir. 1981]. The first test compares the cost for private industry to reduce its conventional pollutants with the costs to publicly owned treatment works for similar levels of reduction in their discharge of these pollutants. The second test examines the cost-effectiveness of additional industrial treatment beyond best practicable control technology currently available (BPT). EPA must find that limitations are "reasonable" under both tests before establishing them as BCT. In no case may BCT be less stringent than BPT.

EPA published a proposed BCT methodology on October 29, 1982. (47 FR 49176). This proposed BCT methodology explains the details of the two part cost-reasonableness test, i.e., the "BCT test" and the "industry cost test." In addition, the Agency published a "notice of data availability" concerning the proposed BCT methodology on September 20, 1984 (49 FR 37048).

Today's promulgated BCT effluent limitations guidelines for the petroleum refining industry are based on the proposed BCT methodology. Today's final regulations establish BCT equal to BPT for the petroleum refining industry. EPA considered two levels of technology for incremental control beyond BPT of total suspended solids (TSS) and oil and grease. These technology levels are recycle/reuse and recycle/reuse followed by granular media filtration. These technologies are already in use at certain sites in the petroleum refining industry. These technologies were selected as candidate BCT technologies because the Agency believes they represent the first levels of control beyond BPT which could effect reduction in conventional pollutant loadings in this industry. Filtration alone was not selected as a candidate BCT technology because it is one of the existing BPT treatment technologies. However, the Agency decided to consider the combination of recycle/reuse plus filtration as a candidate BCT technology. This is because the decreased hydraulic loading resulting from recycle/reuse in the need for smaller and less costly filtration equipment than that included in the BPT treatment model. The BCT cost test was then performed on the combination of recycle/reuse and filtration as a double-check on the effects of the less costly filtration step.

In order to determine whether these candidate technologies are "cost reasonable", EPA developed one model plant representative of a typical plant in each of the five BPT subcategories. The five BPT subcategories are:

A—Topping
B—Cracking
C—Petrochemical
D—Lube
E—Integrated

Then EPA calculated the incremental (beyond BPT) conventional pollutant removals and the incremental costs associated with these technologies for each model plant. Based on this information, cost-per-pound ratios were calculated for each of the five BPT subcategories.

EPA evaluated reductions in total suspended solids (TSS), biochemical oxygen demand (BOD₅), and oil and grease for each of these technology levels. However, oil and grease was not considered for the BCT calculations for...
recycle/reuse for this industry. Additionally, BOD was not considered for the BCT calculations for filtration for this industry. This is in accordance with the proposed BCT methodology in order to avoid “double counting” of the amount of pollutants removed by a candidate BCT technology.

The recycle/reuse technology option identified for BCT was evaluated in the range of from 40 percent reduction in discharge flow. The cost per pound ranges from $41.00 to $77.00 (1977 dollars) to $3.16 (1977 dollars) based upon the September 20, 1984 notice of data availability in the first part of the proposed BCT cost reasonableness test (the “OTW test”). Accordingly, the Agency found that the addition of recycle/reuse technology fails the first part of the proposed BCT cost reasonableness test in all five subcategories ($0.30 per pound in 1977 dollars) [approximately $0.76 per pound in 1977 dollars based upon the September 20, 1984 notice of data availability].

The Agency also found that the addition of recycle/reuse plus filtration fails the first part of the proposed BCT cost reasonableness test in all five subcategories. The recycle/reuse portion of this option was evaluated in the range of from 20 to 40 percent reduction in discharge flow. The cost per pound (1977 dollars) ranges from $21.00 to $52.00, compared to the benchmark of $0.30 per pound (1977 dollars) [approximately $1.11 per pound (1977 dollars) based upon the September 20, 1984 notice of data availability]. Therefore, the Agency is promulgating BCT equal to BPT for the five subcategories in this industry.

A more complete discussion of the selection of the candidate BCT technologies, the details of the first part of the proposed BCT cost reasonableness test ("OTW test"), and the basis for decision are contained in the administrative record of this rulemaking.

C. Effluent Limitations Guidelines for Contaminated Storm Water Runoff

In the October 18, 1982 rulemaking the Agency withdrew storm water effluent limitations guidelines for BPT, BAT and NSPS, because they were remanded by the U.S. Court of Appeals in American Petroleum Institute v. EPA, 540 F.2d 1023 (10th Cir. 1976).

Since then there has been some confusion on the part of permit writers and others as to whether storm water runoff ("runoff") effluent limitations should be contained in permits. There are two kinds of such runoff, i.e., contaminated and uncontaminated.

The purpose of this rulemaking is to establish BPT, BCT, and BAT effluent limitations guidelines for contaminated storm water runoff. Today’s promulgated contaminated runoff effluent limitations are to be included in petroleum refinery permits in addition to process wastewater effluent limitations. NSPS for runoff is being reserved for future rulemaking.

In today’s final regulations, EPA is defining contaminated runoff, for purposes of these regulations only, to be runoff which comes into contact with any raw material, intermediate product, finished product, by-product or waste product located on petroleum refinery property. Any other storm water runoff at a refinery is considered uncontaminated. Today’s final regulations also amend the definition of the term “runoff” currently found in 40 CFR 419.11(b) to clarify that it means the flow of storm water resulting from precipitation coming into contact with petroleum refinery property. Contaminated runoff constitutes an additional source of pollution which must be managed during periods of precipitation along with process wastewater from refinery operations.

Today’s final regulations do not establish numerical effluent limitations for uncontaminated runoff. Effluent limitations, including but not limited to allocations for uncontaminated runoff may be established by the permit writer based on his/her best professional judgment.

The Agency believes that the best practicable control technology currently available, the best conventional pollutant control technology and the best available technology economically achievable for treatment of contaminated runoff are the same as the technologies identified for treatment of process wastewater. The Agency has not identified any feasible technologies capable of achieving pollutant reductions for contaminated runoff from refineries to any greater degree than those which are achievable by the process wastewater treatment facility.

The Agency believes that the conventional pollutant oil and grease and the nonconventional pollutant parameter total organic carbon (TOC) are appropriate measures to determine whether pollutant loadings in contaminated runoff would be measurable reduced by the model treatment technologies used to develop these final regulations. Under today’s final regulations for BPT, wastewater consisting solely of contaminated runoff may be discharged directly without treatment if it does not exceed 15 mg/l oil and grease and 110 mg/l TOC, based upon an analysis of any single grab or composite sample. Under today’s final regulations for BCT, wastewater consisting solely of contaminated runoff may be discharged directly without treatment if it does not exceed 15 mg/l oil and grease and 110 mg/l TOC. If contaminated runoff (whether or not it exceeds 15 mg/l oil and grease or 110 mg/l TOC) is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, such runoff would be subject to the alternative BPT/BCT/BAT effluent limitations guidelines for contaminated runoff being promulgated today, as appropriate. These oil and grease and TOC numerical effluent limitations are based on the concentrations expected from the properly designed and operated model treatment facilities.

The effluent limitations guidelines in today’s BPT regulation for contaminated runoff are based on the same concentrations and variability factors used to develop the Agency’s existing BPT process wastewater effluent limitations guidelines.

Today’s BAT regulation for contaminated runoff is based on the same concentrations and variability factors used to develop the Agency’s existing BAT effluent limitations guidelines for process wastewater.

Today’s promulgated BAT effluent guidelines for phenolic compounds (4AAP) for contaminated runoff are based on the same concentrations used for the existing BAT effluent limitations guidelines for process wastewater and the same variability factors used for the Agency’s existing BAT effluent limitations guidelines. EPA has determined that this approach is appropriate because of the specifics of each data base available to the Agency. If EPA used the variability factors from today’s promulgated BAT effluent limitations guidelines, less stringent BAT contaminated runoff numerical effluent limitations for phenolic compounds (4AAP) would be derived than under today’s promulgated BAT
contaminated runoff numerical effluent limitations for phenolic compounds (4AAP). The more stringent effluent limitations clearly are achievable and as a matter of law BAT cannot be less stringent than BPT.

Today's BCT regulation for contaminated runoff is based on the same concentrations and variability factors used for today's promulgated BCT process wastewater effluent limitations guidelines.

The Agency believes that the costs attributable to today's regulations will be minimal, while providing for reductions in refinery pollutant discharges. This is because the Agency believes the industry as a whole already is (a) treating contaminated runoff with process wastewater or (b) is discharging contaminated runoff below today's promulgated threshold for treatment. Today's final regulations do not cover contaminated runoff which is commingled with nonprocess wastewater streams. EPA believes that such instances are infrequent, and accordingly, they are left to the permit writer's discretion.

Unlike the effluent limitations guidelines for process wastewater for this industry which are mass-based, today's promulgated effluent limitations guidelines for contaminated runoff are concentration-based. This is because storm water volumes are not related to any measurement of refinery production. However, under today's regulations permit effluent limitations for contaminated runoff are to be established on a mass basis. The mass-based effluent limitations for each regulated pollutant for contaminated runoff in a petroleum refining permit are the product of (1) the respective effluent guideline concentration for that pollutant; and (2) the measured or calculated contaminated runoff volume.

Under today's regulations permit writers are given flexibility in determining refinery storm water volumes on a case-by-case basis. The following factors are among those appropriate for permit writers to consider in determining what contaminated runoff volume to use in calculating mass-based effluent limitations for refinery permits: (a) Measured difference between dry weather and wet weather discharge flow from the treatment facility where contaminated runoff is the only runoff present in the treatment facility; and (b) volume of contaminated runoff water calculated from the product of (1) measurement of land area where precipitation would become contaminated, and (2) an historical measure of precipitation for the particular refinery location.

Once the mass based effluent limitation is derived, it may be incorporated into a refinery permit in one of three ways. The proper choice depends on site-specific factors, such as local rainfall patterns and the design of runoff holding facilities.

The first method is a continuous allocation. This presents the problem of providing an allocation when no runoff is present and is appropriate only where precipitation patterns are relatively constant through the year or when holding facilities are used to bleed runoff into the treatment facility over most or all of the year. The second method is a variable allocation based on measurement or calculation of actual contaminated runoff volume. While this is the most ideal method, it may present compliance measurement and enforcement complexities. The third method is dual wet weather/dry weather limitations triggered by either time of year, precipitation events, or actual contaminated runoff volume. The method of determining contaminated runoff volume used to calculate the effluent limitations will vary depending on the method used and the design of any runoff holding facilities. Therefore, it is left to the permit writer to select an appropriate method under today's rulemaking.

These regulations do not address uncontaminated runoff which is discharged through the process wastewater treatment facility. This is because the Agency believes that introducing uncontaminated runoff to the process wastewater treatment system may result in the discharge of an increased mass of pollutants to the environment compared to the mass of pollutants discharged if no uncontaminated runoff were present in the process wastewater treatment system. Therefore, the Agency does not want to encourage this practice on a national basis.

In the case of BPT, the effluent limitations guidelines promulgated today are for the following pollutants (1) conventional pollutants: total suspended solids (TSS), oil and grease, five-day biochemical oxygen demand (BOD₅) and pH; (2) nonconventional pollutants: phenolic compounds (4AAP), chemical oxygen demand (COD) and total organic carbon (TOC); and (2) toxic pollutants: total chromium and hexavalent chromium. In the case of BAT, the effluent limitations guidelines being promulgated today are for (1) nonconventional pollutants: Phenolic compounds (4AAP), chemical oxygen demand (COD) and total organic carbon (TOC); and (2) toxic pollutants: total chromium and hexavalent chromium. In the case of BCT, the effluent limitations guidelines being promulgated today are for the conventional pollutants TSS, oil and grease, BOD₅ and pH. In the case of COD, there may be instances where extremely high chloride levels (greater than 1,000 mg/l) will interfere with the COD analytical method. In this event, the Agency believes that TOC is an acceptable substitute parameter for COD. A TOC limitation shall be based upon effluent data from the particular refinery which correlated TOC to BOD₅. Where adequate correlation data are not available, the permitting authority may establish a TOC limitation on a ratio of 2.2 to 1 to the applicable BPT/BCT effluent limitations for BOD₅. This ratio is based upon effluent data analyzed by the Agency.

No effluent limitations guidelines for contaminated runoff are being promulgated for the nonconventional pollutants ammonia (as N) and sulfide regulated under existing BPT and BAT levels of control.

V. Environmental Impact of the Amendments

EPA's estimates of the reduction in industry-wide direct discharges of phenolic compounds, hexavalent chromium, and total chromium for process wastewater from those allowed under the 1982 final petroleum industry regulation to those allowed by today's amendments are presented below.

REDUCTIONS IN ALLOWABLE DISCHARGE

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<tr>
<td>Hexavalent chromium</td>
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<tr>
<td>Phenolic compounds</td>
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VI. Responses to Major Comments

The Agency encourages public participation in the rulemaking process and solicited comments on the proposed amendments. Public comments were received and considered in issuing this final rule. A summary of all the comments received and the Agency's responses to those comments are included in a report titled, "Response to Public Comments on the Proposed Amendments to the Effluent Limitations Guidelines for the Petroleum Refining Point Source Category", which is included in the public record for this regulation.

Most of the commenters expressed full support for the promulgation of the
amended regulations as proposed. Although none of the commenters disagreed with the Agency's action, some believed it necessary to comment on the background and development of the appropriate refinery subcategorization on the Agency's intended procedures for applying the effluent limitations guidelines. The major comments are addressed below.

A. Best Available Technology Effluent Limitations Guidelines (BAT)

Some of the commenters argued that wastewater flow reduction is not an appropriate basis upon which to base effluent limitations guidelines for this industry. It was claimed that other pollutant specific control techniques will be used, if necessary, to achieve the proposed discharge limits for process wastewater.

The Agency has documentation that flow reductions are achievable technology for this industry. Industry and Agency studies that confirm this fact are included in the rulemaking record for this regulation. These investigations conclusively demonstrated that refineries have numerous methods available to reduce process wastewater generation or discharge volumes. These studies also demonstrated that the costs and specific methods available are heavily dependent on site-specific factors at each individual refinery. The Agency has also noted that there is a substantial downward trend in historical water usage/discharge rates industry-wide regardless of environmental regulatory requirements.

There may be some refineries which have already achieved a low flow condition or cannot implement flow reduction due to site-specific factors. In these cases, improvements to the existing treatment system design or operation, or in refinery operating practices, may be necessary to meet today's amended BAT effluent limitations. It should be further clarified that the regulation does not preclude the implementation of other control options such as pollutant specific control techniques or other techniques which a refinery considers the most cost-effective method to achieve its permit conditions.

Clarification was sought by commenters on the method that should be followed to determine the appropriate refinery subcategorization on the Agency's intended procedures for applying the effluent limitations guidelines. The major comments are addressed below.

The effluent limitations guidelines developed for the petroleum refining industry are production based. Although previous permits may have been issued on the basis of process capacities, permit limits based on the revised BAT regulations should be calculated on the basis of actual production rates. For this reason, the permit writer should undertake a thorough review of a refinery's historical process utilization rates and process groupings to determine a reasonable measure of actual production projected for the period the permit would be in effect. This method of determining appropriate process feedstock rates for use in calculating mass effluent limits is in accordance with 40 CFR 122.45[b]. The individual process feedstock rates established should be based on data from the same time period, i.e., all production data for the same time period. Generally, this time period (e.g., calendar year) could be that for which the sum of the crude process feedstock rates is the greatest, but is still representative of anticipated feedstock rates for the duration of the NPDES permit.

The next step in this method is to calculate a daily average feedstock rate for each refinery process included in the determination of effluent limitations. These values may be calculated by dividing an annual historical feedstock rate for each process by the number of days the process was in operation. These same average daily process feedstock rates should be used in the calculation of both daily maximum and 30-day average BAT effluent limitations. This method is consistent with the procedure the Agency used to develop the effluent limitation factors for the amended regulations and with 40 CFR 122.45. Additionally, the daily maximum and 30-day average variability factors, which are components of the effluent limitation factors used to derive permit effluent limitations, reflect short-term (i.e., monthly and daily) deviations from long-term (annual average) performance.

The amended BAT limits for phenolic compounds, total chromium and hexavalent chromium are based on a flow model and daily maximum variability factors which are different than those used to establish the BPT regulations. Some BAT permit limitations could be less stringent than the BPT limitations for a given refinery, even though the BAT and BPT limitations are calculated using the same process feedstock rates determined in accordance with the provisions of 40 CFR 122.45. These occurrences can be caused by the inclusion of additional processes and a new process grouping in the BAT flow model. In such instances, the resultant permit limitations would be the more stringent of either the calculated BPT limitations or calculated BAT limitations. This is because BAT permit limitations may not be less stringent than BPT. In order to make a proper comparison, the BPT limitations should be recalculated using: (1) Production data from the same time period that are used to calculate the BAT limitations; and (2) the BPT process groupings and subcategorization.

In an effort to provide guidance on the application of the proposed amendments to the BAT effluent limitations guidelines, the Agency held workshops in San Francisco and Dallas for permit writers during November and December 1984.

B. Best Conventional Pollutant Control Technology Effluent Limitations Guidelines (BCT)

Commenters agreed with the approach that was followed by the Agency in its BCT cost evaluation and that the two candidate technologies selected are the most cost effective beyond BPT. Even though the Agency found that none of the four regulatory options that were considered passed the BCT cost test for any of the five subcategories, commenters argued that the actual cost per pound of pollutant removed would be greater than those estimated by EPA. It was argued that the removal cost ratios presented in the Agency's original BCT cost evaluation report were underestimated because filtration costs were understated and removal efficiencies were overstated. It was also pointed out that the BCT evaluation should incorporate available updated information.

As discussed in Section III of this preamble, the Agency has revised its BCT cost evaluation to incorporate the updated information referenced in the notice of data availability published on September 20, 1984 (49 FR 37046). The Agency also believes that the filtration costs and removal efficiencies used in its original evaluation are realistic. Nonetheless, if costs were understated and pollutant removals were overstated as argued, then removal cost ratios would fail the BCT cost test by an even wider margin, which would not change the Agency's original conclusion that BCT should be set equal to BPT for this industry.

C. Effluent Limitations Guidelines for Contaminated Storm Water Runoff

Commenters supported the reinstitution of allocations for the
must judge whether a regulation is “major” and therefore subject to the requirement of a Regulatory Impact Analysis. This regulation is not major because it does not fall within the criteria for major regulations established in Executive Order 12291.

VIII. Regulatory Flexibility Analysis

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., EPA must prepare a Regulatory Flexibility Analysis for all regulations that have a significant impact on a substantial number of small entities. The Agency does not believe that today’s rulemaking will have a significant impact on any segment of the petroleum refining industry, large or small. The Agency has not, therefore, prepared a formal analysis for this regulation.

IX. OMB Review

This regulation was submitted to the Office of Management and Budget for review as required by Executive Order 12291. Any comments from OMB to EPA and any EPA responses to those comments are available for public inspection at Room M2404, U.S. EPA, 401 M Street, SW., Washington, D.C. from 9:00 a.m. to 4:00 p.m. Monday through Friday, excluding Federal holidays.

X. List of Subjects in 40 CFR

Petroleum, water pollution control, Wastewater treatment and disposal.

Dated: July 1, 1985.

A. James Barnes,
Acting Administrator.

For the reasons set out in the preamble, EPA is amending 40 CFR Part 419 as follows:

PART 419—PETROLEUM REFINING POINT SOURCE CATEGORY

1. The authority citation for Part 419 continues to read as follows:

Authority: Secs. 301, 304 (b), (c), (e), and (g), 306 (b) and (c), 307 (b) and (c), and 501, Federal Water Pollution Control Act as amended (the Act); 33 U.S.C. 1311, 1314 (b), (c), (e), and (g), 1316 (b) and (c), 1317 (b) and (c), and 1381; 80 Stat. 816, Pub. L. 86-290; 91 Stat. 1587, Pub. L. 95-217.

2. Section 419.11 is amended by revising paragraph (b) and adding paragraph (g) to read as follows:

§ 419.11 Specialized definitions.

(b) The term “runoff” shall mean the flow of storm water resulting from precipitation coming into contact with petroleum refinery property.

(g) The term “contaminated runoff” shall mean runoff which comes into contact with any raw material, intermediate product, finished product, by-product or waste product located on petroleum refinery property.

§ 419.12 [Amended]

3. In § 419.12(a), the table is amended as follows:

A. Under the heading “English units (pounds per 1,000 bbl of feedstock)”, in the first column opposite “sulfide”, “0.53” is revised to read “0.053”.

B. Under the heading “English units (pounds per 1,000 bbl of feedstock)”, opposite “sulfide” in the second column, “0.24” is revised to read “0.024”.

C. Under the heading “English units (pounds per 1,000 bbl of feedstock)”, opposite “hexavalent chromium”, in the first column “0.10” is revised to read “0.01”.

§ 419.32 [Amended]

4–6. In § 419.32(a), in the second column of the table, under “Metric units (kilograms per 1,000 m3 of feedstock)”, opposite “sulfide”, “0.52” is revised to read “0.22”.

§ 419.52 [Amended]

7. The table in § 419.52(b)(1), under the column “1,000 barrels of feedstock per stream day,” the figures “125.0 to 124.9” and “200 to 244.9” are revised to read “125.0 to 149.9” and “200.0 to 224.9,” respectively.

§§ 419.12, 419.22, 419.32, 419.42, and 419.52 [Amended]

8. Sections 419.12(e), 419.22(e), 419.32(e), 419.42(e), and 419.52(e) are amended by removing the paragraph heading and the word “reserved” and by adding the following text:

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

(e) Effluent Limitations for Contaminated Runoff. The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

1. If wastewater consists solely of contaminated runoff and is not commingled or treated with process
wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

2. If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Phenolic compounds (4AAP)</td>
<td>0.35</td>
<td>0.17</td>
</tr>
<tr>
<td>Total chromium</td>
<td>0.73</td>
<td>0.43</td>
</tr>
<tr>
<td>Hexavalent chromium</td>
<td>0.062</td>
<td>0.028</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

English units (pounds per 1,000 gallons of flow)

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD</td>
<td>0.40</td>
<td>0.22</td>
</tr>
<tr>
<td>TSS</td>
<td>0.28</td>
<td>0.18</td>
</tr>
<tr>
<td>COD</td>
<td>3.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>0.13</td>
<td>0.067</td>
</tr>
<tr>
<td>Phenolic compounds (4AAP)</td>
<td>0.0009</td>
<td>0.0014</td>
</tr>
<tr>
<td>Total chromium</td>
<td>0.0060</td>
<td>0.0035</td>
</tr>
<tr>
<td>Hexavalent chromium</td>
<td>0.00052</td>
<td>0.00023</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\S\ 419$.—Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(i) Effluent Limitations for Contaminated Runoff. The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

1. If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

2. If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>Maximum for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD</td>
<td>0.35</td>
<td>0.17</td>
</tr>
<tr>
<td>TSS</td>
<td>0.60</td>
<td>0.21</td>
</tr>
<tr>
<td>COD</td>
<td>0.062</td>
<td>0.029</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>3.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Phenolic compounds (4AAP)</td>
<td>0.0009</td>
<td>0.0014</td>
</tr>
<tr>
<td>Total chromium</td>
<td>0.0060</td>
<td>0.0035</td>
</tr>
<tr>
<td>Hexavalent chromium</td>
<td>0.00052</td>
<td>0.00023</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

English units (pounds per 1,000 gallons of flow)

(i) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to the applicable process feedstock factor, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in Appendix A, by process type. The process identification numbers presented in this Appendix A are for the convenience of the reader. They can be cross-referenced in the Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category (EPA 440/1-82/014), Table III-7, pp. 49-54.
(2) See the comprehensive example in Subpart D, §419.43(c)(2).

14. Section 419.43 is amended by adding a new paragraph (c) to read as follows:

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

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

<table>
<thead>
<tr>
<th>Pollutant or pollutant property and process type</th>
<th>Bat effluent limitation factor</th>
<th>Metric units (kilograms per 1,000 bbl of feedstock)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English units (pounds per 1,000 bbl of feedstock)</td>
<td>Max for any 1 day</td>
<td>Metric values for 30 consecutive days shall not exceed</td>
</tr>
<tr>
<td>Phosphoric compounds (P):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude</td>
<td>0.013</td>
<td>0.003</td>
</tr>
<tr>
<td>Crude cracking</td>
<td>0.147</td>
<td>0.026</td>
</tr>
<tr>
<td>Asphalt</td>
<td>0.006</td>
<td>0.009</td>
</tr>
<tr>
<td>Lube</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>Total chromium</td>
<td>0.011</td>
<td>0.004</td>
</tr>
<tr>
<td>Crude</td>
<td>0.119</td>
<td>0.041</td>
</tr>
<tr>
<td>Crude cracking</td>
<td>0.064</td>
<td>0.022</td>
</tr>
<tr>
<td>Asphalt</td>
<td>0.029</td>
<td>0.104</td>
</tr>
<tr>
<td>Lube</td>
<td>0.107</td>
<td>0.037</td>
</tr>
<tr>
<td>Total hexavalent chromium</td>
<td>0.0007</td>
<td>0.0003</td>
</tr>
<tr>
<td>Crude</td>
<td>0.0076</td>
<td>0.0024</td>
</tr>
<tr>
<td>Crude cracking</td>
<td>0.001</td>
<td>0.0019</td>
</tr>
<tr>
<td>Asphalt</td>
<td>0.0192</td>
<td>0.0067</td>
</tr>
<tr>
<td>Lube</td>
<td>0.0009</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

(2) Example Application of Effluent Limitations Guidelines as Applicable to Phenolic Compounds, Hexavalent Chromium, and Total Chromium.

The following example presents the derivation of a BAT phenolic compound (AAP) effluent limitation (30-day average) for a petroleum refinery permit. The methodology is also applicable to hexavalent chromium and total chromium.

<table>
<thead>
<tr>
<th>Refinery process</th>
<th>Process load factor 1,000 bbl/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric crude distillation</td>
<td>100</td>
</tr>
<tr>
<td>Crude deasphalting</td>
<td>50</td>
</tr>
<tr>
<td>Vacuum crude distillation</td>
<td>76</td>
</tr>
<tr>
<td>Total crude processes (C)</td>
<td>225</td>
</tr>
<tr>
<td>Fluid catalytic cracking</td>
<td>25</td>
</tr>
<tr>
<td>Total cracking and coking processes (K)</td>
<td>45</td>
</tr>
<tr>
<td>Asphalt production</td>
<td>5</td>
</tr>
<tr>
<td>Total asphalt processes (A)</td>
<td>5</td>
</tr>
<tr>
<td>Hydrocracking</td>
<td>3</td>
</tr>
<tr>
<td>Total tube processes (L)</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: 30 day average effluent limitation for the Petroleum Refining Point Source Category (EPA 440/1-62/014), Table III-7, pp. 49-54.

15. Section 419.14 is revised to read as follows:

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

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>Max for any 1 day</th>
<th>Average of daily values for 30 consecutive days shall not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>English units (pounds per 1,000 bbl of feedstock)</td>
<td>BCT effluent limitations</td>
<td></td>
</tr>
<tr>
<td>BOD&lt;sub&gt;5&lt;/sub&gt;</td>
<td>227</td>
<td>12.0</td>
</tr>
<tr>
<td>TSS</td>
<td>15.8</td>
<td>10.1</td>
</tr>
<tr>
<td>Oil and Grease</td>
<td>6.9</td>
<td>5.7</td>
</tr>
<tr>
<td>pH</td>
<td>(1)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

(1) Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

<table>
<thead>
<tr>
<th>Process stream/day</th>
<th>Size factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 bbl of feedstock per stream day</td>
<td>Less than 24.9</td>
</tr>
<tr>
<td>25.0 to 49.9</td>
<td>1.06</td>
</tr>
<tr>
<td>50.0 to 74.9</td>
<td>1.16</td>
</tr>
<tr>
<td>75.0 to 99.9</td>
<td>1.26</td>
</tr>
<tr>
<td>100 to 124.9</td>
<td>1.38</td>
</tr>
<tr>
<td>125.0 to 149.9</td>
<td>1.50</td>
</tr>
<tr>
<td>150.0 or greater</td>
<td>1.57</td>
</tr>
</tbody>
</table>

(2) Process factor.

<table>
<thead>
<tr>
<th>Process configuration</th>
<th>Process factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 24.9</td>
<td>1.02</td>
</tr>
<tr>
<td>2.5 to 34.9</td>
<td>0.62</td>
</tr>
</tbody>
</table>
The refinery.

Based on those ballast waters treated at

allowed

attributable to ballast, which may be

controlled

pollutants or pollutant properties

corrupt the quantity and quality of

13.0

10.5

10.0 to 10.49

2.31

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

4.38

(3) See the comprehensive example in

Subpart D, § 419.43(b)(3).

(c) The following allocations

constitute the quantity and quality of

pollutants or pollutant properties
controlled by this paragraph and
attributable to ballast, which may be

discharged after the application of best

conventional pollutant control

technology by a point source subject to

this subpart, in addition to the discharge
allowed by paragraph (b) of this section.

The allocation allowed for ballast water
flow, as kg/cu m (lb/1000 gal), shall be

based on those ballast waters treated at
the refinery.

(d) The quantity and quality of

pollutants or pollutant properties
controlled by this paragraph attributable
to once-through cooling water, are
excluded from the discharge allowed by
paragraph (b) of this section.

(e) Effluent Limitations for
Contaminated Runoff. The following

effluent limitations constitute the quantity
and quality of pollutants or pollutant
properties controlled by this paragraph and
attributable to contaminated runoff which may

discharged after the application of the

best conventional pollutant control
technology by a point source subject to

this subpart.

(1) If wastewater consists solely of

contaminated runoff and is not

commingled or treated with process

wastewater, it may be discharged if it

does not exceed 15 mg/l oil and grease

based upon an analysis of any single

grab or composite sample.

(2) If contaminated runoff is

commingled or treated with process

wastewater, or if wastewater consisting
solely of contaminated runoff which

exceeds 15 mg/l oil and grease is not

commingled or treated with any other
type of wastewater, the quantity of

pollutants discharged shall not exceed

the quantity determined by multiplying
the flow of contaminated runoff as
determined by the permit writer times

the concentrations listed in the following:

The limits set forth in paragraph
(a) of this section are to be multiplied by
the following factors to calculate the
maximum for any one day and

maximum average of daily values for

thirty consecutive days.

(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

BCT effluent limitations

Pollutant or pollutant property

Maximum for any 1 day

Average of daily values for 30

consecutive days shall not exceed

Metric units (kilograms per

1,000 m³ of flow)

BOD

30

TSS

15

Oil and grease

0.15

ph

7.0

English units (pounds per

1,000 gallons of flow)

BOD

0.40

TSS

0.28

Oil and grease

0.13

ph

7.0

*Within the range of 5.0 to 9.0.

18. Section 419.24 is revised to read as
follows:

§ 419.24 Effluent limitations guidelines

representing the degree of effluent

reduction attainable by the application of

the best conventional pollutant control

technology (BCT).

(a) Any existing point source subject
to this subpart must achieve the following

effluent limitations representing the degree of effluent

reduction attainable by the application of the

best conventional pollutant

control technology (BCT):

BCT effluent limitations

Pollutant or pollutant property

Maximum for any 1 day

Average of daily values for 30

consecutive days shall not exceed

Metric units (kilograms per

1,000 m³ of feedstock)

BOD

25.0

TSS

19.3


d (3) See the comprehensive example in

Subpart D, § 418.42(b)(3).
best conventional pollutant control technology by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations for contaminated runoff</th>
<th>Metric units (kilograms per 1,000 m³ of flow)</th>
<th>English units (pounds per 1,000 gal of feedstock)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average of daily values for 30 consecutive days shall not exceed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Maximum for any 1 day</td>
<td>Less than 24.9</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 to 49.9</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50.0 to 74.9</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75.0 to 99.9</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0 to 124.9</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125.0 to 149.9</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150.0 or greater</td>
<td>1.13</td>
</tr>
</tbody>
</table>

1. Within the range of 6.0 to 9.0.

17. Section 419.34 is revised to read as follows:

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

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations</th>
<th>Metric units (kilograms per 1,000 m³ of feedstock)</th>
<th>English units (pounds per 1,000 gal of feedstock)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum for any 1 day</td>
<td>BOD₅</td>
<td>48.</td>
</tr>
<tr>
<td></td>
<td>Average of daily values for 30 consecutive days shall not exceed</td>
<td>TSS</td>
<td>33.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil and grease</td>
<td>15.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pH</td>
<td>8.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BOD₅</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TSS</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil and grease</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pH</td>
<td>0.067</td>
</tr>
</tbody>
</table>

1. Within the range of 6.0 to 9.0.

18. Section 419.44 is revised to read as follows:

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

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations</th>
<th>Metric units (kilograms per 1,000 m³ of feedstock)</th>
<th>English units (pounds per 1,000 gal of feedstock)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum for any 1 day</td>
<td>BOD₅</td>
<td>50.6</td>
</tr>
<tr>
<td></td>
<td>Average of daily values for 30 consecutive days shall not exceed</td>
<td>TSS</td>
<td>33.6</td>
</tr>
</tbody>
</table>

1. Within the range of 6.0 to 9.0.
technolgy by a point source subject to this subpart. (1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample. (2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum for any 1 day</td>
</tr>
<tr>
<td></td>
<td>Average of daily values</td>
</tr>
<tr>
<td></td>
<td>for 30 consecutive days</td>
</tr>
<tr>
<td></td>
<td>shall not exceed</td>
</tr>
<tr>
<td>Oil and Grease</td>
<td>17.9</td>
</tr>
<tr>
<td>pH</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>8.1</td>
</tr>
<tr>
<td>BOOD</td>
<td>1.25</td>
</tr>
<tr>
<td>TSS</td>
<td>5.7</td>
</tr>
<tr>
<td>pH</td>
<td>1</td>
</tr>
</tbody>
</table>

1 Within the range of 6.0 to 9.0. (b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days. (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 8.49 | 0.81 |
6.5 to 7.49 | 0.88 |
7.5 to 8.49 | 1.00 |
8.5 to 9.49 | 1.19 |
9.5 to 10.49 | 1.29 |
10.5 to 10.99 | 1.53 |
11.0 to 11.49 | 1.67 |
11.5 to 11.99 | 1.82 |
12.0 to 12.49 | 2.09 |
12.5 to 12.99 | 2.37 |
13.0 or greater | 2.44 |

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart. (d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. (e) Effluent Limitations for Contaminated Runoff. The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart. (1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample. (2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum for any 1 day</td>
</tr>
<tr>
<td></td>
<td>Average of daily values</td>
</tr>
<tr>
<td></td>
<td>for 30 consecutive days</td>
</tr>
<tr>
<td></td>
<td>shall not exceed</td>
</tr>
<tr>
<td>BOOD</td>
<td>17.1</td>
</tr>
<tr>
<td>TSS</td>
<td>1.0</td>
</tr>
</tbody>
</table>

1 Within the range of 6.0 to 9.0. (b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days. (1) Size factor.

1,000 bbl of feedstock per stream day | Size factor |
--- | --- |
Less than 124.9 | 0.73 |
125.0 to 149.9 | 0.78 |
150.0 to 174.9 | 0.83 |
175.0 to 199.9 | 0.91 |
200.0 to 224.9 | 0.99 |
225.0 or greater | 1.04 |

(2) Process factor.

--- | --- |
Process configuration | Process factor |
--- | --- |
Less than 8.49 | 0.75 |
6.5 to 7.49 | 0.82 |
7.5 to 8.49 | 0.82 |
8.5 to 9.49 | 1.00 |
9.5 to 10.49 | 1.10 |
10.5 to 10.99 | 1.20 |
11.0 to 11.49 | 1.30 |
11.5 to 11.99 | 1.42 |
12.0 to 12.49 | 1.54 |
12.5 to 12.99 | 1.68 |
13.0 or greater | 1.89 |

(3) See the comprehensive example in Subpart D, § 419.42(b)(3).

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart. (d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. (e) Effluent Limitations for Contaminated Runoff. The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart.
discharged after the application of the best conventional pollutant control
technology by a point source subject to
this subpart.

(1) If wastewater consists solely of
contaminated runoff and is not
commingled or treated with process
wastewater, it may be discharged if it
does not exceed 15 mg/l oil and grease
based upon an analysis of any single
grab or composite sample.

(2) If contaminated runoff is
commingled or treated with process
wastewater, or if wastewater consisting
solely of contaminated runoff which
exceeds 15 mg/l oil and grease is not
commingled or treated with any other
type of wastewater, the quantity of
pollutants discharged shall not exceed
the quantity determined by multiplying
the flow of contaminated runoff as
determined by the permit writer times
the concentrations listed in the
following table:

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>BCT effluent limitations for contaminated runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum for any 1 day</td>
</tr>
<tr>
<td></td>
<td>Average of daily values for 30</td>
</tr>
<tr>
<td></td>
<td>consecutive days shall not exceed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant or pollutant property</th>
<th>English units (pounds per 1,000 gallons of flow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD</td>
<td>0.40 0.22</td>
</tr>
<tr>
<td>TSS</td>
<td>0.38 0.18</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>0.13 0.067</td>
</tr>
<tr>
<td>pH</td>
<td>(<em>) (</em>)</td>
</tr>
</tbody>
</table>

1 Within the range of 6.0 to 9.0.

§ 419.46 and 419.56 [Amended]

20. In §§ 419.46(c) and 419.56(c),
"419.15(c)", is revised to read
"419.16(c)."

21. 40 CFR Part 419 is amended by
adding the following Appendix A:

Appendix A.—Processes Included in the
Determination of BAT Effluent Limitations
for Total Chromium, Hexavelent Chromium,
and Phenolic Compounds (4AAP)

**Crude Processes**
1. Atmospheric Crude Distillation
2. Crude Desalting
3. Vacuum Crude Distillation

**Cracking and Coking Processes**
4. Visbreaking
5. Thermal Cracking
6. Fluid Catalytic Cracking
7. Moving Bed Catalytic Cracking
8. Hydrocracking

15. Delayed Coking
16. Fluid Coking
54. Hydrotreating

**Asphalt Processes**
18. Asphalt Production
32. 200°F Softening Point Unfluxed Asphalt
43. Asphalt Oxidizing
89. Asphalt Emulsifying

**Lube Processes**
21. Hydrofining, Hydrofinishing, Lube
Hydrofining
23. White Oil Manufacture
24. Propylene Dewaxing, Propylene Deasphalting,
Propylene Fractioning, Propylene Resinsin
24. Dyesol, Solvent Treating, Solvent
Extraction, Duotreating, Solvent Dewaxing,
Solvent Deasphalting
25. Lube Vac Trr. Oil Fractionation, Batch
Still (Naphtha Strip), Bright Stock Treating
26. Centrifuge and Chilling
27. MEK Dewaxing, Ketone Dewaxing, MEK-
Toluene Dewaxing
28. Deoiling (wax)
29. Naphthenic Lubes Production
30. SCH Extraction
34. Wax Pressing
35. Wax Plant (with Neutral Separation)
36. Furfural Extraction
37. Clay Contacting—Percolation
38. Wax Sweating
39. Acid Treating
40. Phenol Extraction

**Reforming and Alkylation Processes**
8. H₂SO₄, Alkylation
12. Catalytic Reforming

[FR Doc. 85-16383 Filed 7-11-85; 8:45 am]