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major contributing industry as defined in 40 CFR part 128 (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to the navigable waters), shall be the same standard as set forth in 40 CFR part 128, for existing sources, except that, for the purpose of this section, 40 CFR 128.121, 128.122, 128.132 and 128.133 shall not apply. The following pretreatment standard establishes the quantity or quality of pollutants or pollutant properties controlled by this section which may be discharged to a publicly owned treatment works by a new source subject to the provisions of this subpart:

| Pollutant or pollutant property | Pretreatment standard |
|---------------------------------|-----------------------|
| BOD <sub>5</sub> .....          | No limitations.       |
| TSS .....                       | Do.                   |
| pH .....                        | Do.                   |
| Ammonia (as N) .....            | 30 mg/l.              |
| Nitrate (as N) .....            | Do.                   |
| Total phosphorus (as P) .....   | 35 mg/l.              |

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

The following limitations establish the quantity or quality of pollutants or pollutant properties, which may be discharged by a point source subject to the provisions of this subpart after application of the best conventional pollutant control technology: There shall be no discharge of process waste water pollutants to navigable waters.

[44 FR 50742, Aug. 29, 1979]

**PART 419—PETROLEUM REFINING  
POINT SOURCE CATEGORY**

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- 419.34 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
- 419.35 Pretreatment standards for existing sources (PSES).
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### Subpart D—Lube Subcategory

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- 419.45 Pretreatment standards for existing sources (PSES).
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- 419.54 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
- 419.55 Pretreatment standards for existing sources (PSES).
- 419.56 Standards of performance for new sources (NSPS).
- 419.57 Pretreatment standards for new sources (PSNS).

APPENDIX A TO PART 419—PROCESSES INCLUDED IN THE DETERMINATION OF BAT EFFLUENT LIMITATIONS FOR TOTAL CHROMIUM, HEXAVALENT CHROMIUM, AND PHENOLIC COMPOUNDS (4AAP)

AUTHORITY: Secs. 301, 304 (b), (c), (e), and (g), 306 (b) and (c), 307 (b) and (c), and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977) (the “Act”); 33 U.S.C. 1311, 1314 (b), (c), (e), and (g), 1316 (b) and (c), 1317 (b) and (c), and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217.

SOURCE: 47 FR 46446, Oct. 18, 1982, unless otherwise noted.

### Subpart A—Topping Subcategory

#### § 419.10 Applicability; description of the topping subcategory.

The provisions of this subpart apply to discharges from any facility that produces petroleum products by the use of topping and catalytic reforming, whether or not the facility includes any other process in addition to topping and catalytic reforming. The provisions of this subpart do not apply to facilities that include thermal processes (coking, vis-breaking, etc.) or catalytic cracking.

#### § 419.11 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter shall apply to this subpart.

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

(c) The term *ballast* shall mean the flow of waters, from a ship, that is treated along with refinery wastewaters in the main treatment system.

(d) The term *feedstock* shall mean the crude oil and natural gas liquids fed to the topping units.

(e) The term *once-through cooling water* shall mean those waters discharged that are used for the purpose of heat removal and that do not come into direct contact with any raw material, intermediate, or finished product.

(f) The following abbreviations shall be used: (1) Mgal means one thousand gallons; (2) Mbbl means one thousand barrels (one barrel is equivalent to 42 gallons).

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

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, July 12, 1985]

## § 419.12

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

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

| Pollutant or pollutant property | BPT Effluent Limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 22.7                                                           | 12.0                                                             |
| TSS .....                       | 15.8                                                           | 10.1                                                             |
| COD <sup>1</sup> .....          | 117.0                                                          | 60.3                                                             |
| Oil and grease .....            | 6.9                                                            | 3.7                                                              |
| Phenolic compounds .....        | 0.168                                                          | 0.076                                                            |
| Ammonia as N .....              | 2.81                                                           | 1.27                                                             |
| Sulfide .....                   | 0.149                                                          | 0.068                                                            |
| Total chromium .....            | 0.345                                                          | 0.20                                                             |
| Hexavalent chromium .....       | 0.028                                                          | 0.012                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 8.0                                                            | 4.25                                                             |
| TSS .....                       | 5.6                                                            | 3.6                                                              |
| COD <sup>1</sup> .....          | 41.2                                                           | 21.3                                                             |
| Oil and grease .....            | 2.5                                                            | 1.3                                                              |
| Phenolic compounds .....        | 0.060                                                          | 0.027                                                            |
| Ammonia as N .....              | 0.99                                                           | 0.45                                                             |
| Sulfide .....                   | 0.053                                                          | 0.024                                                            |
| Total chromium .....            | 0.122                                                          | 0.071                                                            |
| Hexavalent chromium .....       | 0.01                                                           | 0.0044                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 24.9 .....                  | 1.02        |
| 25.0 to 49.9 .....                    | 1.06        |
| 50.0 to 74.9 .....                    | 1.16        |
| 75.0 to 99.9 .....                    | 1.26        |
| 100 to 124.9 .....                    | 1.38        |
| 125.0 to 149.9 .....                  | 1.50        |
| 150.0 or greater .....                | 1.57        |

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(2) Process factor.

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

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

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best practicable control technology currently available, by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/M gal), shall be based on those ballast waters treated at the refinery.

| Pollutant or pollutant property | BPT effluent limitations for ballast water       |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per cubic meter of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 0.048                                            | 0.026                                                            |
| TSS .....                       | 0.033                                            | 0.021                                                            |
| COD <sup>1</sup> .....          | 0.47                                             | 0.24                                                             |
| Oil and grease .....            | 0.015                                            | 0.008                                                            |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 gal of flow)     |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                             | 0.21                                                             |
| TSS .....                       | 0.26                                             | 0.17                                                             |
| COD <sup>1</sup> .....          | 3.9                                              | 2.0                                                              |
| Oil and grease .....            | 0.126                                            | 0.067                                                            |

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| Pollutant or pollutant property | BPT effluent limitations for ballast water |                                                                  |
|---------------------------------|--------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                      | Average of daily values for 30 consecutive days shall not exceed |
| pH .....                        | ( <sup>2</sup> )                           | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property                           | BPT effluent limitations for contaminated runoff |                                                                  |
|-----------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                                           | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 48.                                              | 26.                                                              |
| TSS .....                                                 | 33.                                              | 21.                                                              |
| COD <sup>1</sup> .....                                    | 360.                                             | 180.                                                             |
| Oil and grease .....                                      | 15.                                              | 8.                                                               |
| Phenolic compounds (4AAP) .....                           | 0.35                                             | 0.17                                                             |
| Total chromium .....                                      | 0.73                                             | 0.43                                                             |
| Hexavalent chromium .....                                 | 0.062                                            | 0.028                                                            |
| pH .....                                                  | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
| English units (pounds per 1,000 gallons of flow)          |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 0.40                                             | 0.22                                                             |
| TSS .....                                                 | 0.28                                             | 0.18                                                             |
| COD <sup>1</sup> .....                                    | 3.0                                              | 1.5                                                              |
| Oil and grease .....                                      | 0.13                                             | 0.067                                                            |
| Phenolic compounds (4AAP) .....                           | 0.0029                                           | 0.0014                                                           |
| Total chromium .....                                      | 0.0060                                           | 0.0035                                                           |
| Hexavalent chromium .....                                 | 0.00052                                          | 0.00023                                                          |
| pH .....                                                  | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup> In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

<sup>2</sup> Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

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| Pollutant or pollutant property | BAT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| COD <sup>1</sup> .....          | 117                                                            | 60.3                                                             |
| Ammonia as N .....              | 2.81                                                           | 1.27                                                             |
| Sulfide .....                   | 0.149                                                          | 0.068                                                            |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| COD <sup>1</sup> .....          | 41.2                                                           | 21.3                                                             |
| Ammonia as N .....              | 0.99                                                           | 0.45                                                             |
| Sulfide .....                   | 0.053                                                          | 0.024                                                            |

<sup>1</sup> See footnote following table in § 419.13(d).

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 24.9 .....                  | 1.02        |
| 25.0 to 49.9 .....                    | 1.06        |
| 50.0 to 74.9 .....                    | 1.16        |
| 75.0 to 99.9 .....                    | 1.26        |
| 100 to 124.9 .....                    | 1.38        |
| 125.0 to 149.9 .....                  | 1.50        |
| 150.0 or greater .....                | 1.57        |

(2) Process factor.

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

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

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(c)(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1–82/014), Table III–7, pp. 49–54.

| Pollutant or pollutant property and process type | BAT effluent limitation factor                               |                                                                  |
|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day                                        | Average of daily values for 30 consecutive days shall not exceed |
|                                                  | Metric units (kilograms per 1,000 cubic meters of feedstock) |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.037                                                        | 0.009                                                            |
| Cracking and coking .....                        | 0.419                                                        | 0.102                                                            |
| Asphalt .....                                    | 0.226                                                        | 0.055                                                            |
| Lube .....                                       | 1.055                                                        | 0.257                                                            |
| Reforming and alkylation .....                   | 0.377                                                        | 0.092                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.030                                                        | 0.011                                                            |
| Cracking and coking .....                        | 0.340                                                        | 0.118                                                            |
| Asphalt .....                                    | 0.183                                                        | 0.064                                                            |
| Lube .....                                       | 0.855                                                        | 0.297                                                            |
| Reforming and alkylation .....                   | 0.305                                                        | 0.106                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0019                                                       | 0.0009                                                           |
| Cracking and coking .....                        | 0.0218                                                       | 0.0098                                                           |
| Asphalt .....                                    | 0.0117                                                       | 0.0053                                                           |
| Lube .....                                       | 0.0549                                                       | 0.0248                                                           |
| Reforming and alkylation .....                   | 0.0196                                                       | 0.0088                                                           |
|                                                  | English units (pounds per 1,000 bbl of feedstock)            |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.013                                                        | 0.003                                                            |
| Cracking and coking .....                        | 0.147                                                        | 0.036                                                            |
| Asphalt .....                                    | 0.079                                                        | 0.019                                                            |
| Lube .....                                       | 0.369                                                        | 0.090                                                            |
| Reforming and alkylation .....                   | 0.132                                                        | 0.032                                                            |

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| Pollutant or pollutant property and process type | BAT effluent limitation factor |                                                                  |
|--------------------------------------------------|--------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day          | Average of daily values for 30 consecutive days shall not exceed |
| Total chromium:                                  |                                |                                                                  |
| Crude .....                                      | 0.011                          | 0.004                                                            |
| Cracking and coking .....                        | 0.119                          | 0.041                                                            |
| Asphalt .....                                    | 0.064                          | 0.022                                                            |
| Lube .....                                       | 0.299                          | 0.104                                                            |
| Reforming and alkylation                         | 0.107                          | 0.037                                                            |
| Hexavalent chromium:                             |                                |                                                                  |
| Crude .....                                      | 0.0007                         | 0.0003                                                           |
| Cracking and coking .....                        | 0.0076                         | 0.0034                                                           |
| Asphalt .....                                    | 0.0041                         | 0.0019                                                           |
| Lube .....                                       | 0.0192                         | 0.0087                                                           |
| Reforming and alkylation                         | 0.0069                         | 0.0031                                                           |

(2) See the comprehensive example in subpart D, §419.43(c)(2).

(d) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to ballast, which may be discharged after the application of best available technology economically achievable by a point source subject to the provisions of this subpart. These allocations are in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/M gal), shall be based on those ballast waters treated at the refinery.

| Pollutant or pollutant property | BAT effluent limitations for ballast water       |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average or daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per cubic meter of flow) |                                                                  |
| COD <sup>1</sup> .....          | 0.47                                             | 0.24                                                             |
|                                 | English units (pounds per 1,000 gal of flow)     |                                                                  |
| COD <sup>1</sup> .....          | 3.9                                              | 2.0                                                              |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the Regional Administrator may substitute TOC as a parameter in lieu of COD Effluent limitations for TOC shall be based on effluent data from the plant correlating TOC to BOD<sub>5</sub>.

If in the judgment of the Regional Administrator, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations on BOD<sub>5</sub>.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable

to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| Phenolic compounds (4AAP)       | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.60                                                      | 0.21                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |
| COD <sup>1</sup> .....          | 360.                                                      | 180.                                                             |
|                                 | English units (pounds per 1,000 gallons of flow)          |                                                                  |
| Phenolic compounds (4AAP)       | 0.0029                                                    | 0.0014                                                           |
| Total chromium .....            | 0.0050                                                    | 0.0018                                                           |
| Hexavalent chromium .....       | 0.00052                                                   | 0.00023                                                          |

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| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| COD <sup>1</sup> .....          | 3.0                                              | 1.5                                                              |

<sup>1</sup> In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

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

| Pollutant or pollutant property                                | BCT effluent limitations |                                                                  |
|----------------------------------------------------------------|--------------------------|------------------------------------------------------------------|
|                                                                | Maximum for any 1 day    | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (Kilograms per 1,000 m <sup>3</sup> of feedstock) |                          |                                                                  |
| BOD <sub>5</sub> .....                                         | 22.7                     | 12.0                                                             |
| TSS .....                                                      | 15.8                     | 10.1                                                             |
| Oil and Grease .....                                           | 6.9                      | 3.7                                                              |
| pH .....                                                       | ( <sup>1</sup> )         | ( <sup>1</sup> )                                                 |
| English units (pounds per 1,000 bbl of feedstock)              |                          |                                                                  |
| BOD <sub>5</sub> .....                                         | 8.0                      | 4.25                                                             |
| TSS .....                                                      | 5.6                      | 3.6                                                              |
| Oil and Grease .....                                           | 2.5                      | 1.3                                                              |
| pH .....                                                       | ( <sup>1</sup> )         | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 24.9 .....                  | 1.02        |
| 25.0 to 49.9 .....                    | 1.06        |
| 50.0 to 74.9 .....                    | 1.16        |
| 75.0 to 99.9 .....                    | 1.26        |
| 100 to 124.9 .....                    | 1.38        |
| 125.0 to 149.9 .....                  | 1.50        |
| 150.0 or greater .....                | 1.57        |

**(2) Process factor.**

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

(3) See the comprehensive example in subpart D, § 419.43(b)(3).

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best conventional pollutant control technology by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/1000 gal), shall be based on those ballast waters treated at the refinery.

| Pollutant or pollutant property                     | BCT Effluent limitations for ballast water |                                                                  |
|-----------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|
|                                                     | Maximum for any 1 day                      | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (kilograms per m <sup>3</sup> of flow) |                                            |                                                                  |
| BOD <sub>5</sub> .....                              | 0.048                                      | 0.026                                                            |
| TSS .....                                           | 0.033                                      | 0.021                                                            |
| Oil and grease .....                                | 0.015                                      | 0.008                                                            |
| pH .....                                            | ( <sup>1</sup> )                           | ( <sup>1</sup> )                                                 |

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| Pollutant or pollutant property | BCT Effluent limitations for ballast water      |                                                                  |
|---------------------------------|-------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                           | Average of daily values for 30 consecutive days shall not exceed |
|                                 | English units (pounds per 1000 gallons of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                            | 0.21                                                             |
| TSS .....                       | 0.26                                            | 0.17                                                             |
| Oil and grease .....            | 0.126                                           | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

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

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

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

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

| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff           |                                                                  |
|---------------------------------|------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                      | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 (m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                        | 26.                                                              |
| TSS .....                       | 33.                                                        | 21.                                                              |
| Oil and grease .....            | 15.                                                        | 8.                                                               |
| pH .....                        | ( <sup>1</sup> )                                           | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow)           |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                                       | 0.22                                                             |
| TSS .....                       | 0.28                                                       | 0.18                                                             |
| Oil and grease .....            | 0.13                                                       | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                           | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

[50 FR 28524, July 12, 1985]

**§ 419.15 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for existing sources maximum for any 1 day |
|---------------------------------|-------------------------------------------------------------------|
|                                 | (Milligrams per liter (mg/l))                                     |
| Oil and Grease .....            | 100                                                               |
| Ammonia (as N) .....            | <sup>1</sup> 100                                                  |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.13 (a) and (b).

**§ 419.16 Standards of performance for new sources (NSPS).**

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):



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| Pollutant or pollutant property | NSPS effluent limitations                        |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per cubic meter of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 11.8                                             | 6.3                                                              |
| TSS .....                       | 8.3                                              | 4.9                                                              |
| COD <sup>1</sup> .....          | 61.0                                             | 32                                                               |
| Oil and grease .....            | 3.6                                              | 1.9                                                              |
| Phenolic compounds .....        | 0.088                                            | 0.043                                                            |
| Ammonia as N .....              | 2.8                                              | 1.3                                                              |
| Sulfide .....                   | 0.078                                            | 0.035                                                            |
| Total chromium .....            | 0.18                                             | 0.105                                                            |
| Hexavalent chromium .....       | 0.015                                            | 0.0068                                                           |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 gal of flow)     |                                                                  |
| BOD <sub>5</sub> .....          | 4.2                                              | 2.2                                                              |
| TSS .....                       | 3.0                                              | 1.9                                                              |
| COD <sup>1</sup> .....          | 21.7                                             | 11.2                                                             |
| Oil and grease .....            | 1.3                                              | 0.70                                                             |
| Phenolic compounds .....        | 0.031                                            | 0.016                                                            |
| Ammonia as N .....              | 1.0                                              | 0.45                                                             |
| Sulfide .....                   | 0.027                                            | 0.012                                                            |
| Total chromium .....            | 0.064                                            | 0.037                                                            |
| Hexavalent chromium .....       | 0.0052                                           | 0.0025                                                           |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 24.9 .....                  | 1.02        |
| 25.0 to 49.9 .....                    | 1.06        |
| 50.0 to 74.9 .....                    | 1.16        |
| 75.0 to 99.9 .....                    | 1.26        |
| 100 to 124.9 .....                    | 1.38        |
| 125.0 to 149.9 .....                  | 1.50        |
| 150.0 or greater .....                | 1.57        |

(2) Process factor.

| Process configuration | Process factor |
|-----------------------|----------------|
| Less than 2.49 .....  | 0.62           |
| 2.5 to 3.49 .....     | 0.67           |
| 3.5 to 4.49 .....     | 0.80           |
| 4.5 to 5.49 .....     | 0.95           |
| 5.5 to 5.99 .....     | 1.07           |
| 6.0 to 6.49 .....     | 1.17           |
| 6.5 to 6.99 .....     | 1.27           |
| 7.0 to 7.49 .....     | 1.39           |
| 7.5 to 7.99 .....     | 1.51           |
| 8.0 to 8.49 .....     | 1.64           |
| 8.5 to 9.99 .....     | 1.79           |

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| Process configuration | Process factor |
|-----------------------|----------------|
| 9.0 to 9.49 .....     | 1.95           |
| 9.5 to 9.99 .....     | 2.12           |
| 10.0 to 10.49 .....   | 2.31           |
| 10.5 to 10.99 .....   | 2.51           |
| 11.0 to 11.49 .....   | 2.73           |
| 11.5 to 11.99 .....   | 2.98           |
| 12.0 to 12.49 .....   | 3.24           |
| 12.5 to 12.99 .....   | 3.53           |
| 13.0 to 13.49 .....   | 3.84           |
| 13.5 to 13.99 .....   | 4.18           |
| 14.0 or greater ..... | 4.36           |

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

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best practicable control technology currently available, by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/Mgal), shall be based on those ballast waters treated at the refinery.

| Pollutant or pollutant property | NSPS Effluent Limitations for Ballast Water      |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per cubic meter of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 0.048                                            | 0.026                                                            |
| TSS .....                       | 0.033                                            | 0.021                                                            |
| COD <sup>1</sup> .....          | 0.47                                             | 0.24                                                             |
| Oil and grease .....            | 0.015                                            | 0.008                                                            |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 gal of flow)     |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                             | 0.21                                                             |
| TSS .....                       | 0.27                                             | 0.17                                                             |
| COD <sup>1</sup> .....          | 3.9                                              | 2.0                                                              |
| Oil and grease .....            | 0.126                                            | 0.067                                                            |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0

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

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through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) *Effluent limitations for runoff.* [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§ 419.17 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Oil and grease .....            | 100                                                          |
| Ammonia (as N) .....            | 100                                                          |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.16 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying: (1) The standard; (2) by the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow.

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Total chromium .....            | 1                                                            |

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

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping and cracking, whether or not the facility includes any process in addition to topping and cracking. The provisions of this subpart are not applicable, however, to facilities that include the processes specified in subparts C, D, or E of this part.

**§ 419.21 Specialized definitions.**

The general definitions, abbreviations and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply to this subpart.

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

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

| Pollutant or pollutant property | BPT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 28.2                                                           | 15.6                                                             |
| TSS .....                       | 19.5                                                           | 12.6                                                             |
| COD <sup>1</sup> .....          | 210.0                                                          | 109                                                              |
| Oil and grease .....            | 8.4                                                            | 4.5                                                              |
| Phenolic compounds .....        | 0.21                                                           | 0.10                                                             |
| Ammonia as N .....              | 18.8                                                           | 8.5                                                              |
| Sulfide .....                   | 0.18                                                           | 0.082                                                            |
| Total chromium .....            | 0.43                                                           | 0.25                                                             |
| Hexavalent chromium .....       | 0.035                                                          | 0.016                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl feedstock)                 |                                                                  |
| BOD <sub>5</sub> .....          | 9.9                                                            | 5.5                                                              |

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| Pollutant or pollutant property | BPT effluent limitations |                                                                  |
|---------------------------------|--------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day    | Average of daily values for 30 consecutive days shall not exceed |
| TSS .....                       | 6.9                      | 4.4                                                              |
| COD <sup>1</sup> .....          | 74.0                     | 38.4                                                             |
| Oil and grease .....            | 3.0                      | 1.6                                                              |
| Phenolic compounds .....        | 0.074                    | 0.036                                                            |
| Ammonia as N .....              | 6.6                      | 3.0                                                              |
| Sulfide .....                   | 0.065                    | 0.029                                                            |
| Total chromium .....            | 0.15                     | 0.088                                                            |
| Hexavalent chromium .....       | 0.012                    | 0.0056                                                           |
| pH .....                        | ( <sup>2</sup> )         | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

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

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

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by

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paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property                           | BPT effluent limitations for contaminated runoff |                                                                  |
|-----------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                                           | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 48.                                              | 26.                                                              |
| TSS .....                                                 | 33.                                              | 21.                                                              |
| COD <sup>1</sup> .....                                    | 360.                                             | 180.                                                             |
| Oil and grease .....                                      | 15.                                              | 8.                                                               |
| Phenolic compounds (4AAP) .....                           | 0.35                                             | 0.17                                                             |
| Total chromium .....                                      | 0.73                                             | 0.43                                                             |
| Hexavalent chromium .....                                 | 0.062                                            | 0.028                                                            |
| pH .....                                                  | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
| English units (pounds per 1,000 gallons of flow)          |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 0.40                                             | 0.22                                                             |
| TSS .....                                                 | 0.28                                             | 0.18                                                             |
| COD <sup>1</sup> .....                                    | 3.0                                              | 1.5                                                              |
| Oil and grease .....                                      | 0.13                                             | 0.067                                                            |
| Phenolic compounds (4AAP) .....                           | 0.0029                                           | 0.0014                                                           |
| Total chromium .....                                      | 0.0060                                           | 0.0035                                                           |
| Hexavalent chromium .....                                 | 0.00052                                          | 0.00023                                                          |

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| Pollutant or pollutant property | BPT effluent limitations for contaminated runoff |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup> In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BODs. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BODs.

<sup>2</sup> Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**\$419.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

| Pollutant or pollutant property | BAT Effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| COD <sup>1</sup> .....          | 210                                                            | 109                                                              |
| Ammonia as N .....              | 18.8                                                           | 8.5                                                              |
| Sulfide .....                   | 0.18                                                           | 0.082                                                            |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| COD <sup>1</sup> .....          | 74.0                                                           | 38.4                                                             |
| Ammonia as N .....              | 6.6                                                            | 3.0                                                              |
| Sulfide .....                   | 0.065                                                          | 0.029                                                            |

<sup>1</sup> See footnote following table in §419.13(d).

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

maximum average of daily values for thirty consecutive days.

(1) Size factor.

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

(2) Process factor.

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

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

(c)(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

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| Pollutant or pollutant property and process type | BAT effluent limitation factor                               |                                                                  |
|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day                                        | Average of daily values for 30 consecutive days shall not exceed |
|                                                  | Metric units (kilograms per 1,000 cubic meters of feedstock) |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.037                                                        | 0.009                                                            |
| Cracking and coking .....                        | 0.419                                                        | 0.102                                                            |
| Asphalt .....                                    | 0.226                                                        | 0.055                                                            |
| Lube .....                                       | 1.055                                                        | 0.257                                                            |
| Reforming and alkylation                         | 0.377                                                        | 0.092                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.030                                                        | 0.011                                                            |
| Cracking and coking .....                        | 0.340                                                        | 0.118                                                            |
| Asphalt .....                                    | 0.183                                                        | 0.064                                                            |
| Lube .....                                       | 0.855                                                        | 0.297                                                            |
| Reforming and alkylation                         | 0.305                                                        | 0.106                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0019                                                       | 0.0009                                                           |
| Cracking and coking .....                        | 0.0218                                                       | 0.0098                                                           |
| Asphalt .....                                    | 0.0117                                                       | 0.0053                                                           |
| Lube .....                                       | 0.0549                                                       | 0.0248                                                           |
| Reforming and alkylation                         | 0.0196                                                       | 0.0088                                                           |
|                                                  | English units (pounds per 1,000 bbl of feedstock)            |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.013                                                        | 0.003                                                            |
| Cracking and coking .....                        | 0.147                                                        | 0.036                                                            |
| Asphalt .....                                    | 0.079                                                        | 0.019                                                            |
| Lube .....                                       | 0.369                                                        | 0.090                                                            |
| Reforming and alkylation                         | 0.132                                                        | 0.032                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.011                                                        | 0.004                                                            |
| Cracking and coking .....                        | 0.119                                                        | 0.041                                                            |
| Asphalt .....                                    | 0.064                                                        | 0.022                                                            |
| Lube .....                                       | 0.299                                                        | 0.104                                                            |
| Reforming and alkylation                         | 0.107                                                        | 0.037                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0007                                                       | 0.0003                                                           |
| Cracking and coking .....                        | 0.0076                                                       | 0.0034                                                           |
| Asphalt .....                                    | 0.0041                                                       | 0.0019                                                           |
| Lube .....                                       | 0.0192                                                       | 0.0087                                                           |
| Reforming and alkylation                         | 0.0069                                                       | 0.0031                                                           |

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) *Effluent limitations for contaminated runoff.* The following effluent limita-

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tions constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

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

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

| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| Phenolic compounds (4AAP)       | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.60                                                      | 0.21                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |
| COD <sup>1</sup> .....          | 360.                                                      | 180.                                                             |
|                                 | English units (pounds per 1,000 gallons of flow)          |                                                                  |
| Phenolic compounds (4AAP)       | 0.0029                                                    | 0.0014                                                           |
| Total chromium .....            | 0.0050                                                    | 0.0018                                                           |
| Hexavalent chromium .....       | 0.00052                                                   | 0.00023                                                          |
| COD <sup>1</sup> .....          | 3.0                                                       | 1.5                                                              |

<sup>1</sup> In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

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

| Pollutant or pollutant property | BCT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 28.2                                                           | 15.6                                                             |
| TSS .....                       | 19.5                                                           | 12.6                                                             |
| Oil and grease .....            | 8.4                                                            | 4.5                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 9.9                                                            | 5.5                                                              |
| TSS .....                       | 6.9                                                            | 4.4                                                              |
| Oil and grease .....            | 3.0                                                            | 1.6                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

| Process configuration | Process factor |
|-----------------------|----------------|
| Less than 2.49 .....  | 0.58           |
| 2.5 to 3.49 .....     | 0.63           |
| 3.5 to 4.49 .....     | 0.74           |
| 4.5 to 5.49 .....     | 0.88           |
| 5.5 to 5.99 .....     | 1.00           |
| 6.0 to 6.49 .....     | 1.09           |
| 6.5 to 6.99 .....     | 1.19           |
| 7.0 to 7.49 .....     | 1.29           |
| 7.5 to 7.99 .....     | 1.41           |
| 8.0 to 8.49 .....     | 1.53           |

| Process configuration | Process factor |
|-----------------------|----------------|
| 8.5 to 8.99 .....     | 1.67           |
| 9.0 to 9.49 .....     | 1.82           |
| 9.5 or greater .....  | 1.89           |

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

(c) The provisions of § 419.14(c) apply to discharge of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

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

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

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

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

| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48                                                        | 26                                                               |

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| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| TSS .....                       | 33                                               | 21                                                               |
| Oil and grease .....            | 15                                               | 8                                                                |
| pH .....                        | ( <sup>1</sup> )                                 | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow) |                                                                  |
|                                 |                                                  |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                             | 0.22                                                             |
| TSS .....                       | 0.28                                             | 0.18                                                             |
| Oil and grease .....            | 0.13                                             | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                 | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

[50 FR 28525, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§ 419.25 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Oil and grease .....            | 100                                                          |
| Ammonia .....                   | <sup>1</sup> 100                                             |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.23 (a) and (b).

**§ 419.26 Standards of performance for new sources (NSPS).**

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

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| Pollutant or pollutant property | NSPS effluent limitations                                      |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 16.3                                                           | 8.7                                                              |
| TSS .....                       | 11.3                                                           | 7.2                                                              |
| COD <sup>1</sup> .....          | 118.0                                                          | 61                                                               |
| oil and grease .....            | 4.8                                                            | 2.6                                                              |
| Phenolic compounds .....        | 0.119                                                          | 0.058                                                            |
| Ammonia (as N) .....            | 18.8                                                           | 8.6                                                              |
| Sulfide .....                   | 0.105                                                          | 0.048                                                            |
| Total chromium .....            | 0.24                                                           | 0.14                                                             |
| Hexavalent chromium .....       | 0.020                                                          | 0.0088                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 5.8                                                            | 3.1                                                              |
| TSS .....                       | 4.0                                                            | 2.5                                                              |
| COD <sup>1</sup> .....          | 41.5                                                           | 21                                                               |
| Oil and grease .....            | 1.7                                                            | 0.93                                                             |
| Phenolic compounds .....        | 0.042                                                          | 0.020                                                            |
| Ammonia (as N) .....            | 6.6                                                            | 3.0                                                              |
| Sulfide .....                   | 0.037                                                          | 0.017                                                            |
| Total chromium .....            | 0.084                                                          | 0.049                                                            |
| Hexavalent chromium .....       | 0.0072                                                         | 0.0032                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any 1 day and maximum average of daily values for 30 consecutive days.

(1) Size Factor.

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

(2) Process factor.

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

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

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

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) *Effluent limitation for runoff.* [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§ 419.27 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW.

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Oil and grease .....            | 100                                                          |
| Ammonia (as N) .....            | <sup>1</sup> 100                                             |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.26(a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying: (1) The standard; (2) by

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the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow.

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Total chromium .....            | 1                                                            |

**Subpart C—Petrochemical Subcategory****§ 419.30 Applicability; description of the petrochemical subcategory.**

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping, cracking, and petrochemical operations whether or not the facility includes any process in addition to topping, cracking, and petrochemical operations. The provisions of this subpart shall not be applicable, however, to facilities that include the processes specified in subpart D or E of this part.

**§ 419.31 Specialized definitions.**

For the purpose of this subpart:

(a) The general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply.

(b) The term *petrochemical operations* shall mean the production of second-generation petrochemicals (*i.e.*, alcohols, ketones, cumene, styrene, etc.) or first generation petrochemicals and isomerization products (*i.e.*, BTX, olefins, cyclohexane, etc.) when 15 percent or more of refinery production is as first-generation petrochemicals and isomerization products.

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must



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achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

| Pollutant or pollutant property | BPT Effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 34.6                                                           | 18.4                                                             |
| TSS .....                       | 23.4                                                           | 14.8                                                             |
| COD <sup>1</sup> .....          | 210.0                                                          | 109.0                                                            |
| Oil and grease .....            | 11.1                                                           | 5.9                                                              |
| Phenolic compound .....         | 0.25                                                           | 0.120                                                            |
| Ammonia as N .....              | 23.4                                                           | 10.6                                                             |
| Sulfide .....                   | 0.22                                                           | 0.099                                                            |
| Total chromium .....            | 0.52                                                           | 0.30                                                             |
| Hexavalent chromium .....       | 0.046                                                          | 0.020                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 12.1                                                           | 6.5                                                              |
| TSS .....                       | 8.3                                                            | 5.25                                                             |
| COD <sup>1</sup> .....          | 74.0                                                           | 38.4                                                             |
| Oil and grease .....            | 3.9                                                            | 2.1                                                              |
| Phenolic compounds .....        | 0.088                                                          | 0.0425                                                           |
| Ammonia as N .....              | 8.25                                                           | 3.8                                                              |
| Sulfide .....                   | 0.078                                                          | 0.035                                                            |
| Total chromium .....            | 0.183                                                          | 0.107                                                            |
| Hexavalent chromium .....       | 0.016                                                          | 0.0072                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

| Process configuration | Process factor |
|-----------------------|----------------|
| Less than 4.49 .....  | 0.73           |

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

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

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

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| Pollutant or pollutant property | BPT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                       | 26.                                                              |
| TSS .....                       | 33.                                                       | 21.                                                              |
| COD <sup>1</sup> .....          | 360.                                                      | 180.                                                             |
| Oil and grease .....            | 15.                                                       | 8.                                                               |
| Phenolic compounds (4AAP) ..... | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.73                                                      | 0.43                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |
| pH .....                        | ( <sup>2</sup> )                                          | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow)          |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                                      | 0.22                                                             |
| TSS .....                       | 0.28                                                      | 0.18                                                             |
| COD <sup>1</sup> .....          | 3.0                                                       | 1.5                                                              |
| Oil and grease .....            | 0.13                                                      | 0.067                                                            |
| Phenolic compounds (4AAP) ..... | 0.0029                                                    | 0.0014                                                           |
| Total chromium .....            | 0.0060                                                    | 0.0035                                                           |
| Hexavalent chromium .....       | 0.00052                                                   | 0.00023                                                          |
| pH .....                        | ( <sup>2</sup> )                                          | ( <sup>2</sup> )                                                 |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

<sup>2</sup>Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

| Pollutant or pollutant property | BAT Effluent Limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| COD <sup>1</sup> .....          | 210.0                                                          | 109.0                                                            |
| Ammonia as N .....              | 23.4                                                           | 10.6                                                             |
| Sulfide .....                   | 0.22                                                           | 0.099                                                            |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| COD <sup>1</sup> .....          | 74.0                                                           | 38.4                                                             |
| Ammonia as N .....              | 8.25                                                           | 3.8                                                              |
| Sulfide .....                   | 0.078                                                          | 0.035                                                            |

<sup>1</sup>See footnote following table in § 419.13(d).

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

(1) Size factor.

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

(2) Process factor.

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

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

(c)(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

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(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1–82/014), Table III–7, pp. 49–54.

| Pollutant or pollutant property and process type | BAT effluent limitation factor                               |                                                                  |
|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day                                        | Average of daily values for 30 consecutive days shall not exceed |
|                                                  | Metric units (kilograms per 1,000 cubic meters of feedstock) |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.037                                                        | 0.009                                                            |
| Cracking and coking .....                        | 0.419                                                        | 0.102                                                            |
| Asphalt .....                                    | 0.226                                                        | 0.055                                                            |
| Lube .....                                       | 1.055                                                        | 0.257                                                            |
| Reforming and alkylation                         | 0.377                                                        | 0.092                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.030                                                        | 0.011                                                            |
| Cracking and coking .....                        | 0.340                                                        | 0.118                                                            |
| Asphalt .....                                    | 0.183                                                        | 0.064                                                            |
| Lube .....                                       | 0.855                                                        | 0.297                                                            |
| Reforming and alkylation                         | 0.305                                                        | 0.106                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0019                                                       | 0.0009                                                           |
| Cracking and coking .....                        | 0.0218                                                       | 0.0098                                                           |
| Asphalt .....                                    | 0.0117                                                       | 0.0053                                                           |
| Lube .....                                       | 0.0549                                                       | 0.0248                                                           |
| Reforming and alkylation                         | 0.0196                                                       | 0.0088                                                           |
|                                                  | English units (pounds per 1,000 bbl of feedstock)            |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.013                                                        | 0.003                                                            |
| Cracking and coking .....                        | 0.147                                                        | 0.036                                                            |
| Asphalt .....                                    | 0.079                                                        | 0.019                                                            |
| Lube .....                                       | 0.369                                                        | 0.090                                                            |
| Reforming and alkylation                         | 0.132                                                        | 0.032                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.011                                                        | 0.004                                                            |
| Cracking and coking .....                        | 0.119                                                        | 0.041                                                            |
| Asphalt .....                                    | 0.064                                                        | 0.022                                                            |
| Lube .....                                       | 0.299                                                        | 0.104                                                            |
| Reforming and alkylation                         | 0.107                                                        | 0.037                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0007                                                       | 0.0003                                                           |
| Cracking and coking .....                        | 0.0076                                                       | 0.0034                                                           |
| Asphalt .....                                    | 0.0041                                                       | 0.0019                                                           |
| Lube .....                                       | 0.0192                                                       | 0.0087                                                           |
| Reforming and alkylation                         | 0.0069                                                       | 0.0031                                                           |

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| Phenolic compounds (4AAP)       | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.60                                                      | 0.21                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |

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| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| COD <sup>1</sup> .....          | 360.                                             | 180.                                                             |
|                                 | English units (pounds per 1,000 gallons of flow) |                                                                  |
| Phenolic compounds (4AAP) ..... | 0.0029                                           | 0.0014                                                           |
| Total chromium .....            | 0.0050                                           | 0.0018                                                           |
| Hexavalent chromium .....       | 0.00052                                          | 0.00023                                                          |
| COD <sup>1</sup> .....          | 3.0                                              | 1.5                                                              |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**\$419.34 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

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

| Pollutant or pollutant property | BCT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 34.6                                                           | 18.4                                                             |
| TSS .....                       | 23.4                                                           | 14.8                                                             |
| Oil and grease .....            | 11.1                                                           | 5.9                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 12.1                                                           | 6.5                                                              |
| TSS .....                       | 8.3                                                            | 5.25                                                             |
| Oil and grease .....            | 3.9                                                            | 2.1                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied

by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

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

(2) Process factor.

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

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

(c) The provisions of §419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

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

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

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

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

| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                       | 26.                                                              |
| TSS .....                       | 33.                                                       | 21.                                                              |
| Oil and grease .....            | 15.                                                       | 8.                                                               |
| pH .....                        | ( <sup>1</sup> )                                          | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow)          |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                                      | 0.22                                                             |
| TSS .....                       | 0.28                                                      | 0.18                                                             |
| Oil and grease .....            | 0.13                                                      | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                          | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

[50 FR 28526, July 12, 1985]

**§ 419.35 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards maximum for any 1 day |
|---------------------------------|----------------------------------------------|
|                                 | (Milligrams per liter (mg/l))                |
| Oil and grease .....            | 100                                          |
| Ammonia (as N) .....            | 1 100                                        |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.33 (a) and (b).

**40 CFR Ch. I (7–1–06 Edition)****§ 419.36 Standards of performance for new sources (NSPS).**

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

| Pollutant or pollutant property | NSPS Effluent Limitations                                      |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 21.8                                                           | 11.6                                                             |
| TSS .....                       | 14.9                                                           | 9.5                                                              |
| COD <sup>1</sup> .....          | 133.0                                                          | 69.0                                                             |
| Oil and grease .....            | 6.6                                                            | 3.5                                                              |
| Phenolic compounds .....        | 0.158                                                          | .077                                                             |
| Ammonia as N .....              | 23.4                                                           | 10.7                                                             |
| Sulfide .....                   | 0.140                                                          | 0.063                                                            |
| Total chromium .....            | 0.32                                                           | 0.19                                                             |
| Hexavalent chromium .....       | 0.025                                                          | 0.012                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 7.7                                                            | 4.1                                                              |
| TSS .....                       | 5.2                                                            | 3.3                                                              |
| COD <sup>1</sup> .....          | 47.0                                                           | 24.0                                                             |
| Oil and grease .....            | 2.4                                                            | 1.3                                                              |
| Phenolic compounds .....        | 0.056                                                          | 0.027                                                            |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.050                                                          | 0.022                                                            |
| Total chromium .....            | 0.116                                                          | 0.068                                                            |
| Hexavalent chromium .....       | 0.0096                                                         | 0.0044                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

| Process configuration | Process factor |
|-----------------------|----------------|
| Less than 4.49 .....  | 0.73           |
| 4.5 to 5.49 .....     | 0.80           |
| 5.5 to 5.99 .....     | 0.91           |
| 6.0 to 6.49 .....     | 0.99           |

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| Process configuration | Process factor |
|-----------------------|----------------|
| 6.5 to 6.99 .....     | 1.08           |
| 7.0 to 7.49 .....     | 1.17           |
| 7.5 to 7.99 .....     | 1.28           |
| 8.0 to 8.49 .....     | 1.39           |
| 8.5 to 8.99 .....     | 1.51           |
| 9.0 to 9.49 .....     | 1.65           |
| 9.5 or greater .....  | 1.72           |

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

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) *Effluent Limitations for Runoff.* [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§ 419.37 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for new sources maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Oil and grease .....            | 100                                                          |
| Ammonia (as N) .....            | <sup>1</sup> 100                                             |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.36 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying: (1) The standard; (2) by

the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow.

| Pollutant or pollutant property | Pretreatment standards for new sources maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Total chromium .....            | 1                                                            |

**Subpart D—Lube Subcategory****§ 419.40 Applicability; description of the lube subcategory.**

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping, cracking, and lube oil manufacturing processes, whether or not the facility includes any process in addition to topping, cracking, and lube oil manufacturing processes. The provisions of this subpart are not applicable, however, to facilities that include the processes specified in subparts C and E of this part.

**§ 419.41 Specialized definitions.**

The general definitions, abbreviations and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply to this subpart.

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

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

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| Pollutant or pollutant property | BPT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sup>5</sup> .....          | 50.6                                                           | 25.8                                                             |
| TSS .....                       | 35.6                                                           | 22.7                                                             |
| COD <sup>1</sup> .....          | 360.0                                                          | 187.0                                                            |
| Oil and grease .....            | 16.2                                                           | 8.5                                                              |
| Phenolic compounds .....        | 0.38                                                           | 0.184                                                            |
| Ammonia as N .....              | 23.4                                                           | 10.6                                                             |
| Sulfide .....                   | 0.33                                                           | 0.150                                                            |
| Total chromium .....            | 0.77                                                           | 0.45                                                             |
| Hexavalent chromium .....       | 0.068                                                          | 0.030                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sup>5</sup> .....          | 17.9                                                           | 9.1                                                              |
| TSS .....                       | 12.5                                                           | 8.0                                                              |
| COD <sup>1</sup> .....          | 127.0                                                          | 66.0                                                             |
| Oil and grease .....            | 5.7                                                            | 3.0                                                              |
| Phenolic compounds .....        | 0.133                                                          | 0.065                                                            |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.118                                                          | 0.053                                                            |
| Total chromium .....            | 0.273                                                          | 0.160                                                            |
| Hexavalent chromium .....       | 0.024                                                          | 0.011                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

| Process configuration | Process factor |
|-----------------------|----------------|
| Less than 6.49 .....  | 0.81           |
| 6.5 to 7.49 .....     | 0.88           |
| 7.5 to 7.99 .....     | 1.00           |
| 8.0 to 8.49 .....     | 1.09           |
| 8.5 to 8.99 .....     | 1.19           |
| 9.0 to 9.49 .....     | 1.29           |
| 9.5 to 9.99 .....     | 1.41           |
| 10.0 to 10.49 .....   | 1.53           |
| 10.5 to 10.99 .....   | 1.67           |
| 11.0 to 11.49 .....   | 1.82           |
| 11.5 to 11.99 .....   | 1.98           |
| 12.0 to 12.49 .....   | 2.15           |

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| Process configuration | Process factor |
|-----------------------|----------------|
| 12.5 to 12.99 .....   | 2.34           |
| 13.0 or greater ..... | 2.44           |

(3) Example of the application of the above factors. Example—Lube refinery 125, 000 bbl per stream day throughput.

## CALCULATION OF THE PROCESS CONFIGURATION

| Process category          | Process included                             | Weighting factor |
|---------------------------|----------------------------------------------|------------------|
| Crude .....               | Atm crude distillation .....                 | 1                |
|                           | Vacuum, crude distillation ..                |                  |
|                           | Desalting .....                              |                  |
| Cracking and coking ..... | Fluid cat. cracking .....                    | 6                |
|                           | Vis-breaking .....                           |                  |
|                           | Thermal cracking .....                       |                  |
|                           | Moving bed cat. cracking ...                 |                  |
|                           | Hydrocracking .....                          |                  |
|                           | Fluid coking .....                           |                  |
|                           | Delayed coking .....                         |                  |
| Lube .....                | Further defined in the development document. | 13               |
| Asphalt .....             | Asphalt production .....                     | 12               |
|                           | Asphalt oxidation .....                      |                  |
|                           | Asphalt emulsifying .....                    |                  |

| Process                              | Capacity (1,000 bbl per stream day) | Capacity relative to throughput | Weighting Factor | Processing configuration |
|--------------------------------------|-------------------------------------|---------------------------------|------------------|--------------------------|
| Crude:                               |                                     |                                 |                  |                          |
| Atm .....                            | 125.0                               | 1.0                             | .....            | .....                    |
| Vacu ..                              | 60.0                                | 0.48                            | .....            | .....                    |
| Desalting ..                         | 125.0                               | 1.0                             | .....            | .....                    |
| Total .....                          |                                     | 2.48                            | ×1               | =2.48                    |
| Cracking-FCC .....                   | 41.0                                | 0.328                           | .....            | .....                    |
| Hydrocracking ..                     | 20.0                                | 0.160                           | .....            | .....                    |
| Total .....                          |                                     | 0.488                           | ×6               | =2.93                    |
| Lubes .....                          | 5.3                                 | 0.042                           | .....            | .....                    |
|                                      | 4.0                                 | 0.032                           | .....            | .....                    |
|                                      | 4.9                                 | 0.039                           | .....            | .....                    |
| Total .....                          |                                     | 0.113                           | ×13              | =1.47                    |
| Asphalt ...                          | 4.0                                 | 0.032                           | ×12              | =.38                     |
| Refinery process configuration ..... |                                     |                                 |                  | =7.26                    |

Notes:

See Table § 419.42(b)(2) for process factor. Process factor=0.88.

See Table § 419.42(b)(1) for size factor for 125,000 bbl per stream day lube refinery. Size factor=0.97.

To calculate the limits for each parameter, multiply the limit § 419.42(a) by both the process factor and size factor. BOD<sup>5</sup> limit (maximum for any 1 day)=17.9×0.88×0.97=15.3 lb. per 1,000 bbl of feedstock.

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

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(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property | BPT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                       | 26.                                                              |
| TSS .....                       | 33.                                                       | 21.                                                              |
| COD <sup>1</sup> .....          | 360.                                                      | 180.                                                             |
| Oil and grease .....            | 15.                                                       | 8.                                                               |
| Phenolic compounds (4AAP) ..... | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.73                                                      | 0.43                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |
| pH .....                        | ( <sup>2</sup> )                                          | ( <sup>2</sup> )                                                 |

| Pollutant or pollutant property | BPT effluent limitations for contaminated runoff |                                                                  |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
|                                 | English units (pounds per 1,000 gallons of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                             | 0.22                                                             |
| TSS .....                       | 0.28                                             | 0.18                                                             |
| COD <sup>1</sup> .....          | 3.0                                              | 1.5                                                              |
| Oil and grease .....            | 0.13                                             | 0.067                                                            |
| Phenolic compounds (4AAP) ..... | 0.0029                                           | 0.0014                                                           |
| Total chromium .....            | 0.0060                                           | 0.0035                                                           |
| Hexavalent chromium .....       | 0.00052                                          | 0.00023                                                          |
| pH .....                        | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

<sup>2</sup>Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

| Pollutant or pollutant property | BAT effluent limitations                           |                                                                  |
|---------------------------------|----------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                              | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per                        |                                                                  |
| COD <sup>1</sup> .....          | 360.0                                              | 187.0                                                            |
| Ammonia as N .....              | 23.4                                               | 10.6                                                             |
| Sulfide .....                   | 0.33                                               | 0.150                                                            |
|                                 | English units (pounds per 1,000 bbl of feed-stock) |                                                                  |
| COD <sup>1</sup> .....          | 127.0                                              | 66.0                                                             |
| Ammonia as N .....              | 8.3                                                | 3.8                                                              |



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| Pollutant or pollutant property | BAT effluent limitations |                                                                  |
|---------------------------------|--------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day    | Average of daily values for 30 consecutive days shall not exceed |
| Sulfide .....                   | 0.118                    | 0.053                                                            |

<sup>1</sup> See footnote following table in § 419.13(d).

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

(1) Size factor.

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

(2) Process factor.

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

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

(c)(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated

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as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1–82/014), Table III–7, pp. 49–54.

| Pollutant or pollutant property and process type | BAT effluent limitation factor                                 |                                                                  |
|--------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                                  | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| Phenolic compounds (4AAP):                       |                                                                |                                                                  |
| Crude .....                                      | 0.037                                                          | 0.009                                                            |
| Cracking and coking .....                        | 0.419                                                          | 0.102                                                            |
| Asphalt .....                                    | 0.226                                                          | 0.055                                                            |
| Lube .....                                       | 1.055                                                          | 0.257                                                            |
| Reforming and alkylation                         | 0.377                                                          | 0.092                                                            |
| Total chromium:                                  |                                                                |                                                                  |
| Crude .....                                      | 0.030                                                          | 0.011                                                            |
| Cracking and coking .....                        | 0.340                                                          | 0.118                                                            |
| Asphalt .....                                    | 0.183                                                          | 0.064                                                            |
| Lube .....                                       | 0.855                                                          | 0.297                                                            |
| Reforming and alkylation                         | 0.305                                                          | 0.106                                                            |
| Hexavalent chromium:                             |                                                                |                                                                  |
| Crude .....                                      | 0.0019                                                         | 0.0009                                                           |
| Cracking and coking .....                        | 0.0218                                                         | 0.0098                                                           |
| Asphalt .....                                    | 0.0117                                                         | 0.0053                                                           |
| Lube .....                                       | 0.0549                                                         | 0.0248                                                           |
| Reforming and alkylation                         | 0.0196                                                         | 0.0088                                                           |
|                                                  | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| Phenolic compounds (4AAP):                       |                                                                |                                                                  |
| Crude .....                                      | 0.013                                                          | 0.003                                                            |
| Cracking and coking .....                        | 0.147                                                          | 0.036                                                            |
| Asphalt .....                                    | 0.079                                                          | 0.019                                                            |
| Lube .....                                       | 0.369                                                          | 0.090                                                            |
| Reforming and alkylation                         | 0.132                                                          | 0.032                                                            |
| Total chromium:                                  |                                                                |                                                                  |
| Crude .....                                      | 0.011                                                          | 0.004                                                            |
| Cracking and coking .....                        | 0.119                                                          | 0.041                                                            |
| Asphalt .....                                    | 0.064                                                          | 0.022                                                            |
| Lube .....                                       | 0.299                                                          | 0.104                                                            |
| Reforming and alkylation                         | 0.107                                                          | 0.037                                                            |
| Hexavalent chromium:                             |                                                                |                                                                  |
| Crude .....                                      | 0.0007                                                         | 0.0003                                                           |
| Cracking and coking .....                        | 0.0076                                                         | 0.0034                                                           |
| Asphalt .....                                    | 0.0041                                                         | 0.0019                                                           |
| Lube .....                                       | 0.0192                                                         | 0.0087                                                           |
| Reforming and alkylation                         | 0.0069                                                         | 0.0031                                                           |

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

The following example presents the derivation of a BAT phenolic compound

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(4AAP) effluent limitation (30-day average) for a petroleum refinery permit. The methodology is also applicable to hexavalent chromium and total chromium.

| Refinery process                                   | Process feedstock rate 1,000 bbl/day |
|----------------------------------------------------|--------------------------------------|
| 1. Atmospheric crude distillation .....            | 100                                  |
| 2. Crude desalting .....                           | 50                                   |
| 3. Vacuum crude distillation .....                 | 75                                   |
| Total crude processes (C) .....                    | 225                                  |
| 6. Fluid catalytic cracking .....                  | 25                                   |
| 10. Hydrocracking .....                            | 20                                   |
| Total cracking and coking processes (K) .....      | 45                                   |
| 18. Asphalt production .....                       | 5                                    |
| Total asphalt processes (A) .....                  | 5                                    |
| 21. Hydrofining .....                              | 3                                    |
| Total lube processes (L) .....                     | 3                                    |
| 8. Catalytic reforming .....                       | 10                                   |
| Total reforming and alkylation processes (R) ..... | 10                                   |

NOTE: 30 day average effluent limitation for phenolic compounds (4AAP), lb/day =  $(0.003)(225) + (0.036)(45) + (0.019)(5) + (0.090)(3) + (0.032)(10) = 2.98$  lb/day.

(d) The provisions of §419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

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

| Pollutant or pollutant property                           | BAT effluent limitations for contaminated runoff |                                                                  |
|-----------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                                           | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                  |                                                                  |
| Phenolic compounds (4AAP)                                 | 0.35                                             | 0.17                                                             |
| Total chromium .....                                      | 0.60                                             | 0.21                                                             |
| Hexavalent chromium .....                                 | 0.062                                            | 0.028                                                            |
| COD <sup>1</sup> .....                                    | 360.                                             | 180.                                                             |
| English units (pounds per 1,000 gallons of flow)          |                                                  |                                                                  |
| Phenolic compounds (4AAP)                                 | 0.0029                                           | 0.0014                                                           |
| Total chromium .....                                      | 0.0050                                           | 0.0018                                                           |
| Hexavalent chromium .....                                 | 0.00052                                          | 0.00023                                                          |
| COD <sup>1</sup> .....                                    | 3.0                                              | 1.5                                                              |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28524, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

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

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| Pollutant or pollutant property | BCT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 50.6                                                           | 25.8                                                             |
| TSS .....                       | 35.6                                                           | 22.7                                                             |
| Oil and Grease .....            | 16.2                                                           | 8.5                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 17.9                                                           | 9.1                                                              |
| TSS .....                       | 12.5                                                           | 8.0                                                              |
| Oil and Grease .....            | 5.7                                                            | 3.0                                                              |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

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

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable

to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

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

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

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

| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff         |                                                                  |
|---------------------------------|----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                    | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric unit (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                      | 26.                                                              |
| TSS .....                       | 33.                                                      | 21.                                                              |
| Oil and grease .....            | 15.                                                      | 8.                                                               |
| pH .....                        | ( <sup>1</sup> )                                         | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow)         |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                                     | 0.22                                                             |
| TSS .....                       | 0.28                                                     | 0.18                                                             |
| Oil and grease .....            | 0.13                                                     | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                         | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

[50 FR 28526, July 12, 1985]

**Environmental Protection Agency****§419.46****§419.45 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for existing sources—maximum for any 1 day |
|---------------------------------|-------------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                       |
| Oil and grease .....            | 100                                                               |
| Ammonia (as N) .....            | <sup>1</sup> 100                                                  |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in §419.43 (a) and (b).

**§419.46 Standards of performance for new sources (NSPS).**

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

| Pollutant or pollutant property | NSPS effluent limitations                                      |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 34.6                                                           | 18.4                                                             |
| TSS .....                       | 23.4                                                           | 14.9                                                             |
| COD <sup>1</sup> .....          | 245.0                                                          | 126.0                                                            |
| Oil and grease .....            | 10.5                                                           | 5.6                                                              |
| Phenolic compounds .....        | 0.25                                                           | 0.12                                                             |
| Ammonia as N .....              | 23.4                                                           | 10.7                                                             |
| Sulfide .....                   | 0.220                                                          | 0.10                                                             |
| Total chromium .....            | 0.52                                                           | 0.31                                                             |
| Hexavalent chromium .....       | 0.046                                                          | 0.021                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sup>1</sup> .....          | 12.2                                                           | 6.5                                                              |
| TSS .....                       | 8.3                                                            | 5.3                                                              |
| COD <sup>1</sup> .....          | 87.0                                                           | 45.0                                                             |
| Oil and grease .....            | 3.8                                                            | 2.0                                                              |
| Phenolic compounds .....        | 0.088                                                          | 0.043                                                            |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.078                                                          | 0.035                                                            |
| Total chromium .....            | 0.180                                                          | 0.105                                                            |
| Hexavalent chromium .....       | 0.022                                                          | 0.0072                                                           |

| Pollutant or pollutant property | NSPS effluent limitations |                                                                  |
|---------------------------------|---------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day     | Average of daily values for 30 consecutive days shall not exceed |
| pH .....                        | ( <sup>2</sup> )          | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in §419.13(d).

<sup>2</sup> Within the range 6.0 to 9.0.

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

(1) Size factor.

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

(2) Process factor.

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

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

(c) The provisions of §419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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(e) *Effluent Limitations for Runoff.*  
[Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§ 419.47 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for new sources, maximum for any 1 day |
|---------------------------------|---------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                   |
| Oil and grease .....            | 100                                                           |
| Ammonia (as N) .....            | <sup>1</sup> 100                                              |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.46 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying: (1) The standard; (2) by the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow.

| Pollutant or pollutant property | Pretreatment standards for new sources, maximum for any 1 day |
|---------------------------------|---------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                   |
| Total chromium .....            | 1                                                             |

### Subpart E—Integrated Subcategory

**§ 419.50 Applicability; description of the integrated subcategory.**

The provisions of this subpart are applicable to all discharges resulting from any facility that produces petroleum products by the use of topping, cracking, lube oil manufacturing processes, and petrochemical operations,

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whether or not the facility includes any process in addition to topping, cracking, lube oil manufacturing processes, and petrochemical operations.

**§ 419.51 Specialized definitions.**

The general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.31 shall apply to this subpart.

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

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

| Pollutant or pollutant property | BPT Effluent Limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 54.4                                                           | 28.9                                                             |
| TSS .....                       | 37.3                                                           | 23.7                                                             |
| COD <sup>1</sup> .....          | 388.0                                                          | 198.0                                                            |
| Oil and grease .....            | 17.1                                                           | 9.1                                                              |
| Phenolic compounds .....        | 0.40                                                           | 0.192                                                            |
| Ammonia as N .....              | 23.4                                                           | 10.6                                                             |
| Sulfide .....                   | 0.35                                                           | 0.158                                                            |
| Total Chromium .....            | 0.82                                                           | 0.48                                                             |
| Hexavalent chromium .....       | 0.068                                                          | 0.032                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sup>1</sup> .....          | 19.2                                                           | 10.2                                                             |
| TSS .....                       | 13.2                                                           | 8.4                                                              |
| COD <sup>1</sup> .....          | 136.0                                                          | 70.0                                                             |
| Oil and grease .....            | 6.0                                                            | 3.2                                                              |
| Phenolic compounds .....        | 0.14                                                           | 0.068                                                            |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.124                                                          | 0.056                                                            |
| Total chromium .....            | 0.29                                                           | 0.17                                                             |
| Hexavalent chromium .....       | 0.025                                                          | 0.011                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in § 419.13(d).

<sup>2</sup> Within the range 6.0 to 9.0.

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

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maximum average of daily values for thirty consecutive days.

(1) Size factor.

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

(2) Process factor.

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

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

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC)

based upon an analysis of any single grab or composite sample.

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

| Pollutant or pollutant property                           | BPT effluent limitations for contaminated runoff |                                                                  |
|-----------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|
|                                                           | Maximum for any 1 day                            | Average of daily values for 30 consecutive days shall not exceed |
| Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 48.                                              | 26.                                                              |
| TSS .....                                                 | 33.                                              | 21.                                                              |
| COD <sup>1</sup> .....                                    | 360.                                             | 180.                                                             |
| Oil and grease .....                                      | 15.                                              | 8.                                                               |
| Phenolic compounds (4AAP) .....                           | 0.35                                             | 0.17                                                             |
| Total chromium .....                                      | 0.73                                             | 0.43                                                             |
| Hexavalent chromium .....                                 | 0.062                                            | 0.028                                                            |
| pH .....                                                  | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |
| English units (pounds per 1,000 gallons of flow)          |                                                  |                                                                  |
| BOD <sub>5</sub> .....                                    | 0.40                                             | 0.22                                                             |
| TSS .....                                                 | 0.28                                             | 0.18                                                             |
| COD <sup>1</sup> .....                                    | 3.0                                              | 1.5                                                              |
| Oil and grease .....                                      | 0.13                                             | 0.067                                                            |
| Phenolic compounds (4AAP) .....                           | 0.0029                                           | 0.0014                                                           |
| Total chromium .....                                      | 0.0060                                           | 0.0035                                                           |
| Hexavalent chromium .....                                 | 0.00052                                          | 0.00023                                                          |
| pH .....                                                  | ( <sup>2</sup> )                                 | ( <sup>2</sup> )                                                 |

<sup>1</sup> In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

<sup>2</sup> Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point

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source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

| Pollutant or pollutant property | BAT Effluent Limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| COD <sup>1</sup> .....          | 388.0                                                          | 198.0                                                            |
| Ammonia as N .....              | 23.4                                                           | 10.6                                                             |
| Sulfide .....                   | 0.35                                                           | 0.158                                                            |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| COD <sup>1</sup> .....          | 136.0                                                          | 70.0                                                             |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.124                                                          | 0.056                                                            |

<sup>1</sup> See footnote following table in § 419.13(d).

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 124.9 .....                 | 0.73        |
| 125.0 to 149.9 .....                  | 0.76        |
| 150.0 to 174.9 .....                  | 0.83        |
| 175.0 to 199.9 .....                  | 0.91        |
| 200 to 224.9 .....                    | 0.99        |
| 225 or greater .....                  | 1.04        |

(2) Process factor.

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

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

(c)(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1–82/014), Table III–7, pp. 49–54.

| Pollutant or pollutant property and process type | BAT effluent limitation factor                               |                                                                  |
|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day                                        | Average of daily values for 30 consecutive days shall not exceed |
|                                                  | Metric units (kilograms per 1,000 cubic meters of feedstock) |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.037                                                        | 0.009                                                            |
| Cracking and coking .....                        | 0.419                                                        | 0.102                                                            |
| Asphalt .....                                    | 0.226                                                        | 0.055                                                            |
| Lube .....                                       | 1.055                                                        | 0.257                                                            |
| Reforming and alkylation .....                   | 0.377                                                        | 0.092                                                            |
| Total chromium:                                  |                                                              |                                                                  |
| Crude .....                                      | 0.030                                                        | 0.011                                                            |
| Cracking and coking .....                        | 0.340                                                        | 0.118                                                            |
| Asphalt .....                                    | 0.183                                                        | 0.064                                                            |
| Lube .....                                       | 0.855                                                        | 0.297                                                            |
| Reforming and alkylation .....                   | 0.305                                                        | 0.106                                                            |
| Hexavalent chromium:                             |                                                              |                                                                  |
| Crude .....                                      | 0.0019                                                       | 0.0009                                                           |
| Cracking and coking .....                        | 0.0218                                                       | 0.0098                                                           |
| Asphalt .....                                    | 0.0117                                                       | 0.0053                                                           |
| Lube .....                                       | 0.0549                                                       | 0.0248                                                           |
| Reforming and alkylation .....                   | 0.0196                                                       | 0.0088                                                           |
|                                                  | English units (pounds per 1,000 bbl of feedstock)            |                                                                  |
| Phenolic compounds (4AAP):                       |                                                              |                                                                  |
| Crude .....                                      | 0.013                                                        | 0.003                                                            |
| Cracking and coking .....                        | 0.147                                                        | 0.036                                                            |
| Asphalt .....                                    | 0.079                                                        | 0.019                                                            |

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| Pollutant or pollutant property and process type | BAT effluent limitation factor |                                                                  |
|--------------------------------------------------|--------------------------------|------------------------------------------------------------------|
|                                                  | Maximum for any 1 day          | Average of daily values for 30 consecutive days shall not exceed |
| Lube .....                                       | 0.369                          | 0.090                                                            |
| Reforming and alkylation .....                   | 0.132                          | 0.032                                                            |
| Total chromium:                                  |                                |                                                                  |
| Crude .....                                      | 0.011                          | 0.004                                                            |
| Cracking and coking .....                        | 0.119                          | 0.041                                                            |
| Asphalt .....                                    | 0.064                          | 0.022                                                            |
| Lube .....                                       | 0.299                          | 0.104                                                            |
| Reforming and alkylation .....                   | 0.107                          | 0.037                                                            |
| Hexavalent chromium:                             |                                |                                                                  |
| Crude .....                                      | 0.0007                         | 0.0003                                                           |
| Cracking and coking .....                        | 0.0076                         | 0.0034                                                           |
| Asphalt .....                                    | 0.0041                         | 0.0019                                                           |
| Lube .....                                       | 0.0192                         | 0.0087                                                           |
| Reforming and alkylation .....                   | 0.0069                         | 0.0031                                                           |

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

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

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

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quan-

tity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

| Pollutant or pollutant property | BAT effluent limitations for contaminated runoff          |                                                                  |
|---------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                     | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of flow) |                                                                  |
| Phenolic compounds (4AAP) ..... | 0.35                                                      | 0.17                                                             |
| Total chromium .....            | 0.60                                                      | 0.21                                                             |
| Hexavalent chromium .....       | 0.062                                                     | 0.028                                                            |
| COD <sup>1</sup> .....          | 360.                                                      | 180.                                                             |
|                                 | English units (pounds per 1,000 gallons of flow)          |                                                                  |
| Phenolic compounds (4AAP) ..... | 0.0029                                                    | 0.0014                                                           |
| Total chromium .....            | 0.0050                                                    | 0.0018                                                           |
| Hexavalent chromium .....       | 0.00052                                                   | 0.00023                                                          |
| COD <sup>1</sup> .....          | 3.0                                                       | 1.5                                                              |

<sup>1</sup>In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD<sub>5</sub>. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD<sub>5</sub>.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

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

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

| Pollutant or pollutant property | BCT effluent limitations                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 54.4                                                           | 28.9                                                             |
| TSS .....                       | 37.3                                                           | 23.7                                                             |
| Oil and grease .....            | 17.1                                                           | 9.1                                                              |



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| Pollutant or pollutant property | BCT effluent limitations                          |                                                                  |
|---------------------------------|---------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                             | Average of daily values for 30 consecutive days shall not exceed |
| pH .....                        | ( <sup>1</sup> )                                  | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 19.2                                              | 10.2                                                             |
| TSS .....                       | 13.2                                              | 8.4                                                              |
| Oil and grease .....            | 6.0                                               | 3.2                                                              |
| ph .....                        | ( <sup>1</sup> )                                  | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 124.9 .....                 | 0.73        |
| 125.0 to 149.9 .....                  | 0.76        |
| 150.0 to 174.9 .....                  | 0.83        |
| 175.0 to 199.9 .....                  | 0.91        |
| 200.0 to 224.9 .....                  | 0.99        |
| 225.0 or greater .....                | 1.04        |

(2) Process factor.

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

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

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

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

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

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

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

| Pollutant or pollutant property | BCT effluent limitations for contaminated runoff               |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 48.                                                            | 26.                                                              |
| TSS .....                       | 33.                                                            | 21.                                                              |
| Oil and grease .....            | 15.                                                            | 8.                                                               |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |
|                                 | English units (pounds per 1,000 gallons of flow)               |                                                                  |
| BOD <sub>5</sub> .....          | 0.40                                                           | 0.22                                                             |
| TSS .....                       | 0.28                                                           | 0.18                                                             |
| Oil and grease .....            | 0.13                                                           | 0.067                                                            |
| pH .....                        | ( <sup>1</sup> )                                               | ( <sup>1</sup> )                                                 |

<sup>1</sup> Within the range of 6.0 to 9.0.

[50 FR 28527, July 12, 1985]

**§ 419.55 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject

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to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for existing sources—maximum for any 1 day |
|---------------------------------|-------------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                       |
| Oil and grease .....            | 100                                                               |
| Ammonia (as N) .....            | 1100                                                              |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in §419.53 (a) and (b).

**§419.56 Standards of performance for new sources (NSPS).**

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

| Pollutant or pollutant property | NSPS effluent limitation                                       |                                                                  |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
|                                 | Maximum for any 1 day                                          | Average of daily values for 30 consecutive days shall not exceed |
|                                 | Metric units (kilograms per 1,000 m <sup>3</sup> of feedstock) |                                                                  |
| BOD <sub>5</sub> .....          | 41.6                                                           | 22.1                                                             |
| TSS .....                       | 28.1                                                           | 17.9                                                             |
| COD <sup>1</sup> .....          | 295.0                                                          | 152.0                                                            |
| Oil and grease .....            | 12.6                                                           | 6.7                                                              |
| Phenolic compounds .....        | 0.30                                                           | 0.14                                                             |
| Ammonia as N .....              | 23.4                                                           | 10.7                                                             |
| Sulfide .....                   | 0.26                                                           | 0.12                                                             |
| Total chromium .....            | 0.64                                                           | 0.37                                                             |
| Hexavalent chromium .....       | 0.052                                                          | 0.024                                                            |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |
|                                 | English units (pounds per 1,000 bbl of feedstock)              |                                                                  |
| BOD <sub>5</sub> .....          | 14.7                                                           | 7.8                                                              |
| TSS .....                       | 9.9                                                            | 6.3                                                              |
| COD <sup>1</sup> .....          | 104.0                                                          | 54.0                                                             |
| Oil and grease .....            | 4.5                                                            | 2.4                                                              |
| Phenolic compounds .....        | 0.105                                                          | 0.051                                                            |
| Ammonia as N .....              | 8.3                                                            | 3.8                                                              |
| Sulfide .....                   | 0.093                                                          | 0.042                                                            |
| Total chromium .....            | 0.220                                                          | 0.13                                                             |
| Hexavalent chromium .....       | 0.019                                                          | 0.0084                                                           |
| pH .....                        | ( <sup>2</sup> )                                               | ( <sup>2</sup> )                                                 |

<sup>1</sup> See footnote following table in §419.13(d).

<sup>2</sup> Within the range 6.0 to 9.0.

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

(1) Size factor.

| 1,000 bbl of feedstock per stream day | Size factor |
|---------------------------------------|-------------|
| Less than 124.9 .....                 | 0.73        |
| 125.0 to 149.9 .....                  | 0.76        |
| 150.0 to 174.9 .....                  | 0.83        |
| 175.0 to 199.9 .....                  | 0.91        |
| 200 to 224.9 .....                    | 0.99        |
| 225 or greater .....                  | 1.04        |

(2) Process factor.

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

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

(c) The provisions of §419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) *Effluent Limitations for Runoff.* [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**§419.57 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart

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which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Oil and grease .....            | 100                                                          |
| Ammonia (as N) .....            | 100                                                          |

<sup>1</sup> Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.56 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying: (1) The standards; (2) by the total refinery flow to the POTW; and (3) by the ratio of the cooling tower discharge flow to the total refinery flow.

| Pollutant or pollutant property | Pretreatment standards for new sources—maximum for any 1 day |
|---------------------------------|--------------------------------------------------------------|
|                                 | Milligrams per liter (mg/l)                                  |
| Total chromium .....            | 1                                                            |

**APPENDIX A TO PART 419—PROCESSES INCLUDED IN THE DETERMINATION OF BAT EFFLUENT LIMITATIONS FOR TOTAL CHROMIUM, HEXAVALENT CHROMIUM, AND PHENOLIC COMPOUNDS (4AAP)**

*Crude Processes*

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

*Cracking and Coking Processes*

4. Visbreaking
5. Thermal Cracking
6. Fluid Catalytic Cracking
7. Moving Bed Catalytic Cracking
10. Hydrocracking
15. Delayed Coking
16. Fluid Coking

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## 54. Hydrotreating

*Asphalt Processes*

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

*Lube Processes*

21. Hydrofining, Hydrofinishing, Lube Hydrofining
22. White Oil Manufacture
23. Propane Dewaxing, Propane Deasphalting, Propane Fractioning, Propane Deresining
24. Duo Sol, Solvent Treating, Solvent Extraction, Duotreating, Solvent Dewaxing, Solvent Deasphalting
25. Lube Vac Twr, Oil Fractionation, Batch Still (Naphtha Strip), Bright Stock Treating
26. Centrifuge and Chilling
27. MEK Dewaxing, Ketone Dewaxing, MEK-Toluene Dewaxing
28. Deoiling (wax)
29. Naphthenic Lubes Production
30. SO<sub>2</sub> Extraction
34. Wax Pressing
35. Wax Plant (with Neutral Separation)
36. Furfural Extraction
37. Clay Contacting—Percolation
38. Wax Sweating
39. Acid Treating
40. Phenol Extraction

*Reforming and Alkylation Processes*

8. H<sub>2</sub>SO<sub>4</sub> Alkylation
12. Catalytic Reforming

[50 FR 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

**PART 420—IRON AND STEEL MANUFACTURING POINT SOURCE CATEGORY**

**GENERAL PROVISIONS**

**Sec.**

- 420.01 Applicability.
- 420.02 General definitions.
- 420.03 Alternative effluent limitations representing the degree of effluent reduction attainable by the application of best practicable control technology currently available, best available technology economically achievable, best available demonstrated control technology, and best conventional pollutant control technology (the “water bubble”).
- 420.04 Calculation of pretreatment standards.
- 420.05 Pretreatment standards compliance date.
- 420.06 Removal credits for phenols (4AAP).