

Clean affected areas and remove any encrusted discharge or exudate, and apply sparingly either ointment in a thin film.<sup>1</sup>

(ii) For otic use: Clear ear canal of impacted cerumen, remove any foreign bodies such as grass awns and ticks, and instill three to five drops of petrolatum base ointment. Preliminary use of a local anesthetic may be advisable.<sup>1</sup>

(iii) For infected anal glands and cystic areas: Drain gland or cyst and fill with petrolatum base ointment.<sup>1</sup>

(2) *Indications for use.* (i) Topically: Use either ointment in dogs and cats for anti-inflammatory, antipruritic, antifungal, and antibacterial treatment of superficial bacterial infections, and for dermatologic disorders characterized by inflammation and dry or exudative dermatitis, particularly associated with bacterial or candidal (*Candida albicans*) infections.<sup>1</sup>

(ii) Otitis, cysts, and anal gland infections: Use petrolatum base ointment in dogs and cats for the treatment of acute and chronic otitis and interdigital cysts, and in dogs for anal gland infections.<sup>1</sup>

(3) *Limitations.* For mild inflammations, use once daily to once a week. For severe conditions, apply initially two to three times daily, decreasing frequency as improvement occurs. Not intended for treatment of deep abscesses or deep-seated infections. Not for ophthalmic use. Federal law restricts this drug to use by or on the order of a licensed veterinarian.<sup>1</sup>

Effective date: This regulation becomes effective July 11, 1978.

(Sec. 512(i), 82 Stat. 347 (21 U.S.C. 360b(i)).)

Dated: June 28, 1978.

C. D. VAN HOUWELING,  
*Director, Bureau of  
Veterinary Medicine.*

[FR Doc. 78-18862 Filed 7-10-78; 8:45 am]

[4310-02]

Title 25—Indians

CHAPTER I—BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF THE INTERIOR

PART 221—OPERATIONS AND MAINTENANCE CHARGES

San Carlos Indian Irrigation Project, Arizona

AGENCY: Bureau of Indian Affairs, Interior.

<sup>1</sup>These conditions are NAS/NRC reviewed and deemed effective. Applications for these uses need not include effectiveness data as specified by §514.111 of this chapter, but may require bioequivalency and safety information.

ACTION: Final rule.

SUMMARY: This rule deletes from the Code of Federal Regulations (CFR), regulations on the cost of operation and maintenance of the San Carlos Indian Irrigation Project. This action is necessary because all new assessment rates will be published as notice documents in the FEDERAL REGISTER, and the assessment rates will no longer appear in the CFR. The purpose of this rule is to delete the applicable section from the CFR. A notice establishing new assessment rates is being published in the FEDERAL REGISTER simultaneously with this regulation.

EFFECTIVE DATE: This regulation shall become effective July 7, 1978.

FOR FURTHER INFORMATION CONTACT:

James L. McCabe, Project Engineer, San Carlos Irrigation Project, Post Office Box 456, Coolidge, Ariz. 85228, telephone 602-723-5439.

SUPPLEMENTARY INFORMATION:

The principal author of this document is Cecil A. Wright, Bureau of Indian Affairs, Phoenix, Ariz. 85011, telephone 602-261-4184.

Pursuant to §191.1(e) of part 191, chapter 1, subchapter T of title 25 of the Code of Federal Regulations, this final regulation is published under authority delegated to the Assistant Secretary for Indian Affairs by the Secretary of the Interior in 230 DM 1 and redelegated by the Assistant Secretary for Indian Affairs to the Area Directors in 10 BIAM 3.

The authority to issue this regulation is vested in the Secretary of the Interior by 5 U.S.C. 301 and 25 U.S.C. 385.

The regulation should read as follows:

§ 221.63 [Deleted]

Section 221.63 of part 221, chapter 1, subchapter T, of title 25 of the Code of Federal Regulations, is hereby deleted.

NOTE.—It is hereby certified that the economic and inflationary impacts of this final regulation have been carefully evaluated in accordance with Executive Order 11821.

HAROLD D. ROBERSON,  
*Acting Assistant  
Area Director.*

[FR Doc. 78-19030 Filed 7-10-78; 8:45 am]

[6560-01]

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER N—EFFLUENT GUIDELINES AND STANDARDS

[FRL 923-7]

PART 440—ORE MINING AND DRESSING POINT SOURCE CATEGORY

Effluent Limitations Guidelines for Existing Sources

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This rule promulgates effluent limitation guidelines for existing facilities engaged in the mining and milling of base and precious metals, and iron, aluminum, ferroalloy, uranium, radium, vanadium, and mercury and titanium ores. The final regulation amends an interim final regulation which was promulgated on November 6, 1975 (40 FR 51722), and represents the degree of control achievable by the application of the best practicable control technology currently available (BPT). These guidelines are issued under the Federal Water Pollution Control Act and are intended to restrict the discharge of pollutants into the Nation's waters.

EFFECTIVE DATE: July 11, 1978.

FOR FURTHER INFORMATION CONTACT:

William Tellard, Branch Chief, Effluent Guidelines Division (WH-552), Office of Water Planning and Standards, Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460, 202-426-2726.

SUPPLEMENTARY INFORMATION: Comments were solicited on the interim final rulemaking promulgated on November 6, 1975 (40 FR 51722). On May 24, 1976, the limitations guidelines for the base and precious metals subcategory, one section of the ferroalloy subcategory and the uranium, radium, and vanadium ores subcategory were suspended until November 1, 1976, and the comment period on these subcategories was extended until July 15, 1976 (41 FR 21191). On January 17, 1977, the suspension was extended until April 30, 1977 (42 FR 3165). Review of submitted comments and further analysis of the data base has resulted in a number of changes in the interim final regulations. Some of the comments submitted indicated that further clarification was required of certain terms and definitions used in the interim final regulations. The

## SUMMARY AND BASIS OF EFFLUENT LIMITATIONS GUIDELINES

The report entitled "Development Document for Effluent Limitations Guidelines for the Ore Mining and Dressing Point Source Category, April 1978," details the analysis undertaken in support of these regulations and is available for inspection in the EPA Public Information Reference Unit, Room 2404, Waterside Mall, 401 M Street SW., Washington, D.C. 20460, at all EPA regional offices, and at State water pollution control offices. The economic analysis referenced below which was prepared for EPA on the potential effects of the regulation is also available for inspection at these locations. An additional limited number of copies of both reports are available. Persons wishing to obtain a copy may write the National Technical Information Service, Springfield, Va. 22151.

## ECONOMIC ANALYSIS

The promulgated regulations are not expected to affect significantly prices, production, or capital availability. Little impact is expected on industry growth, employment, local economies or the balance of trade.

The potential economic impacts are discussed in greater detail in appendix A to this Preamble and in the report entitled "Economic Analysis of Effluent Limitations Guidelines: The Ore Mining and Dressing Industry."

The Environmental Protection Agency has determined that promulgation of these regulations does not require preparation of a regulatory analysis under Executive Order 12044.

## ENVIRONMENTAL BENEFITS

The effluent limitations guidelines promulgated today are based on the best practicable control technology currently available. The effluent limitations are not designed to obtain designated water quality levels in the streams and other receiving water bodies.

Section VI of the development document, selection of pollutant parameters, covers the rationale used in selecting the effluent characteristics controlled by these regulations. It is not practical in this preamble to summarize the many works that have been written on the environmental effects of waste water discharges from the ore mining and dressing point source category. In examining these works one can appreciate that significant environmental benefits will accrue should reduction in ore mining and dressing pollutant loadings be achieved.

Users of water in areas affected by the discharges from ore mines and mills include industrial plants, farms, utilities, municipal water supplies, and all who use these waters for recre-

ational activities. The Agency has concluded there will be significant environmental benefits, both indirect and direct, if compliance with these regulations is accomplished.

## MAJOR CHANGES AND CLARIFICATIONS

After extensive review of comments on the interim final BPT regulations and additional studies, the Agency has made the following major changes and clarifications to the interim final regulations:

(1) The effluent limitations restricting the discharge of copper, lead, and zinc from mines and ore dressing mills in the base and precious metals subcategory have been adjusted slightly upward to reflect new data developed by the Agency and data supplied with industry comments on the interim final regulation. Ores included in the base and precious metals subcategory are: Lead, zinc, copper, gold, and silver. Copper and lead limitations were revised after a broad review of the industries in the subcategory demonstrated that discharges of copper and lead posed more complex problems than earlier and less comprehensive data indicated. The review also led to an increase in the number of "exemplary" facilities in the subcategory upon which BPT is based. (See section VII of the development document). The Agency believes that the facilities in this subcategory can meet the effluent limitations promulgated. Zinc limitations were revised slightly upward for both mills and mines in order to account for the wide variations in operating conditions within the subcategory as reflected in new data obtained by the Agency.

The effluent limitations restricting the discharge of cyanide from mills in the base and precious metals subcategory and the ferroalloy subcategory have been adjusted upward to reflect data developed by the Agency and data supplied with industry comments. Several questions were raised concerning the precision and accuracy of the method for measuring total cyanide and the sampling and preservation of samples for measuring total cyanide. Specific treatment for the removal of cyanide is currently limited in the industry. The transfer of technology from other industries to treat cyanide discharges for the ore mining and dressing industry may not be favorable due to the extremely high volumes associated with discharges from some ore dressing mills. However, it has been demonstrated that as practicable technology, the use of cyanide as a flotation reagent can be controlled in the mill process thereby reducing the concentration of cyanide in the raw waste water discharged by the mill. Also, in a properly designed and maintained tailings pond, natural aeration occurs which reduces the concentration of

preamble to the interim final regulation provides additional background information regarding the development of these regulations (40 FR 51722, November 6, 1975). Appendix A of this preamble contains a summary of the economic impact of these regulations. Appendix B of this preamble contains a list of the public participants in the rulemaking process as well as a summary of the major comments received on the interim final regulation and a summary of the Agency's response to these comments.

The regulations promulgated today only establish BPT effluent limitations guidelines pursuant to sections 301 and 304 of the Federal Water Pollution Control Act (33 U.S.C. 1311, 1314). The Agency is not promulgating pretreatment standards for the ore mining and dressing category because there are no known situations in which such standards would be applicable. The Agency is also not promulgating the regulations governing best available technology economically achievable by 1984 (BAT) or new source performance standards (NSPS) which were proposed on November 6, 1975. Rather, the Agency intends to promulgate BAT regulations and NSPS in 1979 which will be established after careful consideration of the discharge of certain "priority pollutants" from mines and mills in the ore mining and dressing category. This review of BAT technology is required by a settlement agreement approved by the U.S. District Court for the District of Columbia in *Natural Resources Defense Council et al. v. Train*, No. 2153-73.

Generally, it should be noted that the effluent limitations for this category are expressed in concentrations (e.g., milligrams per liter) rather than in units of production (e.g., pounds of pollutant per unit of product) because it was not possible to develop an easily applicable relationship between units of production and waste water discharged by mines and mills in this category.

The BPT effluent limitations in these regulations will enable EPA regions and States with authority to administer the act to better determine permit conditions for dischargers in the ore mining and dressing category where BPT permits have not yet been issued. BPT effluent limitations were to be achieved by July 1, 1977, however, it is EPA policy to provide some flexibility in this regard if a discharger has not been able to meet the deadline for reasons beyond his control. EPA regional enforcement officials should be contacted if any person has a question with regard to the applicability of these regulations to a particular discharger.

cyanide discharged in the effluent. Additionally, some mills are practicing recycle of portions of waste water streams to reduce the use of cyanide in the mill process. The Agency, therefore, believes that with the control of the use of cyanide and the aeration obtained in a properly designed and maintained tailings pond, the effluent limitations promulgated for the control of cyanide can be met. In the reissue of the BAT technology mentioned above, the Agency will do additional sampling and analysis for cyanide and it is anticipated that the limitations promulgated today for the control of cyanide may be further controlled as cyanide is included in the "priority pollutants" being reviewed.

(2) The effluent limitations governing discharges from mills processing uranium have been adjusted to allow a discharge subject to stringent limitations because the impact on groundwater quality, the economic impact and the water consumption impact of a no discharge standard was deemed by the Agency to be unacceptable under certain circumstances.

EPA undertook an extensive review of the interim final no discharge requirement for mills in the uranium, radium, and vanadium ores subcategory.

Many companies engaged in the mining and beneficiation of uranium commented that this effluent limitation was too stringent for mines and mills located in areas where annual precipitation and annual evaporation are essentially equal. The comments also pointed out that some mills with present point source discharges are located in areas where large impoundment facilities or ponds cannot be located near the mine and mill area. These mines and mills would be forced to make large expenditures for additional land, piping, and pumping facilities to impound the discharges from their mills. Similar comments were also received from other Federal agencies. Additionally, it was pointed out that the no discharge limitation from uranium mills would increase the amount of untreated waste water which could seep into groundwater. Current estimates of this waste water seepage into the groundwater amounts to as much as 50 percent of the process waste water. The disposal of these pollutants through seepage might interfere with the implementation and goals of the Safe Drinking Water Act (42 U.S.C. 300f et seq.) and the Resource Conservation and Recovery Act (42 U.S.C.A. 6901 et seq.).

The effluent limitations promulgated today for uranium, radium, and vanadium ore mills are stringent and it is recognized that for a mining company to install the treatment required to meet these effluent limitations will be expensive. The discharge limitations

for uranium mills are based on treatment technologies which include: Ion exchange, ammonia stripping, barium chloride coprecipitation, lime precipitation, aeration, and settling technologies including flocculation. (See section VIII of the development document) The Agency therefore believes that those mining companies located in arid regions which are presently not discharging pollutants will continue to impound the uranium mill process water, recycle a portion of the process water and evaporate the remainder. It should also be noted that it is the policy of the Agency that if any discharger has received a final NPDES permit which calls for compliance with limitations more stringent than those later published in the FEDERAL REGISTER, the discharger is still obligated to meet the terms of that prior permit.

(3) The effluent limitations governing the discharge of radium 226 from uranium mines have been adjusted. This adjustment is necessary to implement the Agency's policy to minimize the discharge of radioactive materials onto the land and into the Nation's waters. It should be noted also that EPA and NRC have reached agreement, in light of *Train v. Colorado PIRG*, 96 S. Ct. 1938 (1976), that it is appropriate for EPA to regulate the discharge of uranium from uranium mines.

(4) The effluent limitations governing the placer mining of gold have been reserved pending a determination of the economic impact of such regulations in the remote areas of Alaska where most placer mining takes place.

(5) The concept of allowing an excursion for waste water treatment facilities designed, constructed, maintained, and operated to control a "10-year, 24-hour precipitation event" has been clarified. A discharge may be made from such a facility. Simply put, each discharger should design, construct, and properly operate their treatment facilities. The treatment facility should be sized to include the volume of water that would result from a "10-year, 24-hour precipitation event" at the mine or mill. A "10-year, 24-hour precipitation event" is a measurement of precipitation in inches of water which can be found from the isopleth maps in "Rainfall Frequency Atlas of the United States," a publication of the U.S. Department of Commerce. For example, using the "10-year, 24-hour precipitation event" for Coeur D'Alene, Idaho, a treatment facility should be sized to include the volume of water that would result from 2.2 inches of rain over the mine and mill area covered by the regulation. Thus, should a rainfall or snowmelt cause an overflow or discharge of effluent that is not within the effluent limitations, the discharge will be allowed provided the treatment facility

had been properly constructed, operated, and maintained to meet the stated design. The soundness and justification for the specific design, construction, operation, and maintenance of the waste water treatment facility is left to the operator or owner of the mine or mill. Should any evidence be submitted to the Agency to indicate that the impoundment facilities needed to meet these regulations would necessitate construction of a structure which would violate safety standards established by a State or Federal Agency, EPA will consider the granting of a variance on an expedited basis. Under no circumstances will an owner or operator be required to violate safety standards in order to meet these regulations.

(6) These BPT effluent limitations are applicable to facilities discharging water from ore mining and milling operations. However, some operations, known as complex facilities, combine waste streams from other processes such as refining and smelting with their ore mining and milling wastes, and this combined waste stream is then treated for discharge. These guidelines should not be applied to such facilities, but the effluent limitations contained herein do provide a basis for facility-specific limitations. That is, limitations for complex facilities would include, where appropriate, allowances for the contributions of waste waters attributable to processes which are not the result of ore mining and milling operations. Additionally, "complex treatment facilities" will be covered by BAT regulations on the basis of ongoing studies regarding the characteristics of such combined wastes and further evaluation of the technology necessary to treat such wastes. In the interim, additional consideration should be given to existing control and treatment capability practicable at these facilities.

(7) The ore mining and dressing point source category has been divided into seven major subcategories based on the metal ore mined or processed, type of mill process, waste water characteristics, and treatability of the waste water. (See section IV of the development document.) The Agency recognizes that raw waste water at some mines and mills in a subcategory may not contain detectable or substantial quantities of a pollutant controlled in that subcategory. Where the raw waste water does not contain a pollutant controlled in detectable quantities or the pollutant is in substantially less concentration than the effluent limitation on a consistent basis, a permit may allow the pollutant to be monitored on a less frequent schedule than the other pollutants controlled by the permit. (See 40 CFR Part 125.27). This less frequent schedule will verify that the pollutant has

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not been introduced into the discharge by, as example, a change in the process or a change in the mineralogy of the ore mined. Such modification to monitoring requirements will be considered on a case-by-case basis by the Agency issuing the permit.

**SMALL BUSINESS ADMINISTRATION  
LOANS**

Section VIII of the FWPCA authorizes the Small Business Administration, through its economic disaster loan program, to make loans to assist any small business concerns in effecting additions to or alterations in their equipment, facilities, or methods of operations so as to meet water pollution control requirements under the FWPCA, if the concern is likely to suffer a substantial economic injury without such assistance.

For further details on this Federal loan program, write to EPA, Office of Analysis and Evaluation, WH-586, 401 M Street SW., Washington, D.C. 20460.

Dated: June 28, 1978.

**BARBARA BLUM,  
Acting Administrator.**

Part 440 is revised to read as follows:

**Subpart A—Iron Ore Subcategory**

- Sec.  
440.10 Applicability; description of the iron ore subcategory.  
440.11 [Reserved]  
440.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart B—Base and Precious Metals Subcategory**

- 440.20 Applicability; description of the base and precious metals subcategory.  
440.21 [Reserved]  
440.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart C—Aluminum Ore Subcategory**

- 440.30 Applicability; description of the aluminum ore subcategory.  
440.31 [Reserved]  
440.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart D—Ferrous Alloy Ores Subcategory**

- 440.40 Applicability; description of the ferrous alloy ores subcategory.  
440.41 [Reserved]  
440.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart E—Uranium, Radium and Vanadium Ores Subcategory**

- Sec.  
440.50 Applicability; description of the uranium, radium and vanadium ores subcategory.  
440.51 [Reserved]  
440.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart F—Mercury Ores Subcategory**

- 440.60 Applicability; description of the mercury ores subcategory.  
440.61 [Reserved]  
440.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

**Subpart G—Titanium Ore Subcategory**

- 440.70 Applicability; description of the titanium ore subcategory.  
440.71 [Reserved]  
440.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best-practicable control technology currently available.

**Subpart H—General Provisions and Definitions**

- 440.80 Applicability.  
440.81 General Provisions  
440.82 General Definitions.  
AUTHORITY: Secs. 301 and 304(b), Federal Water Pollution Control Act, as amended 33 U.S.C 1311 and 1314(b).

**Subpart A—Iron Ore Subcategory**

§ 440.10 Applicability; description of the iron ore subcategory.

The provisions of this subpart are applicable to discharges from (a) mines operated to obtain iron ore, regardless of the type of ore or its mode of occurrence; (b) mills beneficiating iron ores by physical (magnetic and non-magnetic) and/or chemical separation and (c) mills beneficiating iron ores by magnetic and physical separation (Mesabi Range).

§ 440.11 [Reserved]

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

(a) Subject to Subpart H—General Provisions and Definitions, the following limitations establish the concentrations of pollutants controlled by this section which may be discharged by a point source after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines operated to obtain iron ore shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Fe (dissolved).....	2.0	1.0
pH.....	Within the range 6.0 to 9.0	

(2) The concentration of pollutants discharged from mills that employ physical (magnetic and nonmagnetic) and/or chemical methods to beneficiate iron ore shall not exceed:

Effluent characteristic	Effluent limitation	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Fe (dissolved).....	2.0	1.0
pH.....	Within the range 6.0 to 9.0	

(3) There shall be no discharge of process waste water from mills that employ magnetic and physical methods to beneficiate iron ore (Mesabi Range) except as provided below.

In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a)(1) of this section.

**Subpart B—Base and Precious Metals Subcategory**

§ 440.20 Applicability; description of the base and precious metals subcategory.

The provisions of this subpart are applicable to discharges from (a) mines operated to obtain copper bearing ores, lead bearing ores, zinc bearing ores, gold bearing ores, or silver bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits; (b) mills which employ the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper ores, lead ores, zinc ores, gold ores or silver ores or any combination of these ores; (c) mines and mills which employ dump, heap, in situ leach or vat-leach processes for the extraction of copper from ores or ore waste materials; (d) mills which extract gold or silver by the cyanidation process alone; (e) mills

which extract gold or silver by the amalgamation process alone; and (f) mines or mills beneficiating gold ores, silver ores, tin ores or platinum ores by gravity separation methods, (this includes placer or dredge mining or concentrating operations, and hydraulic mining operations).

§ 440.21 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Definitions, the following limitations establish the concentration of pollutants controlled by this section which may be discharged by a point source after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines operated to obtain copper bearing ores, lead bearing ores, zinc bearing ores, gold bearing ores, or silver bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
	Milligrams per liter	
TSS.....	30	20
Cu.....	.30	.15
Zn.....	1.5	.75
Pb.....	.6	.3
Hg.....	.002	.001
pH.....	Within the range 6.0 to 9.0	

(2) The concentration of pollutants discharged from mills which employ the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper ores, lead ores, zinc ores, gold ores, or silver ores or any combination of these ores shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
	Milligrams per liter	
TSS.....	30	20
Cu.....	.30	.15
Zn.....	1.0	.5
Pb.....	.6	.3
Hg.....	.002	.001
Cd.....	.10	.05
CN.....	.20	.10
pH.....	Within the range 6.0 to 9.0	

(3) There shall be no discharge of process waste water from mines and mills which employ dump, heap, in situ leach or vat-leach processes for the extraction of copper from ores or ore waste materials except as provided below.

In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a)(2) of this section.

(4) There shall be no discharge of process waste water from mills which extract gold or silver by use of the cyanidation process alone except as provided below.

In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a)(1) of this section.

(5) The concentration of pollutants from mills which extract gold or silver by use of the amalgamation process alone shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
	Milligrams per liter	
TSS.....	30	20
Cu.....	.30	.15
Zn.....	1.0	.5
Hg.....	.002	.001
pH.....	Within the range 6.0 to 9.0	

(6) The concentration of pollutants discharged in mine drainage from mines or discharged from mine and mill complexes beneficiating gold ores, silver ores or platinum ores by gravity separation methods including mining of placer deposits, dredge mining and hydraulic mining operations shall not exceed:

[Reserved]

Subpart C—Aluminum Ore Subcategory

§ 440.30 Applicability; description of the aluminum ore subcategory.

The provisions of this subpart are applicable to discharges from facilities

engaged in the mining of bauxite as an aluminum ore.

§ 440.31 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Definitions, the following limitations establish the concentration of pollutants controlled by this section, which may be discharged by a point source after application of the best practicable control technology currently available:

The concentration of pollutants discharged in mine drainage from mines producing bauxite ores shall not exceed:

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
	Milligrams per liter	
TSS.....	30	20
Fe.....	1.0	.5
Al.....	2.0	1.0
pH.....	Within the range 6.0 to 9.0	

Subpart D—Ferroalloy Ores Subcategory

§ 440.40 Applicability; description of the ferroalloy-ores subcategory.

The provisions of this subpart are applicable to discharges from (a) mines producing 5,000 metric tons (5,512 short tons) or more of ferroalloy ores per year; (b) mines producing less than 5,000 metric tons (5,512 short tons) and mills processing less than 5,000 metric tons (5,512 short tons) of ferroalloy ores per year by methods other than ore leaching; (c) mills processing 5,000 metric tons (5,512 short tons) or more of ferroalloy ores per year by purely physical methods including ore crushing, washing, jigging, heavy media and gravity separation, and magnetic and electrostatic separation; and (d) mills processing 5,000 metric tons (5,512 short tons) or more of ferroalloy ores per year by froth flotation methods. Ferroalloy metals include: chromium, cobalt, columbium, tantalum, manganese, molybdenum, nickel, tungsten and vanadium (recovered alone and not as a by-product of uranium mining and mills).

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§ 440.41 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Definitions, the following limitations establish the concentration of pollutants controlled by this section which may be discharged by a point source after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines producing 5,000 metric tons (5,512 short tons) or more of ferroalloy bearing ores per year shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Cd.....	.10	.05
Cu.....	.30	.15
Zn.....	1.0	.5
Pb.....	.6	.3
As.....	1.0	.5
pH.....	Within the range 6.0 to 9.0	

(2) The concentration of pollutants discharged in mine drainage from mines producing less than 5,000 metric tons (5,512 short tons) or discharged from mills processing less than 5,000 metric tons (5,512 short tons) of ferroalloy ores per year by methods other than ore leaching shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	50	30
pH.....	Within the range 6.0 to 9.0	

(3) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of ferroalloy ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation, and magnetic and electrostatic separation shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Cd.....	.10	.05
Cu.....	.30	.15
Zn.....	1.0	.5
As.....	1.0	.5
pH.....	Within the range 6.0 to 9.0	

(4) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of ferroalloy ores per year by froth flotation methods shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Cd.....	.10	.05
Cu.....	.30	.15
Zn.....	1.0	.5
As.....	1.0	.5
CN.....	.20	.10
pH.....	Within the range 6.0 to 9.0	

**Subpart E—Uranium, Radium and Vanadium Ores Subcategory**

§ 440.50 Applicability; description of the uranium, radium and vanadium ores subcategory.

The provisions of this subpart are applicable to discharges from (a) mines, either open-pit or underground, from which uranium, radium and vanadium ore are produced; and (b) mills using the acid leach, alkaline leach, or combined-acid and alkaline leach process for the extraction of uranium, radium and vanadium. Only vanadium by-product production from uranium ores is covered under this subpart.

§ 440.51 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Definitions, the following limitations establish the concentration of pollutants controlled by this section which may be discharged by a point source after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, from which uranium, radium and va-

nadium ores are produced excluding mines using in-situ leach methods shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
COD.....	200	100
Zn.....	1.0	0.5
Ra226* (dissolved).....	10	3
Ra226* (total).....	30	10
U.....	4	2
pH.....	Within the range 6.0 to 9.0	

\*Values in picocuries per liter (pCi/l).

(2) The concentrations of pollutants discharged from mills using the acid leach, alkaline leach or combined acid and alkaline leach process for the extraction of uranium, radium and vanadium including mill-mine facilities and mines using in-situ leach methods shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
COD.....	500	500
As.....	1.0	.5
Zn.....	1.0	.5
Ra226* (dissolved).....	10	3
Ra226* (total).....	30	10
NH3.....	100	100
pH.....	Within the range 6.0 to 9.0	

\*Values in picocuries per liter (pCi/l).

**Subpart F—Mercury Ore Subcategory**

§ 440.60 Applicability; description of the mercury ore subcategory.

The provisions of this subpart are applicable to discharges from (a) mines, either open-pit or underground, operated for the production of mercury ores; and (b) mills beneficiating mercury ores by gravity separation methods or by froth-flotation methods.

§ 440.61 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Definitions, the following limitations establish the concentration of pollutants controlled by this section which may be discharged by a point source sub-

part after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, operated for the production of mercury ores shall not exceed the following limitations:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Hg.....	.002	.001
Ni.....	.2	.1
pH.....	Within the range 6.0 to 9.0	

(2) There shall be no discharge of process waste water from mills beneficiating mercury ores by gravity separation methods or by froth-flotation methods except as provided below.

In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a)(1) of this section.

**Subpart G—Titanium Ore Subcategory**

§ 440.70 Applicability; description of the titanium ore subcategory.

The provisions of this subpart are applicable to discharges from (a) mines obtaining titanium ores from lode deposits; (b) mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods; and (c) mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, zircon, and other heavy metals, and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods).

§ 440.71 [Reserved]

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

(a) Subject to the provisions of Subpart H—General Provisions and Defi-

nitions, the following limitations establish the concentration of pollutants controlled by this section which may be discharged by a point source after application of the best practicable control technology currently available:

(1) The concentration of pollutants discharged in mine drainage from mines obtaining titanium ores from lode deposits shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Fe.....	2.0	1.0
pH.....	Within the range 6.0 to 9.0	

(2) The concentration of pollutants discharged from mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Zn.....	1.0	.5
Ni.....	.2	.1
pH.....	Within the range 6.0 to 9.0	

(3) The concentration of pollutants discharged in mine drainage from mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, zircon, or other heavy metals, and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods) shall not exceed:

Effluent limitations		
Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed—
Milligrams per liter		
TSS.....	30	20
Fe.....	2	1
pH.....	Within the range 6.0 to 9.0	

**Subpart H—General Provisions and Definitions**

§ 440.80 Applicability.

Except as provided in these general provisions and definitions, abbreviations and methods of analysis set forth in 40 CFR 401 shall apply to part 440. The general provisions and definitions set forth in this subpart H apply to all subparts of the part 440.

§ 440.81 General Provisions.

(a) In establishing the limitations set forth in 40 CFR 440, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and established effluent limitations. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different factors. If fundamentally different factors are found to exist, the Regional Administrator or the State shall establish effluent limitations in the NPDES permit accordingly. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations or initiate proceedings to revise 40 CFR 440.

(b) In the event that waste streams from various subparts or segments of subparts in part 440 are combined for treatment and discharge, the quantity or quality of each pollutant or pollutant property in the combined discharge that is subject to effluent limitations shall not exceed the quantity or quality of each pollutant or pollutant property that would have been discharged had each waste stream been treated separately. The discharge flow from a combined discharge shall not exceed the volume that would have been discharged had each waste stream been treated separately.

(c) Any excess water, resulting from rainfall or snowmelt, discharged from

facilities designed, constructed, and maintained to contain or treat the volume of water which would result from a 10-year 24-hour precipitation event, shall not be subject to the limitations set forth in 40 CFR 440.

(d) Where the application of neutralization and sedimentation treatment technology results in inability to comply with the pH limitations set forth, the permit issuer may allow the pH level in the final effluent to be exceeded to a small extent in order that the other effluent limitations in the permit will be achieved. In no case shall the pH of the final effluent exceed 9.5. In the case of a discharge into natural receiving waters for which the pH, if unaltered by man's activities, is or would be less than 6.0 and approved water quality standards authorize such lower pH, the pH limitations for the discharge may be adjusted downward to the pH water quality criterion for the receiving waters provided the other effluent limitations for the discharge are met. In no case shall a pH limitation below 5.0 be permitted.

#### § 440.82 General definitions.

(a) The term "active mining area" means a place where work or other activity related to the extraction, removal, or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

(b) The term "mine" means an active mining area, including all land and property placed upon, under or above the surface of such land, used in or resulting from the work of extracting metal ore from its natural deposits by any means or method, including secondary recovery of metal ore from refuse or other storage piles derived from the mining, cleaning, or concentration of metal ores.

(c) The term "mine drainage" means any water drained, pumped or siphoned from a mine.

(d) The term "ten year 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable re-occurrence interval of once in 10 years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, and subsequent amendments, or equivalent regional or rainfall probability information developed therefrom.

(e) The term "mill" means a preparation facility within which the metal ore is cleaned, concentrated or otherwise processed prior to shipping to the consumer, refiner, smelter or manufacturer. A mill includes all ancillary operations and structures necessary for the cleaning, concentrating or other processing of the metal ore such as ore

and gangue storage areas, and loading facilities.

(f) The terms "annual precipitation" and "annual evaporation" mean the mean annual precipitation and mean annual lake evaporation respectively, as defined in the publication, "Climatic Atlas of the United States", "U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Services, June 1968 or equivalent regional rainfall and evaporation data.

(g) The effluent characteristic "U" (Uranium) is measured by the procedure discussed in the "HASL Procedural Manual," edited by John H. Harley, HASL 300 Health and Safety Laboratory, U.S. Atomic Energy Commission, 1973, pg. EU-03, or an equivalent method.

#### APPENDIX A

##### ECONOMIC IMPACT

As a result of BPT regulations ore mines and mills are expected to invest approximately \$18,170,200 (in 1972 dollars). The annualized costs of BPT, which included amortization charges at eight percent over the useful life, and operations and maintenance expense, are predicted to total approximately \$5,282,800 (in 1972 dollars). The costs by industry category are detailed in the following table.

##### COSTS BY INDUSTRY CATEGORY TO COMPLY WITH BPT EFFLUENT GUIDELINES LIMITATIONS

[In thousands of 1972 dollars except where noted]

Industry	Capital cost	Annualized cost <sup>1</sup>
Iron .....	274.2	204.1
Base and precious metals: <sup>2</sup>		
Copper .....	2.5	.5
Lead and zinc .....	4,792.2	1,891.5
Gold .....	8,192.8	1,753.2
Silver .....	323.8	161.4
Aluminum .....	383.2	224.8
Ferroalloys .....	522.0	201.5
Uranium, radium, and vanadium .....	3,583.3	**805.9
Mercury .....		
Titanium .....	96.2	39.9
<b>Total .....</b>	<b>18,170.2</b>	<b>5,282.8</b>

<sup>1</sup>Includes amortization (at 8 percent) over the life of the equipment, operating and maintenance expenses.

<sup>2</sup>Includes no estimates for complex treatment facilities which treat mining and milling wastes with wastes from other operations.

<sup>3</sup>1,027 of this estimate is in 1976 dollar terms.

<sup>4</sup>1,125 of this estimate is in 1976 dollars terms.

<sup>5</sup>Includes a credit for product recovery.

(i) Energy requirements and nonwater quality environmental impacts.

Energy requirements for compliance with the effluent limitations and standards are low. The main use of energy is for pumps, mixers and control instruments. Wherever feasible, gravity flow is used in treatment facilities for mine drainage and mill process waste water. Mine dewatering is considered an inherent part of the mining operation and not part of water pollution control.

Inherent in ore dressing are major problems with solid waste disposal in the form of tailings. Large areas of tailings are a source

of air pollution. Where radioactive ores are milled, radioactive substances are found in the tailings disposal area. The amount of additional waste and the resultant air pollution and radioactive hazards produced as a result of compliance with the regulations is insignificant relative to that already present. Consequently, a minimal additional impact is expected.

(ii) Economic impact analysis. These regulations are not predicted to affect prices significantly. In no instance is all of industry's production affected, and only for gold and tungsten is the annualized cost of compliance more than one percent of sales for the affected operations. Since only a portion of any industry's output is affected, the impact on prices should be even less than the ratio of the annualized costs to sales. This occurs because competition from unaffected firms will often prevent all costs from being passed on by the affected firms.

One lead and zinc mine and mill may close as a result of this regulation. If it closes, from 90 to 120 jobs could be lost with a resultant community impact. The reduction in total domestic production would be approximately two percent which is not a large enough decline to affect prices significantly. In addition, up to 17 small tungsten mines employing a total of approximately 50 people could close. However, because they move in and out of the market in response to the price, none of these operations could be identified. They account for only about 0.1 percent of the ferroalloy production.

Other than the potential impacts on the lead-zinc and tungsten operations, little effect is expected on prices, production, capital availability, industry growth, employment, local economies or the balance of trade.

#### APPENDIX B

##### SUMMARY OF PUBLIC PARTICIPATION

Prior to this publication, factual conclusions which support promulgation of this regulation were set forth in substantial detail in the notice of interim final rulemaking for the ore mining and dressing point source category published November 6, 1975 (40 FR 51722), and in the notice of public review procedures published October 6, 1973 (38 FR 21202). In addition, the regulations as promulgated in interim final form were supported by two documents: (1) the document entitled "Development Document for Interim Final Effluent Limitations Guidelines and New Source Performance Standards for the Ore Mining and Dressing Point Source Category" and (2) the document entitled "Economic Impact of Proposed Effluent Limitations Guidelines, the Ore Mining and Dressing Industry." These documents were made available to the public and circulated to interested persons at approximately the time of publication of the notice of interim final rulemaking.

Prior to the publication of the notice of interim final rulemaking (40 FR 51722) a draft development document was distributed to Federal agencies, all State and Territorial pollution control agencies, industry trade associations and conservation organizations. Comments on that report were solicited. The major comments received and the Agency's response were described in the notice of interim final rulemaking (40 FR 51722).

Interested persons were again invited to participate in the rulemaking by submitting written comments following the publication



of the interim final regulations (40 FR 51722) and a notice of suspension of the interim final regulation (40 FR 21191).

The following responded to the request for written comments contained in the notice of interim final rulemaking and the notice of suspension of the interim final rulemaking: Alaska Department of Environmental Conservation; Aluminum Corporation of America; Amax Inc.; American Cyanamid Co.; American Iron Ore Association; American Mining Congress; Anaconda; Asarco; Beistline E. H.; Bethlehem Steel Corp.; Bunker Hill Co.; Cities Service Co.; Cleveland Cliffs Iron Co.; Colorado Department of Health; Colorado River Water Conservation District; Continental Oil Co.; Dutch Creek Mining Co.; Eagle-Picher Industry, Inc.; E. I. du Pont de Nemours & Co.; Effluent Standards and Water Quality Information Advisory Committee; Gardiner Inc.; Gulf Mineral Resources Co.; Hanna Mining Co.; Hecla Mining Co.; Homestake Mining Co.; Jones, Wayne F.; Jones & Laughlin Steel Corp.; Kennecott Copper Corp.; Kerramerican, Inc.; Kerr-McGee Chemical Corp.; Kerr-McGee Nuclear Corp.; Minnesota Pollution Control Agency; New Jersey Zinc Co.; Ohio Environmental Protection Agency; Phillips, John; Phillips Petroleum Co.; Resource Associates of Alaska, Inc.; Reynolds Aluminum; Rosander, Ronald; St. Joe Mineral Corp.; Sunshine Mining Co.; Tennessee Valley Authority; Texas Water Quality Board; Union Carbide Corp.; U.S. Department of Agriculture; U.S. Department of Commerce; U.S. Department of Health, Education, and Welfare; U.S. Department of Interior; U.S. Energy Research and Development Administration; Environmental Protection Agency; U.S. Water Resources Council; Utah International Inc.; University of Alaska; Western Nuclear Inc.; Wisconsin Department of Business Development; Wisconsin Department of Natural Resources; and Wisconsin State Senate—17th Senate District.

(1) Several commenters questioned the effluent limitations for mine drainage or discharges from mine and mill complexes beneficiating gold ores, silver ores, tin ores or platinum ores by gravity separation or placer mining. Several commenters stated that it was not clear why total suspended solids (TSS) was selected as the effluent characteristic limited and instead recommended turbidity or settleable solids as the effluent characteristic since these effluent characteristics have been monitored in the past. Several commenters stated that the streams were naturally higher in TSS than the specified limitation because of unique geological conditions such as fine grained glacial sediments. Compliance with the limitations would require substantial capital investment. Another commenter objected to basing the limitations on data from the hardrock gold mining industry since hydraulic mining methods are entirely different and have unique problems. One commenter stated that the test for TSS is most difficult for the permittee because of remote mine and lack of lab facilities and suggested monitoring for settleable solids. One commenter requested further subcategorization for placer mining based on size of the operation or number of persons employed because of economic considerations. One commenter stated that because the operations are in remote locations, technology such as the use of flocculating agents would be difficult and costly.

Effluent limitations for placer mining in base and precious metals subcategory are

not included in these regulations because, though the technical study and evaluation are complete, the economic impact analysis posed unique problems which have not been resolved.

It is recognized that the placer operations are different from most other mines and that the data base was limited. Additional data specific to placer mining has been developed and the special problems of the remote areas have been considered. It was determined that total suspended solids is not a tenable parameter for locations as remote as many placer mining operations and that limiting settleable solids would be more reasonable and technically feasible. It has also been determined that placer operations have a detrimental effect on water quality and that treatment improved the water quality. Waters above mining operations were judged to be of high quality, whereas the discharged process water was generally of poor quality. Treatment facilities in many operations were considered inadequate and construction of reasonable treatment facilities such as settling ponds is technically feasible. Most of these settling facilities could be built within a short time period with equipment used in the operation of the mine. Sport or recreational placer mining or panning operations are excluded from regulation. Further subcategorization is not possible because no correlation can be determined between the method of operation or size of operation with the amount of ore material moved and the effect on treatment technology.

(2) Several commenters objected to the requirement to design, construct, and operate the treatment facilities to treat all process generated waste water and the surface runoff to the facilities resulting from a 10-year, 24-hour precipitation event. Several commenters requested clarification of this statement since there was more than one interpretation. Another commenter stated that the provision does not allow for a discharge where runoff from rapid snow-melt exceeds the provision or for discharge resulting from multiple storms that exceeds the provision. One commenter stated that this provision should be considered on a case by case basis and that treatment or storm water should not be included. One commenter was concerned that at least once every decade this provision would subject lakes and streams to high levels of pollutants and that management techniques are available to contain or treat this waste water.

The effluent limitations guidelines provide that any excess water, resulting from rainfall or snowmelt, discharged from facilities designed, constructed, and maintained to contain or treat the volume of water which would result from a 10-year 24-hour precipitation event, shall not be subject to the limitations set forth. This does not mean that only after a rainfall equalling or exceeding the 10-year, 24-hour precipitation event may untreated effluent be discharged. It means that after a precipitation event or snowmelt which forces an overflow, bypass, or increase in the volume of point source discharge from a facility designed, constructed and maintained to contain or treat the amount of water which results from the 10-year, 24-hour, precipitation event, the overflow, bypass or increase in volume of the point source discharge shall be permitted. The 10-year, 24-hour, precipitation event is a figure which for each geographical area of the country, can be determined

by referring to the reference cited in § 440.82(d).

From a review of the relevant regulations and design guidelines, and from discussions with representatives of the appropriate Federal regulatory agencies, EPA is confident that the impoundment facilities needed to comply with the regulations promulgated today are reasonable, and that there is no additional danger caused by implementation of these regulations. Should any evidence be submitted to the Agency to indicate that the impoundment facilities needed to meet these regulations would necessitate construction of a structure which would violate safety standards set out by a State or Federal agency, EPA will consider the granting of a variance on an expedited basis. Under no circumstances will an owner or operator be required to violate applicable safety standards in order to meet these regulations. If difficulty arises in more than isolated instances, consideration will be given to amendment of these regulations. It must be emphasized, however, that the State and Federal authorities with whom EPA has consulted on this matter uniformly concluded that no safety issues are raised by the use of a 10-year, 24-hour precipitation event as a design criteria.

The effluent limitations guidelines merely state a final limitation on the amount of pollutants which may be discharged from this industry, and allow for an excursion from the normal requirements when there is a discharge from a facility properly designed to contain or treat a large precipitation event.

While there has been criticism of the 10-year, 24-hour formula used by the Agency, the alternatives suggested are substantially less satisfactory. Use of a provision which allows for the release of waste water when there is an unusual precipitation event is not restricted solely to the mining extraction industries; such an allowance, excursion, or exemption has been used in several other industries in which the major source of pollution results from rainfall runoff. For example, when attempting to control the discharges of highly polluting wastes from feedlot operations, the regulatory authority must necessarily consider the feasibility of containing large quantities of rainfall runoff. These considerations were raised during the consideration of the Federal Water Pollution Control Act Amendments of 1972 ("FWPCA") and there is prominent mention of the 10-year, 24-hour storm event as a realistic method of addressing the problem.

(3) Several commenters stated that the pH range 6-9 should be flexible. One commenter stated that discharge of process water (pH 6-9) to natural waters with a pH below 6 would be harmful to the ecological system of that body of water. Another commenter replied that because of the treatment required for precipitation of metals in raising the pH above 9 it then becomes necessary to lower the pH by adding acid. This acid contains material that may be equally harmful to the streams.

In the case of a discharge into natural receiving waters for which the pH, if unaltered by man's activities, is or would be less than 6.0 and water quality standards approved under the act authorized such lower pH, the pH limitations for the discharge may be adjusted downward to the pH water quality criterion for the receiving waters. In no case shall a pH limitation below 5.0 be permitted. In the case of requiring neutral-

ization by adding acid after lime treatment, the pH limitation shall be adjusted upward to 9.5 (see, § 440.81(d)). At pH 9.5 which is near the optimum pH range for precipitating specific metals, no neutralization would be required. It is anticipated this flexibility will minimize the environmental hazards previously associated with pH adjustment slightly over 9 to less than 9. However, where higher pH is required to precipitate specific metals, neutralization with acid may be required.

(4) One commenter stated that control of metals discharged by the bauxite industry could be achieved by limiting pH and TSS.

Solubilities of metal ions vary according to the pH of the solution. Control of the pH for reduction of a particular ion or ions should be optimized for that ion or ions. This must be accomplished on an individual basis.

(5) Several commenters questioned the limitations specifying total metals and recommended limiting dissolved metals as in some present water quality monitoring. Several commenters stated that the present NPDES permits specify dissolved metals and that submitted industry data used in the development document are analysis for dissolved metals. One commenter stated that analyses for the suspended portion of Ra226 is a problem unless methods are specified. One commenter stated that the analysis for total metals should reflect the solubilization potential under natural conditions by preserving the sample at pH2 but analyzing the sample at pH6.

The objective in limiting total metals in an effluent is to minimize the potential problems of metals redissolving in the environment or solubilizing within living organisms. Total metal analysis were performed by the contractors. This data was used to supplement the data received from the industry. The data has been examined to make certain that no dissolved metal analysis were used directly in establishing limitations. The sampling and analysis procedures are specified in 40 CFR Part 136 (41 FR 52780); Procedures for Analysis of Pollutants, for all parameters except Uranium which is specified under the heading General Definitions in Subpart H (see, § 440.82(g)).

(6) Several commenters stated the following problems with recycle of waste water in achieving zero discharge: (a) The pumping and piping cost is excessive for facilities where land is not available for constructing the tailings pond adjacent to the mill. (b) Many mills are associated with adjacent mines and have abundant mine water for use as mill feed and in some cases the use of mine water enhances product recovery. Thus, no recycle is necessary as far as mill feed is concerned. (c) Several mills are using the coarse sands with cement in backfilling the mined out stopes. The mine water becomes more difficult to recycle as mill feed. (d) The concentration of reagents and dissolved solids in the mill pond hinders the recovery of the product when recycled to the mill.

Several milling operations which were included in the study to develop this regulation have made modifications to their mill process in order to obtain complete recycle or partial recycle with minimal loss of recovery. Most of these facilities are located in water short areas, but the technology for net precipitation areas would be very similar. The Agency has no data available to show that an accumulation of dissolved

solids or process reagents would reduce recovery of product. The Agency has recognized other problems associated with the uranium industry and has amended no discharge to discharge limitations for this subcategory, see comment (7) below. However, the Agency encourages the greatest use of recycle in every case.

(7) Several commenters questioned the requirements of no discharge as BPT. One commenter stated the no discharge requirement does not consider the problems of impoundment in water short areas where conservation of water and reuse by downstream users is necessary. Several commenters referred to other possible State or Federal requirements which would eliminate seepage into the ground water from impoundment ponds and requested that lining of impoundment ponds be included in the cost evaluation of compliance. One commenter requested deep well disposal technology be included as BPT in order to meet no discharge. Another commenter stated that the operations obtaining zero discharge which are included as exemplary plants were located in areas of high net evaporation and that cost to meet zero discharge outside of these areas would be excessive.

The Agency has determined that no discharge for the uranium industry should be replaced by stringent discharge limitations. Treatment technologies to meet the revised limitations may include barium chloride coprecipitation, ion-exchange, ammonia stripping, lime precipitation, aeration and flocculating and settling technology. These stringent discharge limitations are believed adequate to both protect the environment and allow some flexibility in meeting the regulations. The other categories with no discharge requirements for BPT include: iron ore mills that employ magnetic and/or physical methods to beneficiate iron ore; base and precious metals, mills employing leaching techniques, and mills employing cyanidation process; and mercury mills. Most of the mills in these categories are presently obtaining zero discharge or have plans for doing so. Deep well disposal is not addressed as BPT technology as the Agency is in the midst of promulgating regulations governing deep well disposal practices under the Safe Drinking Water Act. Nonetheless, under limited circumstances it may be possible for a discharger to meet a no discharge limitation by injecting process waste water underground.

(8) Several commenters questioned the cost/benefit analysis for the interim final regulation. The commenters stated that the cost/benefit effect of the regulation was particularly significant for individual operations that were discharging to ephemeral streams, for operations with higher levels of pollutants in the background water than in the discharge limitation, for mines with excessive amounts of mine water to treat, for operations with a no discharge requirement and limited land available for impoundment ponds, and for operations which may close within a short period due to limited ore reserves.

An economic impact analysis was prepared for the Agency in support of the interim final BPT guidelines limitations. This analysis was based upon the cost estimates detailed in chapter 8 of the Development Document. The analysis showed that the limitations were generally economically feasible and that they would not generally have significant adverse impacts upon prices, production, capital availability, industry

growth, employment, local economies or the balance of payments.

In response to several comments on the interim final regulations, the Agency reevaluated the treatment costs for several facilities. In addition, the Agency has reviewed the subcategorization of the regulations and the appropriateness of its limitations. For example, the limitation for uranium mills have been changed from zero discharge to an allowance of various parameters. The economic analysis has been revised to reflect the new cost information. It now appears, for example, that one lead and zinc mine and mill operation with relatively short remaining life may close rather than incur the cost of these regulations. However, while it is expected that there will be a loss of jobs, and a resulting community effect, the impact upon the ore mining industry as a whole is not considered significant.

(9) Several commenters questioned the Agency's determination that effluent guidelines for the ore mining and dressing industry would require a capital investment of less than \$100,000,000 or an annualized cost less than \$50,000,000, and questioned the Agency's decision not to prepare an inflation impact statement. Several commenters stated that cost should be estimated on a case-by-case basis and that cost for their individual company is excessive.

The Agency has completed and distributed the study, "Analysis of Economic Impact of Proposed Effluent Limitations Guidelines for the Metallic Ore Mining and Dressing Industry." This study assessed both internal and external impacts of the proposed guidelines. Internal impact consist of incremental capital and operating cost necessary to comply with the effluent guidelines. External cost include price changes, production and employment changes, balance of payment impacts, community and regional impacts and consequences for industry growth. The incremental compliance cost (1972 dollars) for BPT for the ore mining and dressing industry amount to a capital cost of \$18,170,200 and operating cost of \$5,282,800. These costs are incremental, recognizing that much of the industry have facilities in place and or in compliance or near compliance. Many of the companies need only to optimize current treatment in order to meet the limitations.

(10) Several commenters requested clarification of the provision which allows a discharge when net precipitation exceeds net evaporation and requested the method of determining the amount of discharge. Several commenters wanted the provision to allow a discharge on a periodic or monthly basis and to include runoff from snowmelt. One commenter requested the provision be dropped for the iron ore mining industry and stated that through recycle and management practices this water could be contained in a closed cycle.

The precipitation and evaporation data may be determined by site specific, self monitoring data or historic data. Precipitation data includes snowmelt. This provision which allows a discharge from facilities which have no discharge requirements was determined to be necessary because of the excessive amounts of waste water involved in some operations and safety requirements for impoundments of such large capacity. However, diversion ditches and maximum recycle are encouraged in order to limit the amount of discharge. Treatment requirements are also placed on the discharger.

The decision as how to discharge this volume of water will be determined by the permitting authority, but it is recommended that the discharge be on a periodic basis.

(11) Several commenters stated that the technology identified for BPT was presently in place at their operation; however, they could not meet the specified limitations. Several commenters stated that the limitations could not be achieved and that limitations should not have been based on plants with 30 day retention time. Commenters stated that the oxidation of zinc and zinc bearing minerals in mines cause varying loadings to treatment facilities making optimization of treatment for zinc difficult in mine drainage treated separately.

A complete review of the original data base has been made and additional data was collected. Limitations for several pollutants have been adjusted upward as a result of this review. The remaining operations that are not meeting the specified limitations with existing BPT technology may need to optimize the treatment system and operate it for optimum pollutant removal. Also several facilities with retention time of less than 3 days are now achieving the revised limitations. The Agency does not specify retention time, since the design and operation of a treatment system such as the impoundment pond can be best accomplished for each situation. The data shows that the revised limits are achievable using the recommended BPT and by optimizing the operation and controlling the facilities.

(12) Several commenters stated that the effluent limits for cyanide (CN) were below the detectable limits. One commenter stated that the limit for chemical oxygen demand (COD) for the mining of titanium placer deposits was below detectable limits.

The effluent limitations restricting the discharge of cyanide from mills in the base and precious metals subcategory and the ferroalloy subcategory have been adjusted upward to reflect data developed by the Agency and data supplied with industry comments. Several questions were raised concerning the precision and accuracy of the method for measuring total cyanide and the sampling and preservation of samples for measuring total cyanide. It has been demonstrated that the use of cyanide as a flotation reagent can be controlled in the mill process thereby reducing the concentration of cyanide in the raw waste water discharged by the mill. Also, in a properly designed and maintained tailings pond, natural aeration occurs which reduces the concentration of cyanide discharged in the effluent. Additionally, some mills are practicing recycle of portions of waste water streams to reduce the use of cyanide in the mill process. The Agency, therefore, believes that with the control of the use of cyanide and the aeration obtained in a properly designed and maintained tailings pond, the effluent limitations promulgated for the control of cyanide can be met. The limitation on COD for titanium placer deposits has been deleted as EPA has determined that the control of the other pollutants offer sufficient control of COD resulting from point source discharges in this instance.

(13) Two comments expressed a concern that cost for diversion ditches were not included in the cost analysis by EPA and stated that diversion ditches were necessary for 50 to 90 percent of the cases in their operations as a result of pollution control and not as part of the mining or mill process control as stated by the Agency.

The Agency does not specify the use of diversion ditches but recommends their use to prevent contamination of relatively clean runoff water with process water or mine drainage. The operator has the option to treat this runoff or divert it. In most cases diversion is the most economical method. Where diversion ditches were identified as necessary because of the topography at the facility, the cost for these diversion ditches was included.

(14) One commenter recommended that the inclusion of the statement "and other aluminum ores," in the description of the bauxite subcategory should be deleted.

The regulations were based on data from the bauxite mining subcategory. To avoid misapplication of the regulations, the bauxite subcategory has been renamed the aluminum ore subcategory. An explanation that the regulations should be applied only to bauxite ores is included in this regulation. Operations mining other aluminum ores may be examined for inclusion in the regulations if these other ore bodies are developed.

(15) One commenter recommended limitations for asbestiform fibers for the iron ore industry. One commenter stated that limitations for sulfates, fluorides, manganese and total dissolved solids should be included in the regulations.

The effluent limitations in this regulation are based on specific technologies for the removal of pollutants which were selected for each subcategory by the selection criteria as listed in the development document. (See section VI). The data verified removals of a selected pollutant and effluent limitations were established based on this data and not on water quality standards.

The Agency is presently reviewing BAT particularly with regard to controlling certain priority pollutants mentioned in a Settlement Agreement approved by the United States District Court for the District of Columbia in *Natural Resources Defense Council, et al. v. Train*, No. 2153-73. In the review that Agency will address the inclusion of additional pollutants for control under BAT.

(16) One commenter stated that the no discharge requirement for leaching operations in the base and precious metals subcategory is unnecessarily stringent and limits metallurgical technology.

Currently the majority of all dump, heap, in situ, or vat leach facilities attain no discharge since it is desirable to collect all leach waste streams for extraction of metal values. However, this limitation does not prohibit a facility from discharging blowdown to an available treatment system which may be present at facilities combining waste water from smelters with waste water from ore mines and mills.

(17) Several commenters recommended that the description of iron ore mills be clarified. One commenter was concerned that the no discharge standard for operations employing magnetic methods of beneficiating would be applied to operations other than those operations for which this subcategory was intended.

The recommendation was agreed to and the necessary revision to the regulation has been made.

(18) Two commenters questioned the treatment technology for removal of ammonia for the ferroalloy leach subcategory, stating that the data does not support the effluent limitations.

The effluent limitations for the ferroalloy leaching subcategory has been deleted from

the regulation. This action was taken because only one plant existed within this subcategory. Establishing national regulations for a single plant is not warranted. An appropriate permit has been issued to this plant.

(19) One commenter stated that the impoundment facility necessary to comply with the regulation would pose a serious safety hazard to the underground mine which of necessity would be located beneath the impoundment facility and therefore pose a danger to the miners.

The Agency is not aware of any specific information which would cause the Agency to believe that the regulation promulgated today poses a safety hazard. Of course, under no circumstance will an owner or operator be required to violate safety standards in order to meet these regulations. Should evidence be submitted to the Agency that impoundment facilities needed to meet these regulations violate safety standards, EPA will consider the granting of a variance on an expedited basis.

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## [4510-23]

### Title 41—Public Contracts and Property Management

#### CHAPTER 29—DEPARTMENT OF LABOR

#### PART 29-50—COOPERATION WITH STATE AND LOCAL GOVERNMENTS TO COORDINATE AND IMPROVE INFORMATION SYSTEMS

##### Procurement Regulations

AGENCY: Department of Labor.

ACTION: Final rule.

**SUMMARY:** This rule establishes a new part to the Department of Labor Procurement Regulations to provide regulations and procedures on the use of State owned or controlled centralized data processing facilities by State and local governments, when such facilities are financed in whole or in part with Federal funds. The Department of Labor new procedures are intended to implement Office of Management and Budget (OMB) Circular No. A-90, and its transmittal memorandum No. 1.

**EFFECTIVE DATE:** This rule shall be effective on August 10, 1978.

#### FOR FURTHER INFORMATION CONTACT:

Theodore Goldberg, Assistant Director, Division of Grants and Procurement Policy, OGPAMP, OASAM, U.S. Department of Labor, 200 Constitution Avenue NW., Washington, D.C. 20210, telephone 202-523-9175.

**SUPPLEMENTARY INFORMATION:** On May 16, 1978, the proposal to amend 41 CFR Chapter 29, Department of Labor Procurement Regulations (DOLPR) was published in the