

ENVIRONMENTAL PROTECTION
AGENCY

[40 CFR Part 419]

PETROLEUM REFINING POINT SOURCE
CATEGORY

Proposed Effluent Limitation Guidelines
and New Source Standards

Notice is hereby given that effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources set forth in tentative form below are proposed by the Environmental Protection Agency (EPA) for the topping subcategory (Subpart A), low cracking subcategory (Subpart B), high cracking subcategory (Subpart C), petrochemical subcategory (Subpart D), lube subcategory (Subpart E), and integrated subcategory (Subpart F) of the petroleum refining category of point sources pursuant to sections 301, 304(b) and (c), 306(b) and 307(c) of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311, 1314(b) and (c), 1316(b) and 1317 (c); 86 Stat. 816 et seq.; Pub. L. 92-500) (the Act).

(a) *Legal authority.*—(1) *Existing point sources.* Section 301(b) of the Act requires the achievement by not later than July 1, 1977, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 304(b) of the Act.

Section 301(b) also requires the achievement by not later than July 1, 1983, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of best available technology economically achievable which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 304(b) of the Act.

Section 304(b) of the Act requires the Administrator to publish, within one year of enactment of the Act, regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of the best practicable control technology currently available and the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods and other alternatives. The regulations proposed herein set forth effluent limitations guidelines, pursuant to section 304(b) of the Act, for the petroleum refining source category.

(2) *New sources.* Section 306 of the Act requires the achievement by new sources of a Federal standard of performance providing for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control tech-

nology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

Section 306(b) (1) (B) of the Act requires the Administrator to propose regulations establishing Federal standards of performance for categories of new sources included in a list published pursuant to section 306(b) (1) (A) of the Act. The Administrator published in the FEDERAL REGISTER of January 16, 1973, (38 FR 1624) a list of 27 source categories, including the petroleum refining category. The regulations proposed herein set forth the standards of performance applicable to new sources for the petroleum refining category.

Section 307(c) of the Act requires the Administrator to promulgate pretreatment standards for new sources at the same time that standards of performance for new sources are promulgated pursuant to section 306. Sections 419.15, 419.25, 419.35, 419.45, 419.55 and 419.65 proposed below provide pretreatment standards for new sources within the petroleum refining category.

Section 304(c) of the Act requires the Administrator to issue to the States and appropriate water pollution control agencies information on the processes, procedures or operating methods which result in the elimination or reduction of the discharge of pollutants to implement standards of performance under section 306 of the Act. The development document referred to below provides, pursuant to section 304(c) of the Act, information on such processes, procedures or operating methods.

(b) *Summary and basis of proposed effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources.* (1) *General methodology.* The effluent limitations guidelines and standards of performance proposed herein were developed in the following manner. The point source category was first studied for the purpose of determining whether separate limitations and standards are appropriate for different segments within the category. This analysis included a determination of whether differences in raw material used, product produced, manufacturing process employed, age, size, waste water constituents and other factors require development of separate limitations and standards for different segments of the point source category. The raw waste characteristics for each such segment were then identified. This included an analysis of (1) the source, flow and volume of water used in the process employed and the sources of waste and waste waters in the operation; and (2) the constituents of all waste water. The constituents of the waste waters which should be subject to effluent limitations guidelines and standards of performance were identified.

The control and treatment technologies existing within each segment were identified. This included an identification of each distinct control and treatment technology, including both in-plant and end-of-process technologies, which are

existent or capable of being designed for each segment. It also included an identification of, in terms of the amount of constituents and the chemical, physical, and biological characteristics of pollutants, the effluent level resulting from the application of each of the technologies. The problems, limitations and reliability of each treatment and control technology were also identified. In addition, the non-water quality environmental impact, such as the effects of the application of such technologies upon other pollution problems, including air, solid waste, noise and radiation, was identified. The energy requirements of each control and treatment technology were determined as well as the cost of the application of such technologies.

The information, as outlined above, was then evaluated in order to determine what levels of technology constitute the best practicable control technology currently available, best available technology economically achievable and the best available demonstrated control technology, processes, operating methods, or other alternatives. In identifying such technologies, various factors were considered. These included the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements) and other factors.

The data upon which the above analysis was performed included EPA permit applications, EPA sampling and inspections, consultant reports, and industry submissions.

The pretreatment standards proposed herein are intended to be complementary to the pretreatment standards proposed for existing sources under Part 128 of this title. The bases for such standards are set forth in the FEDERAL REGISTER of July 19, 1973, 38 FR 19236. The provisions of Part 128 are equally applicable to sources which would constitute "new sources," under section 306 if they were to discharge pollutants directly to navigable waters, except for § 128.133. That section provides a pretreatment standard for "incompatible pollutants" which requires application of the "best practicable control technology currently available," subject to an adjustment for amounts of pollutants removed by the publicly owned treatment works. Since the pretreatment standards proposed herein apply to new sources, §§ 419.15, 419.25, 419.35, 419.45, 419.55 and 419.65 below amend § 128.133 to require application of the standard of performance for new sources rather than the "best practicable" standard applicable to existing sources under sections 301 and 304(b) of the Act.

(2) *Summary of conclusions with respect to the petroleum refining category of point sources.*—(1) *Categorization.* For the purpose of studying waste treatment and effluent limitations, the petroleum refining category was divided into dis-

crete subcategories which coincide with a breakdown of the category according to the flow of materials as outlined in the Development Document for the petroleum refining category.

The six subcategories for the petroleum refining industry are based on the raw waste load with respect to the type of refinery, process technology employed, and the waste severity from the operations. Other factors which were considered but did not affect the categorization include: age of refinery, size of refinery, treatability of waste waters and location. A description of the subcategories follows:

(A) *Subpart A—Topping Subcategory.* This subpart is applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping and catalytic reforming, whether or not the facility includes any processes other than topping and catalytic reforming. This subpart shall not be applicable to facilities which include processes specified in subparts B, C, D, E, and F. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(B) *Subpart B—Low Cracking Subcategory.* This subpart is applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming and cracking, when the non-recycle feedstock to the cracking and hydroprocessing processes is less than 50 percent of the total feedstock to the refinery, whether or not the facility includes any processes other than topping, catalytic reforming and cracking. This subpart shall not be applicable to facilities which include processes specified in subparts C, D, E, and F. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(C) *Subpart C—High Cracking Subcategory.* This subpart is applicable to the discharges process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use topping, catalytic reforming and cracking, when the non-recycle feedstock to the cracking and hydroprocessing processes is greater than 50 percent of the total feedstock to the refinery, whether or not the facility includes any processes other than topping catalytic reforming and cracking. This subpart shall not be applicable to facilities which include processes specified in subpart D, E, and F. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(D) *Subpart D—Petrochemical Subcategory.* This subpart is applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of

topping, catalytic reforming, cracking and petrochemical operations, with production of greater than 15 percent of the feedstock throughput in first generation petrochemicals and isomerization products (benzene, toluene, xylene, olefins, cyclohexane, etc.) or production of second generation petrochemicals, (alcohols, ketones, cumene, etc.), whether or not the facility includes any processes other than topping, catalytic reforming and cracking and petrochemical operations. This subpart shall not be applicable to facilities which include processes specified in subparts E and F. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(E) *Subpart E—Lube Subcategory.* This subpart is applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming, cracking and lubes, with the production of less than 12 percent of the feedstock throughput as lubes, whether or not the facility includes any processes other than topping, catalytic reforming, cracking and lubes. This subpart shall not be applicable to facilities which includes processes specified in subparts D and F. Refineries with greater than 12 percent lubes are being considered as specialty refineries and limits for them will be set at a later date. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(F) *Subpart F—Integrated Subcategory.* This subpart is applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming, cracking, petrochemical operations (as defined in subpart D) or lubes, whether or not the facility includes any processes other than topping, catalytic reforming, cracking, petrochemical operations and lubes. This subpart is also applicable to the waste water pollutants resulting from contaminated storm water runoff and from ballast water.

(ii) *Waste characteristics and sources.* The pollutants contained in raw waste waters resulting from the petroleum refining category include BOD₅, COD, organic carbon, suspended and dissolved solids, oil and grease, phenolic compounds, nitrogen compounds, sulfides, sulfites, chlorides, fluorides, chromium, zinc, lead, cyanides, acidity, alkalinity and other metallic ions. Large volumes of cooling water are required by the industry and heat is a potential problem. Eight pollutants are usually found in the petroleum refining industry in objectionable amounts in the raw waste. These are BOD₅, COD, TOC, suspended solids, oil and grease, phenolic compounds, ammonia and sulfides. In addition, objectionable amounts of chromium and zinc are often found in cooling tower blowdown, when these materials are used

as corrosion inhibitors. A qualitative summary of the process sources for the above parameters is outlined in the development document.

(iii) *Treatment and control technology.* In plant procedures to control pollution include: good housekeeping, control of spills and leaks, reduction and control of start-up and shut-down operations, reuse of waste water from one process in another, cooling towers, sour water strippers, phenol extraction or treatment, sewer segregation, and process changes.

End-of-pipe waste water treatment processes include: equalization, gravity separation, additional oil and solids removal (DAF, filters, etc.), biological treatment (oxidation ponds, aerated lagoons, activated sludge, tricking filters, etc.), polishing (filters, ponds), physical-chemical treatment (activated carbon, etc.).

(iv) *Definition of technology basis for BPCTCA, BATEA, and BADT.* Waste water treatment and control technologies have been studied for each subcategory of the industry to determine what is the best practicable control technology currently available, the best available technology economically achievable, and the best available demonstrated technology, processes, operating methods or other alternatives.

It was determined that each level of technology should be identical within the industry (all subcategories).

(A) *Best practicable control technology currently available (BPCTCA).*

(1) *Process and influent changes.* The following are practiced extensively throughout the industry and are considered as BPCTCA: installation of sour water strippers to reduce the sulfide and ammonia concentrations entering the treatment plant, elimination of once-through barometric condenser water by using surface condensers or recycle systems with oily water cooling towers, segregation of sewers, so that uncontaminated storm runoff and uncontaminated once through cooling waters are not treated normally with the process and other contaminated waters, and elimination of contaminated once-through cooling water, by monitoring and repair of surface condensers or by use of wet or dry recycle systems.

(2) *Waste water flow considerations.* In a petroleum refinery the waste water treatment plant should be used to treat only contaminated waters. All once-through cooling water or storm runoff which is uncontaminated should be separated, as it dilutes the contaminated waters and requires treatment of a greater flow. Flows for BPCTCA were based on the 50 percent probability of occurrence flows for plants practicing recycle or air cooling with less than 3 percent heat removal by once-through cooling water (on a dry weather basis). Recognizing the additional flows and waste loads associated with rain runoff and ballast waters, allocation for these added flows may be given based on strictly segregated runoff and ballast water.

(3) *Wastewater treatment (end of pipe).* BPCTCA is based on the existing

waste water treatment processes currently used in the petroleum refining industry. These consist of equalization and storm diversion; initial oil and solids removal using API separators or baffle plate separators; further oil and solids removal using clarifiers, dissolved air flotation, or filters; carbonaceous waste removal using activated sludge, aerated lagoons, oxidation ponds, trickling filter, activated carbon, or combinations of these; and filters (sand, dual media; or multi-media) following biological treatment methods.

(B) Best available technology economically achievable (BATEA). (1) *Process changes.* Water use can be reduced by extensive reuse and recycle. This is demonstrated by the fact that approximately 10 percent of the refineries presently have water flows which meet the BATEA waste water flows. Water conservation measures presently used include: use of air cooling equipment; reuse of sour water stripper bottoms in crude desalters; reuse of once-through cooling water as make-up to the water treatment plant; using waste water treatment plant effluent as cooling water, scrubber water, and influent to the water treatment plant; reuse of boiler condensate as boiler feedwater; recycle of water from coking operations; recycle of waste acids from alkylation units; recycle of overhead water in water washes; reuse of overhead accumulator water in desalters; use of closed compressor and pump cooling water system; reuse of heated water from the vacuum overhead condensers to heat the crude; use of rain runoff as cooling tower make-up or water treatment plant feed and others.

(2) *Waste water flow considerations.* The waste water flow reductions required for BATEA were determined by averaging, within each category, the flows from those refineries that currently have waste water flows less than the BPCTCA levels. There are 3 to 5 refineries in each subcategory that have flows less than or equal to the BATEA levels specified. These refineries range in size from 832-69,400 cu m/day (5,200-434,000 barrels/day); with cracking capacities ranging from 0 to 100 percent of crude capacity. Within this same group of refineries with low-water usage, there are refineries located in both high rainfall and dry areas (Washington and New Mexico) and areas of extreme temperatures (New Mexico and Texas to Alaska and Minnesota).

(3) *Wastewater treatment technology.* For BATEA the effluent from a BPCTCA level waste treatment plant is fed to an activated carbon unit. The data used were determined from pilot plant studies. It is recognized that as additional, actual performance data becomes available the BATEA treatability levels for activated carbon may be revised.

(C) *Best available demonstrated technology (BADT).* BADT is the basis for New Source Performance Standards (NSPS).

No major change in process technology is projected for new refineries. Therefore, the same waste water flow has been used for evaluating BADT as obtained from the BATEA.

(1) Process changes to be as described for BATEA.

(2) Waste water flow to be as described for BATEA.

(3) Waste treatment technology to be as described for BPCTCA.

Activated carbon is not being considered as BADT because it has not been sufficiently demonstrated within the industry at this time.

(v) *Variability.* The effluent from a properly designed and operated treatment plant changes continually due to (a) changes in product mix, production rate and reaction chemistry, which influence the composition of raw waste load and therefore its treatability; and (b) changes in biological factors which influence the efficiency of the treatment process. A common indicator of the strength of the discharge from a plant is the long-term average of the effluent load. By the use of data which show the variability in the effluent load, statistical analysis can be applied to compute short-term limits (monthly, or daily) which should not be exceeded provided that the plant is designed and run in the proper way to achieve the desired long-term average load. The levels of technology for BPCTCA, BATEA and BADT take into account this variability as determined from properly designed and operated treatment plants.

(vi) *Nonwater quality aspects.* The nonwater quality aspects of treatment and pollution control in this industry are basically related to solid waste and land utilization. The waste waters from the industry, and the treatment processes used, develop a considerable volume of solid wastes. Currently, the industry concentrates these wastes and disposes of them by one of the following methods: landfilling, landfarming, incineration and barging.

In general, noise levels from typical waste water treatment plants are not excessive. If incineration of waste sludges is employed, there is a potential for air pollution, principally particulates and possibly nitrogen oxides. There are no radioactive nuclides used within the industry, other than in instrumentation, so that no radiation problems will be encountered. Odors from the waste water treatment plants may cause occasional problems since waste waters are sometimes such that heavy, stable foams occur on aerated basins. But in general, odors are not expected to be a significant problem, especially since technology is available to control or eliminate them.

(vii) *Economic impact analysis.* The economic analysis has focused on both internal and external costs associated with the proposed levels of water pollution abatement.

The total investment and annual costs required for all subcategories to achieve the 1977 effluent limitations are estimated at \$1 billion and \$380 million, respectively.

The total cost of water pollution abatement has been related to the product selling price to determine the magnitude of either price increases, if these costs can be passed on, or decreases in pre-tax

profitability. Price increases of 5-6 cents per barrel¹ are expected, as a result of pollution abatement, by 1977 and 9-10 cents per barrel by 1983 (in the absence of the impact fee system).

External cost deals basically with the assessment of economic impact of the internal costs discussed above in terms of price increases, production curtailments or plant closures, resultant employment, community and regional impacts, international trade, and future industry growth. It should be noted that a precise study of economic impact is difficult due to numerous other economic forces at work within an industry, and because of the great variability experienced from plant to plant in such factors as pollution control costs, profitability, and return on investment. In an economic study such as this, it is not possible to deal with these factors on an individual plant basis.

It is not expected that any significant economic impact would result from imposing the 1977 and 1983 effluent limitations (Best Practicable Control Technology and Best Available Treatment Economically Achievable). Because of this conclusion, we judge that the proposed guidelines for 1977, 1983 and new sources are economically achievable. No price increases due to water pollution control are expected as a result of the change in refinery profitability which will be caused by implementation of the import license fee system. The economic viability of from 2 to 11 refineries accounting for 0.02 percent to 0.3 percent of current refining capacity will be threatened by the added burden of water pollution control costs. Possible, resultant job losses would be a maximum of 500 out of 150,000 current refinery employees. Since these refineries are located in several geographical areas, the community and regional impacts of even the highest estimate of job losses do not appear to be substantial. The domestic prices of crude end products, by mid-decade, will be determined by the impact license fee system; therefore, pollution control expenditures will have no effect on the future balance of payments for petroleum products.

The report entitled "Development Document for Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category" details the analysis undertaken in support of the regulations being proposed herein and is available for inspection in the EPA Information Center, Room 227, West Tower, Waterside Mall, Washington, D.C., at all EPA regional offices, and at State water pollution control offices. A supplementary analysis prepared for EPA of the possible economic effects of the proposed regulations is also available for inspection at these locations. Copies of both of these documents are being sent to persons or institutions affected by the proposed regulations, or who have placed themselves on a mailing list for this purpose (see EPA's advance notice

¹The wholesale cost of an average barrel of finished refinery product is \$5.70 as of September 1973.

of public review procedures, 38 FR 21202, August 6, 1973). An additional limited number of copies of both reports are available. Persons wishing to obtain a copy may write the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman.

(c) *Summary of public participation.* Prior to this publication, the agencies and groups listed below were consulted and given an opportunity to participate in the development of effluent limitations guidelines and standards proposed for the petroleum refining category. All participating agencies have been informed of project developments. An initial draft of the Development Document was sent to all participants and comments were solicited on that report. The following are the principal agencies and groups consulted: (1) Effluent Standards and Water Quality Information Advisory Committee (established under section 515 of the Act); (2) States: All except Idaho, South Dakota, Iowa, Nevada, Arizona, Maryland; (3) Territories/Commissions: New England Interstate Water Pollution Control Commission; Ohio River Valley Sanitation Commission; Guam Trust Territory of the Pacific Islands; Puerto Rico; Delaware River Basin Commission; Puerto Rico Land Administration; (4) American Petroleum Institute; (5) American Society of Mechanical Engineers; (6) American Society of Civil Engineers; (7) Hudson River Sloop Restoration, Inc.; (8) The Conservation Foundation; (9) Environmental Defense Fund; (10) National Resources Defense Council; (11) Water Pollution Control Federation; (12) National Wildlife Federation; (13) Department of the Interior; (14) Department of Commerce; (15) Department of the Treasury; (16) Department of Defense; (17) Water Resources Council.

The following are the principal agencies and groups from which responses were received: Effluent Standards and Water Quality Information Advisory Committee; States: Alaska, Arizona, California, Colorado, Florida, Georgia, Illinois, Michigan, Nebraska, New York, North Carolina, Texas, and Washington; The Water Resources Control Board; Water Pollution Control Federation; American Petroleum Institute; Shell Oil Company; Delaware River Basin Commission; National Wildlife Federation; Stephen Sabotka and Company; Department of Commerce; Department of Defense; and Department of the Treasury.

The comments were highly variable ranging from full approval to total rejection. The primary issues raised in the development of these proposed effluent limitations guidelines and standards of performance and the treatment of these issues are as follows:

(1) There were several comments on the subcategorization of the industry proposed in the draft report, which represents a change from the traditional API classification system. After an analysis of available data, the API D' and E

classifications which had been combined in the draft report were separated. In addition the lube subcategory was divided to show difference between the large refinery manufacturing lube oils and the small "specialty" lube oil manufacturer. Limits for the lube subcategory (greater than 12 percent lubes) are not being set at this time since the 19 refineries in this group are small specialty plants (comprising 0.8 percent of the total industry throughout). These refineries are, as a group, a special case when looking at the industry in terms of economics, land availability, age, feedstocks, etc. The limits for these refineries will be set at a later date. The division of the API "B" category into low and high cracking subcategories, based on percent cracking was reevaluated and is considered justifiable.

(2) Several commenters questioned the lack of additional allocation for ballast waters and storm runoff (the flow data was based on the API/EPA Refinery Survey which reports dry weather flow). Allocations are now included for both of these waste sources.

(3) Comments were received on the issue of the handling of "non-contact" once-through cooling water. Since totally excluding once-through cooling water from consideration (as requested by several commenters) would allow heavy contamination of these waters, it was decided to include them in the total allocation. Comments requesting the total elimination of once-through cooling waters were considered economically unjustifiable. Refineries with contaminated once-through cooling water could either monitor and clean up this water by repairing leaky heat exchangers or go to recycle cooling systems.

(4) The consideration of feedstocks as a subcategorization factor received several comments. An unsuccessful attempt was made to split the industry by feedstock used (sweet or sour crudes, natural gas liquids). As a result the effluent limitations set are based on sour crudes as the feedstock. This could be somewhat advantageous to those refineries using sweet crudes, but the effect will not be significant since the long range forecast is for a continuing and rapid decline in sweet crude availability.

(5) The inclusion of a polishing step such as filters or polishing ponds after biological treatment in BPTCA was questioned by a few commenters. It is felt that this additional treatment step is justified in the petroleum industry since several refineries already have polishing ponds; one has mixed media filters and several more are currently under construction. The mixed media filters are expected to result in a 50 percent reduction of TSS, 30-50 percent reduction of oil and the associated BOD, COD and insoluble metals removals, over those levels attainable by biological treatment alone. This additional treatment step is expected to raise the industries' costs for treatment as follows: capital—5 percent, operating costs—6 percent, and energy costs—7.5 percent.

(6) A point of some disagreement was the inclusion of total organic carbon (TOC) as one of the pollutant parameters being limited. The points raised ranged from "TOC is an untried and meaningless parameter" to "TOC is the only good measure of a refinery waste stream." TOC in fact has several advantages over BOD5 and COD which, in general, are used as a measure of the same waste characteristics. It is a test which is fast, accurate and reproducible, but does require an initial capital outlay for equipment of several thousand dollars. The meaning of the TOC value can be particularly important for discharges to estuaries and lakes with extended flush times; the BOD5 value may not reasonably reflect the oxygen demanding quality of the waste in these areas, while TOC should. In addition, the TOC is the best and fastest method of determining plant upset conditions and treatment plant operation.

Interested persons may participate in this rulemaking by submitting written comments in triplicate to the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman. Comments on all aspects of the proposed regulations are solicited. In the event comments are in the nature of criticisms as to the adequacy of data which is available, or which may be relied upon by the Agency, comments should identify and, if possible, provide any additional data which may be available and should indicate why such data is essential to the development of the regulations. In the event comments address the approach taken by the Agency in establishing an effluent limitation guideline or standard of performance, EPA solicits suggestions as to what alternative approach should be taken and why and how this alternative better satisfies the detailed requirements of sections 301, 304(b), 306 and 307 of the Act.

A copy of all public comments will be available for inspection and copying at the EPA Information Center, Room 227, West Tower, Waterside Mall, 401 M Street SW., Washington, D.C. A copy of preliminary draft contractor reports, the development document and economic study referred to above and certain supplementary materials supporting the study of the industry concerned will also be maintained at this location for public review and copying. The EPA information regulation, 40 CFR Part 2, provides that a reasonable fee may be charged for copying.

All comments received on or before January 14, 1974, will be considered. Steps previously taken by the Environmental Protection Agency to facilitate public response within this time period are outlined in the advance notice concerning public review procedures published on August 6, 1973 (38 FR 21202).

Dated: December 5, 1973.

JOHN QUARLES,
Acting Administrator.

PROPOSED RULES

PART 419—EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES AND STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES FOR THE PETROLEUM REFINING POINT SOURCE CATEGORY

Subpart A—Topping Subcategory

- Sec. 419.10 Applicability; description of the topping subcategory.
- 419.11 Specialized definitions.
- 419.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
- 419.14 Standards of performance for new sources.
- 419.15 Pretreatment standards for new sources.

Subpart B—Low Cracking Subcategory

- 419.20 Applicability; description of the low cracking subcategory.
- 419.21 Specialized definitions.
- 419.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology achievable.
- 419.24 Standards of performance for new sources.
- 419.25 Pretreatment standards for new sources.

Subpart C—High Cracking Subcategory

- 419.30 Applicability; description of the high cracking subcategory.
- 419.31 Specialized definitions.
- 419.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
- 419.34 Standards of performance for new sources.
- 419.35 Pretreatment standards for new sources.

Subpart D—Petrochemical Subcategory

- 419.40 Applicability; description of the petrochemical subcategory.
- 419.41 Specialized definitions.
- 419.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
- 419.44 Standards of performance for new sources.
- 419.45 Pretreatment standards for new sources.

Subpart E—Lube Subcategory

- 419.50 Applicability; description of the lube subcategory.
- 419.51 Specialized definitions.

- Sec. 419.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
- 419.54 Standards of performance for new sources.
- 419.55 Pretreatment standards for new sources.

Subpart F—Integrated Subcategory

- 419.60 Applicability; description of the integrated subcategory.
- 419.61 Specialized definitions.
- 419.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
- 419.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
- 419.64 Standards of performance for new sources.
- 419.65 Pretreatment standards for new sources.

Subpart A—Topping Subcategory

- § 419.10 Applicability; description of the topping subcategory.

The provisions of this subpart are applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping and catalytic reforming whether or not the facility includes any processes other than topping and catalytic reforming. This subpart shall not be applicable to facilities which include processes specified in subparts B, C, D, E, and F of this part. Allocations for the waste water pollutant discharges resulting from contaminated storm water runoff and ballast water are also applicable to this subpart.

- § 419.11 Specialized definitions.

For the purposes of this subpart:

(a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

(b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.

(c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns, once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.

(d) The term "runoff" shall mean the flow of storm water (daily average flow).

(e) The term "ballast" shall mean the flow of waters, from a ship, which is to be treated at the refinery (daily average flow).

(f) The term "feedstock" shall mean the crude oil and natural gas liquids feed to the topping units.

(g) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217;

(h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232;

(i) The following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended nonfilterable solids; (v) NH3 shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram(s); (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pound(s); (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cu m shall mean one cubic meter; and (xiv) feed shall mean feedstock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristics	Effluent limitation
BOD5 -----	Maximum for any one day 9.0 kg/kcu m of feed (3.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 7.3 kg/kcu m of feed (2.6 lb/Mbbl of feed).
COD-----	Maximum for any one day 31.7 kg/kcu m of feed (11.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 28.3 kg/kcu m of feed (10.0 lb/Mbbl of feed).
TOC-----	Maximum for any one day 7.7 kg/kcu m of feed (2.7 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.3 kg/kcu m of feed (2.2 lb/Mbbl of feed).
TSS-----	Maximum for any one day 5.8 kg/kcu m of feed (2.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 4.6 kg/kcu m of feed (1.6 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Oil and grease.	Maximum for any one day 2.8 kg/kcu m of feed (1.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.2 kg/kcu m of feed (0.8 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.070 kg/kcu m of feed (0.025 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.048 kg/kcu m of feed (0.017 lb/Mbbl of feed).
NH3-----	Maximum for any one day 2.0 kg/kcu m of feed (0.70 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.5 kg/kcu m of feed (0.53 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.07 kg/kcu m of feed (0.022 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kcu m of feed (0.014 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.14 kg/kcu m of feed (0.050 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.115 kg/kcu m of feed (0.040 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0028 kg/kcu m of feed (0.0010 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0023 kg/kcu m of feed (0.00080 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.28 kg/kcu m of feed (0.10 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.23 kg/kcu m of feed (0.080 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) The following are allocations, over and above those in paragraph (a) of this section, to apply where appropriate. They constitute the quantity or quality of pollutants or pollutant properties which may be discharged, after application of the best practicable control technology currently available, by a point source subject to the provisions of this subpart:

(1) *Runoff*. The allocation being allowed for storm runoff flow, as kg/cu m (lb/Mgal), shall be based solely on that storm flow which passes through the treatment system. All additional storm runoff, that has been segregated from the main waste stream, shall not show a visible sheen or exceed a TOC concentration of 15 mg/l when discharged.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 0.031 kg/cu m of flow (0.26 lb/Mgal of flow).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5—Continued	Maximum average of daily values for any period of thirty consecutive days 0.025 kg/cu m of flow (0.21 lb/Mgal of flow).
COD-----	Maximum for any one day 0.24 kg/cu m of flow (2.0 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.19 kg/cu m of flow (1.6 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.043 kg/cu m of flow (0.36 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.035 kg/cu m of flow (0.29 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.020 kg/cu m of flow (0.17 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.016 kg/cu m of flow (0.13 lb/Mgal of flow).
Oil and grease.	Maximum for any one day 0.010 kg/cu m of flow (0.084 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0080 kg/cu m of flow (0.067 lb/Mgal of flow).
pH-----	Within the range 6.0 to 9.0.

(2) *Ballast*. The allocation being allowed for ballast water flow, as kg/cu m (lb/Mgal), shall be based on those ballast waters treated at the refinery.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 0.031 kg/cu m of flow (0.26 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.025 kg/cu m of flow (0.21 lb/Mgal of flow).
COD-----	Maximum for any one day 0.30 kg/cu m of flow (2.5 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.24 kg/cu m of flow (2.0 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.043 kg/cu m of flow (0.36 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.035 kg/cu m of flow (0.29 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.020 kg/cu m of flow (0.17 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.016 kg/cu m of flow (0.13 lb/Mgal of flow).
Oil and grease.	Maximum for any one day 0.010 kg/cu m of flow (0.084 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0080 kg/cu m of flow (0.067 lb/Mgal of flow).
pH-----	Within the range of 6.0 to 9.0.

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

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

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 1.7 kg/kcu m of feed (0.61 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.4 kg/kcu m of feed (0.50 lb/Mbbl of feed).
COD-----	Maximum for any one day 4.5 kg/kcu m of feed (1.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.7 kg/kcu m of feed (1.3 lb/Mbbl of feed).
TOC-----	Maximum for any one day 4.9 kg/kcu m of feed (1.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.1 kg/kcu m of feed (1.1 lb/Mbbl of feed).
TSS-----	Maximum for any one day 1.6 kg/kcu m of feed (0.53 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.3 kg/kcu m of feed (0.46 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 0.34 kg/kcu m of feed (0.12 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.28 kg/kcu m of feed (0.10 lb/Mbbl of feed).
Phenols-----	Maximum for any one day (0.0025 lb/Mbbl of feed). (0.0026 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0050 kg/kcu m of feed (0.0018 lb/Mbbl of feed).
NH3-----	Maximum for any one day 0.45 kg/kcu m of feed (0.16 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.24 kg/kcu m of feed (0.12 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.037 kg/kcu m of feed (0.013 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.024 kg/kcu m of feed (0.0034 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.035 kg/kcu m of feed (0.030 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.023 kg/kcu m of feed (0.023 lb/Mbbl of feed).

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<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Cr6-----	Maximum for any one day 0.0016 kg/kcu m of feed (0.00058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0013 kg/kcu m of feed (0.00046 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.16 kg/kcu m of feed (0.058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) The following are allocations, over and above those in paragraph (a) of this section, to apply where appropriate. They constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best available technology economically achievable by a point source subject to the provisions of this subpart:

(1) *Runoff*. The allocation being allowed for storm runoff flow, as kg/cu m (lb/Mgal), shall be based solely on that storm flow which passes through the treatment system. All additional storm runoff, that has been segregated from the main waste stream, shall not show a visible sheen or exceed a TOC concentration of 15 mg/l when discharged.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 0.011 kg/cu m of flow (0.088 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0085 kg/cu m of flow (0.071 lb/Mgal of flow).
COD-----	Maximum for any one day 0.028 kg/cu m of flow (0.23 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.023 kg/cu m of flow (0.19 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.024 kg/cu m of flow (0.20 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.019 kg/cu m of flow (0.16 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.010 kg/cu m of flow (0.083 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0079 kg/cu m of flow (0.066 lb/Mgal of flow).
Oil and grease.	Maximum for any one day 0.0020 kg/cu m of flow (0.017 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0016 kg/cu m of flow (0.014 lb/Mgal of flow).
pH-----	Within the range of 6.0 to 9.0.

(2) *Ballast*. The allocation being allowed for ballast water flow, as kg/cu m

(lb/Mgal), shall be based on those ballast waters treated at the refinery.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Within the range 6.0 to 9.0. 0.011 kg/cu m of flow (0.088 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0085 kg/cu m of flow (0.071 lb/Mgal of flow).
COD-----	Maximum for any one day 0.035 kg/cu m of flow (0.29 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.028 kg/cu m of flow (0.23 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.024 kg/cu m of flow (0.20 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.019 kg/cu m of flow (0.16 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.010 kg/cu m of flow (0.083 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0079 kg/cu m of flow (0.066 lb/Mgal of flow).
Oil and grease.	Maximum for any one day 0.0020 kg/cu m of flow (0.017 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0016 kg/cu m of flow (0.014 lb/Mgal of flow).

§ 419.14 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 5.2 kg/kcu m of feed (1.85 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 4.3 kg/kcu m of feed (1.5 lb/Mbbl of feed).
COD-----	Maximum for any one day 18.7 kg/kcu m of feed (6.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 15.0 kg/kcu m of feed (5.3 lb/Mbbl of feed).
TOC-----	Maximum for any one day 4.5 kg/kcu m of feed (1.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.7 kg/kcu m of feed (1.3 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
TSS-----	Maximum for any one day 3.3 kg/kcu m of feed (1.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.6 kg/kcu m of feed (0.93 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 1.6 kg/kcu m of feed (0.68 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.3 kg/kcu m of feed (0.46 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.040 kg/kcu m of feed (0.014 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.028 kg/kcu m of feed (0.0099 lb/Mbbl of feed).
NH3-----	Maximum for any one day 1.1 kg/kcu m of feed (0.40 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.85 kg/kcu m of feed (0.30 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.037 kg/kcu m of feed (0.013 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.023 kg/kcu m of feed (0.0081 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.085 kg/kcu m of feed (0.030 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.065 kg/kcu m of feed (0.023 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0016 kg/kcu m of feed (0.00058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0013 kg/kcu m of feed (0.00046 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.16 kg/kcu m of feed (0.058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) The following are allocations, over and above those in (a) above, to apply where appropriate. They constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology by a new point source subject to the provisions of this subpart:

(1) *Runoff*. The allocation being allowed for storm runoff flow, as kg/cu m (lb/Mgal), shall be based solely on that storm flow which passes through the treatment system. All additional storm runoff, that has been segregated from

the main waste stream, shall not show a visible sheen or exceed a TOC concentration of 15 mg/l when discharged.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 0.031 kg/cu m of flow (0.26 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.025 kg/cu m of flow (0.21 lb/Mgal of flow).
COD-----	Maximum for any one day 0.11 kg/cu m of flow (0.94 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.091 kg/cu m of flow (0.76 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.028 kg/cu m of flow (0.23 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.023 kg/cu m of flow (0.19 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.020 kg/cu m of flow (0.17 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.016 kg/cu m of flow (0.13 lb/Mgal of flow).
Oil and grease..	Maximum for any one day 0.010 kg/cu m of flow (0.083 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0080 kg/cu m of flow (0.066 lb/Mgal of flow).
pH-----	Within the range 6.0 to 9.0.

(2) *Ballast*. The allocation being allowed for ballast water flow, as kg/cu m (lb/Mgal), shall be based on those ballast waters treated at the refinery.

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 0.031 kg/cu m of flow (0.26 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.025 kg/cu m of flow (0.21 lb/Mgal of flow).
COD-----	Maximum for any one day 0.14 kg/cu m of flow (1.2 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.11 kg/cu m of flow (0.95 lb/Mgal of flow).
TOC-----	Maximum for any one day 0.028 kg/cu m of flow (0.23 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.023 kg/cu m of flow (0.19 lb/Mgal of flow).
TSS-----	Maximum for any one day 0.020 kg/cu m of flow (0.17 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.016 kg/cu m of flow (0.13 lb/Mgal of flow).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Oil and grease.	Maximum for any one day 0.010 kg/cu m of flow (0.083 lb/Mgal of flow). Maximum average of daily values for any period of thirty consecutive days 0.0080 kg/cu m of flow (0.066 lb/Mgal of flow).

§ 419.15 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the topping subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this title except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 419.14 of this title *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart B—Low Cracking Subcategory
§ 419.20 Applicability; description of the low cracking subcategory.

The provisions of this subpart are applicable to discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming and cracking, when the non-recycle feed to the cracking and the hydroprocessing processes is less than 50 percent of the feedstock throughput, whether or not the facility includes any processes other than topping, catalytic reforming and cracking. This subpart shall not be applicable to facilities which include processes specified in subparts C, D, E, and F of this part. Allocations for the waste water pollutant discharges resulting from storm water runoff and ballast water are also applicable to this subpart.

§ 419.21 Specialized definitions.

For the purposes of this subpart:

- (a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.
- (b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.
- (c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns,

once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.

(d) The term "runoff" shall mean the flow of storm water (daily average flow).

(e) The term "ballast" shall mean the flow of waters, from a ship, which is to be treated at the refinery (daily average flow).

(f) The term "feed" shall mean the crude oil and natural gas liquids feed to the topping units.

(g) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217.

(h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232.

(i) The following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended nonfilterable solids; (v) NH3 shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram; (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pounds; (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cu m shall mean one cubic meter; and (xiv) feed shall mean feedstock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 12.6 kg/kcu m of feed (4.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 10.2 kg/kcu m of feed (3.6 lb/Mbbl of feed).
COD-----	Maximum for any one day 78.1 kg/kcu m of feed (27.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 62.5 kg/kcu m of feed (22.1 lb/Mbbl of feed).

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<i>Effluent characteristics</i>	<i>Effluent limitation</i>
TOC -----	Maximum for any one day 17.2 kg/kcu m of feed (6.1 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 14.0 kg/kcu m of feed (4.9 lb/Mbbl of feed).
TSS -----	Maximum for any one day 8.0 kg/kcu m of feed (2.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.4 kg/kcu m of feed (2.2 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 4.0 kg/kcu m of feed (1.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.2 kg/kcu m of feed (1.1 lb/Mbbl of feed).
Phenols -----	Maximum for any one day 0.096 kg/km ³ of feed (0.034 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.088 kg/kcu m of feed (0.024 lb/Mbbl of feed).
NH ₃ -----	Maximum for any one day 4.0 kg/kcu m of feed (1.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.0 kg/kcu m of feed (1.1 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.09 kg/kcu m of feed (0.031 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.055 kg/kcu m of feed (0.020 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.20 kg/kcu m of feed (0.070 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.16 kg/kcu m of feed (0.056 lb/Mbbl of feed).
Cr6 -----	Maximum for any one day 0.0040 kg/kcu m of feed (0.0014 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0032 kg/kcu m of feed (0.0011 lb/Mbbl of feed).
Zinc -----	Maximum for any one day 0.40 kg/kcu m of feed (0.14 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.32 kg/kcu m of feed (0.11 lb/Mbbl of feed).
pH -----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.12(b) (1) and (2).

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

(a) The following limitations constitute the quantity or quality of pollut-

ants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD ₅ -----	Maximum for any one day 2.7 kg/kcu m of feed (0.97 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.2 kg/kcu m of feed (0.78 lb/Mbbl of feed).
COD -----	Maximum for any one day 15.8 kg/kcu m of feed (5.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 12.7 kg/kcu m of feed (4.5 lb/Mbbl of feed).
DO _L -----	Maximum for any one day 6.2 kg/kcu m of feed (2.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.1 kg/kcu m of feed (1.8 lb/Mbbl of feed).
TSS -----	Maximum for any one day 2.6 kg/kcu m of feed (0.92 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.1 kg/kcu m of feed (0.74 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 0.51 kg/kcu m of feed (0.18 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kcu m of feed (0.14 lb/Mbbl of feed).
Phenols -----	Maximum for any one day 0.012 kg/kcu m of feed (0.0043 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0084 kg/kcu m of feed (0.0030 lb/Mbbl of feed).
NH ₃ -----	Maximum for any one day 1.0 kg/kcu m of feed (0.36 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.76 kg/kcu m of feed (0.27 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.058 kg/kcu m of feed (0.020 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.036 kg/kcu m of feed (0.013 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.105 kg/kcu m of feed (0.037 lb/Mbbl of feed).
Cr6 -----	Maximum for any one day 0.0025 kg/kcu m of feed (0.00090 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0020 kg/kcu m of feed (0.00072 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Zinc -----	Maximum for any one day 0.25 kg/kcu m of feed (0.090 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kcu m of feed (0.072 lb/Mbbl of feed).
pH -----	Within the range of 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.13(b) (1) and (2).

§ 419.24 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD ₅ -----	Maximum for any one day 8.3 kg/kcu m of feed (2.9 lb/Mbbl of feed). Maximum average of daily value for any period of thirty consecutive days 5.8 kg/kcu m of feed (2.4 lb/Mbbl of feed).
COD -----	Maximum for any one day 50.4 kg/kcu m of feed (17.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 40.2 kg/kcu m of feed (14.2 lb/Mbbl of feed).
TOC -----	Maximum for any one day 11.3 kg/kcu m of feed (4.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 9.3 kg/kcu m of feed (3.3 lb/Mbbl of feed).
TSS -----	Maximum for any one day 5.2 kg/kcu m of feed (1.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 4.2 kg/kcu m of feed (1.6 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 2.6 kg/kcu m of feed (0.92 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.1 kg/kcu m of feed (0.74 lb/Mbbl of feed).
Phenols -----	Maximum for any one day 0.082 kg/kcu m of feed (0.022 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.045 kg/kcu m of feed (0.016 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
NH ₃ -----	Maximum for any one day 2.5 kg/kcu m of feed (0.90 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.9 kg/kcu m of feed (0.68 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.057 kg/kcu m of feed (0.020 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.037 kg/kcu m of feed (0.013 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.105 kg/kcu m of feed (0.037 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0025 kg/kcu m of feed (0.00090 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0020 kg/kcu m of feed (0.00072 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.25 kg/kcu m of feed (0.090 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kcu m of feed (0.072 lb/Mbbl of feed).
pH-----	Within the range of 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.14(b) (1) and (2).

§ 419.25 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the low cracking subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.133, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 419.24 of this title, *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart C—High Cracking Subcategory

§ 419.30 Applicability; description of the high cracking subcategory.

The provisions of this subpart are applicable to the discharges of process

waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming and cracking, when the non-recycle feed to the cracking and hydroprocessing processes is greater than 50 percent of the feed throughput, whether or not the facility includes any processes other than topping, catalytic reforming and cracking. This subpart shall not be applicable to facilities which include processes specified in subparts D, E, and F. Allocations for the waste water pollutant discharges resulting from contaminated storm water runoff and ballast water are also applicable to this subpart.

§ 419.31 Specialized definitions.

- For the purposes of this subpart:
- (a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.
 - (b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.
 - (c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns, once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.
 - (d) The term "runoff" shall mean the flow of storm water (daily average flow).
 - (e) The term "ballast" shall mean the flow of waters, from a ship, which is to be treated at the refinery (daily average flow).
 - (f) The term "feed" shall mean the crude oil and natural gas liquids feed to the topping units.
 - (g) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217;
 - (h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232;
 - (i) The following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended nonfilterable solids; (v) NH₃ shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram; (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pounds; (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cu m shall mean one cubic meter; and (xiv) feed shall mean feedstock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 16.7 kg/kcu m of feed (5.9 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 13.5 kg/kcu m of feed (4.4 lb/Mbbl of feed).
COD-----	Maximum for any one day 135.8 kg/kcu m of feed (48.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 108.7 kg/kcu m of feed (38.4 lb/Mbbl of feed).
TOC-----	Maximum for any one day 22.6 kg/kcu m of feed (8.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 18.4 kg/kcu m of feed (6.5 lb/Mbbl of feed).
TSS-----	Maximum for any one day 10.2 kg/kcu m of feed (3.5 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 8.2 kg/kcu m of feed (2.9 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 5.0 kg/kcu m of feed (1.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 4.0 kg/kcu m of feed (1.4 lb/Mbbl of feed).
Phenols ----	Maximum for any one day 0.125 kg/kcu m of feed (0.044 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.88 kg kcu m of feed (0.031 lb/Mbbl of feed).
NH ₃ -----	Maximum for any one day 9.2 kg/kcu m of feed (3.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.9 kg/kcu m of feed (2.4 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.11 kg/kcu m of feed (0.040 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kcu m of feed (0.025 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.25 kg/kcu m of feed (0.088 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kcu m of feed (0.070 lb/Mbbl of feed).

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<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Cr6 -----	Maximum for any one day 0.0051 kg/kcu m of feed (0.0018 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0041 kg/kcu m of feed (0.0014 lb/Mbbl of feed).
Zinc -----	Maximum for any one day 0.51 kg/kcu m of feed (0.18 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.41 kg/kcu m of feed (0.14 lb/Mbbl of feed).
pH -----	Within the range of 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.12(b) (1) and (2).

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

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

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5 -----	Maximum for any one day 3.5 kg/kcu m of feed (1.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.8 kg/kcu m of feed (0.99 lb/Mbbl of feed).
COD -----	Maximum for any one day 25.5 kg/kcu m of feed (9.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 20.4 kg/kcu m of feed (7.2 lb/Mbbl of feed).
TOC -----	Maximum for any one day 8.2 kg/kcu m of feed (2.9 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.5 kg/kcu m of feed (2.3 lb/Mbbl of feed).
TSS -----	Maximum for any one day 0.3 kg/kcu m of feed (1.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.6 kg/kcu m of feed (0.93 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 0.68 kg/kcu m of feed (0.24 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.54 kg/kcu m of feed (0.19 lb/Mbbl of feed).
Phenols -----	Maximum for any one day 0.0155 kg/kcu m of feed (0.0055 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
NH3 -----	Maximum for any one day 1.6 kg/kcu m of feed (0.58 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.3 kg/kcu m of feed (0.46 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.075 kg/kcu m of feed (0.026 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.048 kg/kcu m of feed (0.017 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.16 kg/kcu m of feed (0.058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed).
Cr6 -----	Maximum for any one day 0.0034 kg/kcu m of feed (0.0012 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0026 kg/kcu m of feed (0.00092 lb/Mbbl of feed).
Zinc -----	Maximum for any one day 0.34 kg/kcu m of feed (0.12 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.26 kg/kcu m of feed (0.092 lb/Mbbl of feed).
pH -----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.13(b) (1) and (2).

§ 419.34 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5 -----	Maximum for any one day 10.8 kg/kcu m of feed (3.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 8.8 kg/kcu m of feed (3.1 lb/Mbbl of feed).
COD -----	Maximum for any one day 90.6 kg/kcu m of feed (32.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 75.3 kg/kcu m of feed (25.6 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
TOC -----	Maximum for any one day 14.4 kg/kcu m of feed (5.1 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 11.9 kg/kcu m of feed (4.3 lb/Mbbl of feed).
TSS -----	Maximum for any one day 6.8 kg/kcu m of feed (2.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.4 kg/kcu m of feed (1.9 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 3.3 kg/kcu m of feed (1.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.6 kg/kcu m of feed (0.93 lb/Mbbl of feed).
Phenols -----	Maximum for any one day 0.082 kg/kcu m of feed (0.029 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.057 kg/kcu m of feed (0.020 lb/Mbbl of feed).
NH3 -----	Maximum for any one day 6.2 kg/kcu m of feed (2.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 4.7 kg/kcu m of feed (1.7 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.074 kg/kcu m of feed (0.026 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.048 kg/kcu m of feed (0.017 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.16 kg/kcu m of feed (0.058 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed).
Cr6 -----	Maximum for any one day 0.0034 kg/kcu m of feed (0.0012 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0026 kg/kcu m of feed (0.00092 lb/Mbbl of feed).
Zinc -----	Maximum for any one day 0.34 kg/kcu m of feed (0.12 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.26 kg/kcu m of feed (0.092 lb/Mbbl of feed).
pH -----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.14(b) (1) and (2).

§ 419.35 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the high cracking subcategory, which is an industrial user of a publicly

owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 419.34 of this title, *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart D—Petrochemical Subcategory

§ 419.40 Applicability; description of the petrochemical subcategory.

The provisions of this subpart are applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming, cracking and petrochemical operations, with production of greater than 15 percent of the feed throughput in first generation petrochemicals and isomerization products (BTX, olefins, cyclohexane, etc.) or production of second generation petrochemicals (alcohols, ketones, cumene, etc.), whether or not the facility includes any processes other than topping, catalytic reforming, cracking and petrochemical operations. This subpart shall not be applicable to facilities which include processes specified in subparts E and F of this part. Allocations for the waste water pollutant discharges resulting from contaminated storm water runoff and ballast water are also applicable to this subpart.

§ 419.41 Specialized definitions.

For the purposes of this subpart:

(a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

(b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.

(c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns, once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.

(d) The term "runoff" shall mean the flow of storm water (daily average flow).

(e) The term "ballast" shall mean the flow of waters, from a ship, which is to be treated at the refinery (daily average flow).

(f) The term "feed" shall mean the crude oil and natural gas liquids feed to the topping units.

(g) The term "oil and grease" shall mean those components of a waste water

amenable to measurement by the method described in *Methods for Chemical Analysis of Water and Wastes*, 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217;

(h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232;

(i) the following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended nonfilterable solids; (v) NH3 shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram; (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pounds; (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cut me shall mean one cubic meter; and (xiv) feed shall mean feed-stock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 19.1 kg/kcu m of feed (6.7 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 15.5 kg/kcu m of feed (5.4 lb/Mbbl of feed).
COD-----	Maximum for any one day 118.9 kg/kcu m of feed (42.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 95.1 kg/kcu m of feed (33.6 lb/Mbbl of feed).
TOC-----	Maximum for any one day 25.8 kg/kcu m of feed (9.1 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 21.0 kg/kcu m of feed (7.4 lb/Mbbl of feed).
TSS-----	Maximum for any one day 12.0 kg/kcu m of feed (4.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 9.6 kg/kcu m of feed (3.4 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 6.2 kg/kcu m of feed (2.2 lb/Mbbl of feed).

Effluent characteristics *Effluent limitation*
Oil and grease—Continued

	Maximum average of daily values for any period of thirty consecutive days 5.0 kg/kcu m of feed (1.8 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.158 kg/kcu m of feed (0.055 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.110 kg/kcu m of feed (0.039 lb/Mbbl of feed).
NH3 -----	Maximum for any one day 13.6 kg/kcu m of feed (4.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 10.2 kg/kcu m of feed (3.6 lb/Mbbl of feed).
Sulfide -----	Maximum for any one day 0.13 kg/kcu m of feed (0.046 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.085 kg/kcu m of feed (0.029 lb/Mbbl of feed).
CrT -----	Maximum for any one day 0.235 kg/kcu m of feed (0.104 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.235 kg/kcu m of feed (0.083 lb/Mbbl of feed).
Cr6 -----	Maximum for any one day 0.0057 kg/kcu m of feed (0.0020 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0045 kg/kcu m of feed (0.0016 lb/Mbbl of feed).
Zinc -----	Maximum for any one day 0.57 kg/kcu m of feed (0.20 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.45 kg/kcu m of feed (0.16 lb/Mbbl of feed).
pH -----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.12(b) (1) and (2).

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

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

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5 -----	Maximum for any one day 3.7 kg/kcu m of feed (1.32 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 3.0 kg/kcu m of feed (1.07 lb/Mbbl of feed).

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<i>Effluent characteristics</i>	<i>Effluent limitation</i>
COD -----	Maximum for any one day 14.2 kg/kcu m of feed (5.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 11.3 kg/kcu m of feed (4.0 lb/Mbbl of feed).
TOC -----	Maximum for any one day 8.5 kg/kcu m of feed (3.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 7.1 kg/kcu m of feed (2.5 lb/Mbbl of feed).
TSS -----	Maximum for any one day 3.6 kg/kcu m of feed (1.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.8 kg/kcu m of feed (1.0 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 0.74 kg/kcu m of feed (0.26 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.59 kg/kcu m of feed (0.21 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.017 kg/kcu m of feed (0.0060 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.012 kg/kcu m of feed (0.0042 lb/Mbbl of feed).
NH3-----	Maximum for any one day 3.3 kg/kcu m of feed (1.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.5 kg/kcu m of feed (0.87 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.12 kg/kcu m of feed (0.042 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.075 kg/kcu m of feed (0.027 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.175 kg/kcu m of feed (0.062 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.14 kg/kcu m of feed (0.050 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0035 kg/kcu m of feed (0.00124 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0028 kg/kcu m of feed (0.00099 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.35 kg/kcu m of feed (0.124 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.28 kg/kcu m of feed (0.099 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically

the same as for Subpart A § 419.13 (b) (1) and (2).

§ 419.44 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitations</i>
BOD5-----	Maximum for any one day 11.3 kg/kcu m of feed (4.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 9.1 kg/kcu m of feed (3.2 lb/Mbbl of feed).
COD-----	Maximum for any one day 71.3 kg/kcu m of feed (25.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 57.2 kg/kcu m of feed (20.2 lb/Mbbl of feed).
TOC-----	Maximum for any one day 16.3 kg/kcu m of feed (5.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 12.5 kg/kcu m of feed (4.4 lb/Mbbl of feed).
TSS-----	Maximum for any one day 7.4 kg/kcu m of feed (2.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.9 kg/kcu m of feed (2.1 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 3.6 kg/kcu m of feed (1.3 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.8 kg/kcu m of feed (1.0 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.085 kg/kcu m of feed (0.030 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.059 kg/kcu m of feed (0.021 lb/Mbbl of feed).
NH3-----	Maximum for any one day 7.9 kg/kcu m of feed (2.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.9 kg/kcu m of feed (2.1 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.079 kg/kcu m of feed (0.028 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.051 kg/kcu m of feed (0.018 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
CrT-----	Maximum for any one day 0.175 kg/kcu m of feed (0.062 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.14 kg/kcu m of feed (0.050 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0035 kg/kcu m of feed (0.00124 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0028 kg/kcu m of feed (0.00099 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.35 kg/kcu m of feed (0.124 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.28 kg/kcu m of feed (0.099 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.14(b) (1) and (2).

§ 419.45 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the petrochemical subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 419.44 of this title, *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart E—Lube Subcategory

§ 419.50 Applicability; description of the lube subcategory.

The provisions of this subpart are applicable to the discharge of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming, cracking and lubes, with the production of less than 12 percent of the feed throughput as lubes, whether or not the facility includes any processes other than topping, catalytic reforming, cracking and lubes. This subpart shall not be applicable to facilities which include processes specified in subparts D and E of this part. Refineries with greater than 12 percent lubes are being considered specialty re-

fineries and are to be handled on an individual basis. Allocations for the waste water pollutant discharges resulting from contaminated storm water runoff and ballast water are also applicable to this subpart.

§ 419.51 Specialized definitions.

For the purposes of this subpart:

(a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

(b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.

(c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns, once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.

(d) The term "runoff" shall mean the flow of storm water (daily average flow).

(e) The term "ballast" shall mean the flow of waters, from a ship, which is to be treated at the refinery (daily average flow).

(f) The term "feed" shall mean the crude oil and natural gas liquids feed to the topping units.

(g) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217;

(h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232;

(i) The following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended non-filterable solids; (v) NH3 shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram; (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pounds; (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cu m shall mean one cubic meter; and (xiv) feed shall mean feedstock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 22.7 kg/kcu m of feed (8.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 18.4 kg/kcu m of feed (6.5 lb/Mbbl of feed).
COD-----	Maximum for any one day 190.7 kg/kcu m of feed (67.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 152.6 kg/kcu m of feed (53.9 lb/Mbbl of feed).
TOC-----	Maximum for any one day 30.8 kg/kcu m of feed (10.9 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 25.0 kg/kcu m of feed (8.8 lb/Mbbl of feed).
TSS-----	Maximum for any one day 17.6 kg/kcu m of feed (6.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 14.1 kg/kcu m of feed (5.0 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 8.6 kg/kcu m of feed (3.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.9 kg/kcu m of feed (2.4 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.211 kg/kcu m of feed (0.074 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.150 kg/kcu m of feed (0.053 lb/Mbbl of feed).
NH3-----	Maximum for any one day 9.2 kg/kcu m of feed (3.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.9 kg/kcu m of feed (2.4 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.20 kg/kcu m of feed (0.066 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kcu m of feed (0.042 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.435 kg/kcu m of feed (0.154 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.350 kg/kcu m of feed (0.123 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0085 kg/kcu m of feed (0.0030 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0069 kg/kcu m of feed (0.0024 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.85 kg/kcu m of feed (0.30 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.63 kg/kcu m of feed (0.21 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.12(b) (1) and (2).

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

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

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 7.6 kg/kcu m of feed (2.67 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 6.1 kg/kcu m of feed (2.16 lb/Mbbl of feed).
COD-----	Maximum for any one day 47.0 kg/kcu m of feed (16.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 37.6 kg/kcu m of feed (13.3 lb/Mbbl of feed).
TOC-----	Maximum for any one day 17.3 kg/kcu m of feed (6.1 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 13.9 kg/kcu m of feed (4.9 lb/Mbbl of feed).
TSS-----	Maximum for any one day 7.1 kg/kcu m of feed (2.5 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.6 kg/kcu m of feed (2.0 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 1.4 kg/kcu m of feed (0.50 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.1 kg/kcu m of feed (0.40 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.034 kg/kcu m of feed (0.012 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.025 kg/kcu m of feed (0.0087 lb/Mbbl of feed).
NH3-----	Maximum for any one day 3.0 kg/kcu m of feed (1.1 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.3 kg/kcu m of feed (0.80 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.16 kg/kcu m of feed (0.057 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kcu m of feed (0.036 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Crt.....	Maximum for any one day 0.36 kg/kcu m of feed (0.128 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.29 kg/kcu m of feed (0.102 lb/Mbbl of feed).
Cr6.....	Maximum for any one day 0.0072 kg/kcu m of feed (0.0025 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0057 kg/kcu m of feed (0.0020 lb/Mbbl of feed).
Zinc.....	Maximum for any one day 0.57 kg/kcu m of feed.(0.20 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.44 kg/kcu m of feed (0.15 lb/Mbbl of feed).
pH.....	Within the range of 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.13(b) (1) and (2).

§ 419.54 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5.....	Maximum for any one day 18.4 kg/kcu m of feed (6.5 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 14.9 kg/kcu m of feed (5.3 lb/Mbbl of feed).
COD.....	Maximum for any one day 157 kg/kcu m of feed (55.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 125 kg/kcu m of feed (44.3 lb/Mbbl of feed).
TOC.....	Maximum for any one day 25.6 kg/kcu m of feed (9.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 20.6 kg/kcu m of feed (7.3 lb/Mbbl of feed).
TSS.....	Maximum for any one day 14.7 kg/kcu m of feed (5.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 11.9 kg/kcu m of feed (4.2 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Oil and grease.	Maximum for anyone day 7.1 kg/kcu m of feed (2.5 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.7 kg/kcu m of feed (2.0 lb/Mbbl of feed).
Phenols.....	Maximum for any one day 0.177 kg/kcu m of feed (0.062 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.125 kg/kcu m of feed (0.044 lb/Mbbl of feed).
NH3	Maximum for any one day 7.4 kg/kcu m of feed (2.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.7 kg/kcu m of feed (2.0 lb/Mbbl of feed). Maximum for any one day 0.162 kg/kcu m of feed (0.057 lb/Mbbl of feed).
Sulfide.....	Maximum average of daily values for any period of thirty consecutive days 0.103 kg/kcu m of feed (0.026 lb/Mbbl of feed).
CrT.....	Maximum for any one day 0.36 kg/kcu m of feed (0.128 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.29 kg/kcu m of feed (0.102 lb/Mbbl of feed).
Cr6.....	Maximum for any one day 0.0072 kg/kcu m of feed (0.0025 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0057 kg/kcu m of feed (0.0020 lb/Mbbl of feed).
Zinc.....	Maximum for any one day 0.57 kg/kcu m of feed (0.20 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.44 kg/kcu m of feed (0.15 lb/Mbbl of feed).
pH	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.14(b) (1) and (2).

§ 419.55 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the lube subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128, of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major

contributing industry shall be the standard of performance for new sources specified in § 419.54 of this title, provided, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart F—Integrated Subcategory

§ 419.60 Applicability; description of the integrated subcategory.

The provisions of this subpart are applicable to the discharges of process waste water pollutants and other waste water pollutants from any facility which produces petroleum products by the use of topping, catalytic reforming, cracking, petrochemical operations, with production of greater than 15 percent of the feedstock throughout in first generation petrochemicals and isomerization products (BTX, olefins, cyclohexane, etc.) or production of second generation petrochemicals (alcohols, ketones, cements, etc.), and lubes, whether or not the facility includes any processes other than topping, catalytic reforming, cracking, and petrochemical operations. Allocations for the waste water pollutant discharges from contaminated storm water runoff and ballast water are also applicable to this subpart.

§ 419.61 Specialized definitions.

For the purposes of this subpart:

(a) The term "process waste water" shall mean any water which during the manufacturing process comes into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

(b) The term "process waste water pollutants" shall mean pollutants contained in process waste waters.

(c) The term "other waste water pollutants" shall mean pollutants contained in cooling tower and utility blowdowns, once-through cooling water, runoff, ballast, and from auxiliary facilities such as laboratories and others.

(d) The term "runoff" shall mean the flow of storm water (daily average flow).

(e) The term "ballast" shall mean the flow of waters from a ship which is to be treated at the refinery (daily average flow).

(f) The term "feed" shall mean the crude oil and natural gas liquids feed to the topping units.

(g) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 217;

(h) The term "phenol(s)" shall mean those components of a waste water amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 232;

(i) The following abbreviations shall mean: (i) BOD5 shall mean five day biochemical oxygen demand; (ii) COD shall mean chemical oxygen demand; (iii) TOC shall mean total organic carbon; (iv) TSS shall mean total suspended nonfilterable solids; (v) NH3 shall mean ammonia as nitrogen; (vi) CrT shall mean total chromium; (vii) Cr6 shall mean hexavalent chromium; (viii) kg shall mean kilogram; (ix) kcu m shall mean one thousand cubic meters; (x) lb shall mean pounds; (xi) Mgal shall mean one thousand gallons; (xii) Mbbl shall mean one thousand barrels (one barrel is equivalent to 42 gallons); (xiii) cu m shall mean one cubic meter; and (xiv) feed shall mean feedstock.

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

(a) The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best practicable control technology currently available by a point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum* for any one day 34.0 kg/kcu m of feed (12.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 27.5 kg/kcu m of feed (9.7 lb/Mbbl of feed).
COD-----	Maximum for any one day 248.5 kg/kcu m of feed (87.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 198.8 kg/kcu m of feed (70.2 lb/Mbbl of feed).
TOC-----	Maximum for any one day 46.6 kg/kcu m of feed (16.5 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 37.9 kg/kcu m of feed (13.4 lb/Mbbl of feed).
TSS-----	Maximum for any one day 21.6 kg/kcu m of feed (7.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 17.3 kg/kcu m of feed (6.1 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 10.8 kg/kcu m of feed (3.8 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 8.6 kg/kcu m of feed (3.0 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.266 kg/kcu m of feed (0.094 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.188 kg/kcu m of feed (0.066 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
NH3-----	Maximum for any one day 14.2 kg/kcu m of feed (5.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 10.6 kg/kcu m of feed (3.8 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.24 kg/kcu m of feed (0.086 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.155 kg/kcu m of feed (0.055 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.555 kg/kcu m of feed (0.190 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.445 kg/kcu m of feed (0.157 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.011 kg/kcu m of feed (0.0040 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0091 kg/kcu m of feed (0.0032 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 1.1 kg/kcu m of feed (0.40 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.91 kg/kcu m of feed (0.32 lb/Mbbl of feed).
pH-----	Within the range of 6.0 to 9.0

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.12(b) (1) and (2).

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

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

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 7.8 kg/kcu m of feed (2.75 lb/Mbbl of feed). Maximum average of daily value for any period of thirty consecutive days 6.3 kg/kcu m of feed (2.23 lb/Mbbl of feed).
COD-----	Maximum for any one day 42.5 kg/kcu m of feed (15.0 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 34.0 kg/kcu m of feed (12.0 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
TOC-----	Maximum for any one day 17.5 kg/kcu m of feed (6.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 14.4 kg/kcu m of feed (5.1 lb/Mbbl of feed).
TSS-----	Maximum for any one day 7.4 kg/kcu m of feed (2.6 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 5.9 kg/kcu m of feed (2.1 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 1.5 kg/kcu m of feed (0.52 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.2 kg/kcu m of feed (0.42 lb/Mbbl of feed).
Phenols-----	Maximum for any one day 0.037 kg/kcu m of feed (0.013 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0255 kg/kcu m of feed (0.0090 lb/Mbbl of feed).
NH3-----	Maximum for any one day 3.8 kg/kcu m of feed (1.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 2.8 kg/kcu m of feed (1.0 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.16 kg/kcu m of feed (0.057 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kcu m of feed (0.036 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.37 kg/kcu m of feed (0.132 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kcu m of feed (0.106 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0074 kg/kcu m of feed (0.0026 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0059 kg/kcu m of feed (0.0021 lb/Mbbl of feed).
Zinc-----	Maximum for any one day 0.59 kg/kcu m of feed (0.21 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.46 kg/kcu m of feed (0.16 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Subpart A § 419.13(b) (1) and (2).

§ 419.64 Standards of performance for new sources.

(a) The following limitations constitute the quantity or quality of pollutants

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or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
BOD5-----	Maximum for any one day 23.2 kg/kcu m of feed (8.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 18.8 kg/kcu m of feed (6.6 lb/Mbbl of feed).
COD-----	Maximum for any one day 170 kg/kcu m of feed (60.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 136 kg/kcu m of feed (48.2 lb/Mbbl of feed).
TOC-----	Maximum for any one day 32.3 kg/kcu m of feed (11.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 26.1 kg/kcu m of feed (9.2 lb/Mbbl of feed).
TSS-----	Maximum for any one day 14.7 kg/kcu m of feed (5.2 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 1.9 kg/kcu m of feed (4.2 lb/Mbbl of feed).
Oil and grease.	Maximum for any one day 7.4 kg/kcu m of feed (2.6 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Phenols-----	Maximum average of daily values for any period of thirty consecutive days 5.9 kg/kcu m of feed (2.1 lb/Mbbl of feed). Maximum for any one day 0.183 kg/kcu m of feed (0.065 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.130 kg/kcu m of feed (0.046 lb/Mbbl of feed).
NH3-----	Maximum for any one day 9.6 kg/kcu m of feed (3.4 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 7.2 kg/kcu m of feed (2.6 lb/Mbbl of feed).
Sulfide-----	Maximum for any one day 0.168 kg/kcu m of feed (0.059 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.107 kg/kcu m of feed (0.038 lb/Mbbl of feed).
CrT-----	Maximum for any one day 0.37 kg/kcu m of feed (0.132 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kcu m of feed (0.106 lb/Mbbl of feed).
Cr6-----	Maximum for any one day 0.0074 kg/kcu m of feed (0.0026 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.0059 kg/kcu m of feed (0.0021 lb/Mbbl of feed).

<i>Effluent characteristics</i>	<i>Effluent limitation</i>
Zinc-----	Maximum for any one day 0.59 kg/kcu m of feed (0.21 lb/Mbbl of feed). Maximum average of daily values for any period of thirty consecutive days 0.46 kg/kcu m of feed (0.16 lb/Mbbl of feed).
pH-----	Within the range 6.0 to 9.0.

(b) Allocations for the waste water pollutants resulting from storm water runoff and ballast water are numerically the same as for Supart A § 419.14(b) (1) and (2).

§ 419.65 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the integrated subcategory, which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this title, except that for the purposes of this section, § 128.133 of this title shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131 of this title, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 419.64 of this title *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

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