

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 434**

[WH-FRL2202-6]

Coal Mining Point Source Category; Effluent Limitations Guidelines for Existing Sources and Standards of Performance for New Sources**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: These regulations limit the discharge of pollutants into navigable waters from existing and new sources in the coal mining industry.

The Clean Water Act and a consent decree require EPA to issue this regulation.

The purpose of this regulation is to amend the previously promulgated "best practicable technology" (BPT) and "new source performance standards" (NSPS) and establish effluent limitation guidelines for "best available technology economically achievable" (BAT) for direct dischargers.

Pretreatment standards for both existing and new sources are not being issued since no known indirect dischargers exist nor are any known to be planned. Effluent limitations for "best conventional technology" (BCT) are reserved pending finalization of the BCT cost methodology.

DATES: In accordance with 40 CFR 100.01 (45 FR 28048), the regulations developed in this rulemaking shall be considered issued for purposes of judicial review at 1:00 p.m. Eastern time on October 27, 1982. These regulations shall become effective November 26, 1982, except for § 434.25(b) which contains information collection requirements which are under review at OMB.

Under Section 509(b)(1) of the Clean Water Act judicial review of these regulations is available only by filing a petition for review in the United States Court of Appeals within ninety days after these regulations are considered issued for purpose of judicial review. Under Section 509(b)(2) of the Clean Water Act, the requirements of the regulations promulgated today may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

Those portions of the existing coal mining effluent guidelines limitations and standards that are not substantively amended by this notice are not subject to judicial review nor is their effective date altered by this notice.

ADDRESSES: The basis for this regulation is detailed in three major documents. See section XVII, "Availability of Technical Information" under Supplementary Information for a brief description of each document.

Technical information may be obtained by writing to William A. Telliard, Effluent Guidelines Division (WH-552), EPA, 401 M Street SW., Washington, D.C. 20460, or by calling (202) 382-7131. Copies of the technical and economic documents can be obtained from the National Technical Information Service, Springfield, Virginia 22161 (703/487-6000).

The record will be available to the public [45 days from publication date] in EPA's Public Information Reference Unit, Room 2004 (Rear) (EPA Library), 401 M Street SW., Washington, D.C. The EPA information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Dennis Ruddy or Allison Phillips, (202) 382-7167

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I. Legal Authority

These regulations are being promulgated under the authority of Sections 301, 304, 306, 307, and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 *et seq.*, as amended by the Clean Water Act of 1977, Pub. L. 95-217) also called the "Act." These regulations are also being promulgated in response to the Settlement Agreement in *Natural Resources Defense Council, Inc. v. Train*, 8 ERC 2120 (D.D.C. 1976), modified, 12 ERC 1833 (D.D.C. 1979).

II. Scope of this Rulemaking

The coal mining industry is included within the U.S. Department of Commerce, Bureau of the Census, Standards Industrial Classification (SIC) 111 for Anthracite Mining and 121 for Bituminous Coal and Lignite Mining. The final regulation applies to subgroups 1111 Anthracite, 1112 Anthracite Mining Services, 1211, Bituminous Coal and Lignite, and 1213 Bituminous Coal and Lignite Mining Services.

As a result of the Clean Water Act of 1977, the emphasis of EPA's program has shifted from "classical" pollutants to the control of a list of toxic substances. Therefore, in this rulemaking, EPA's efforts are primarily directed toward ensuring the achievement of limitations based upon the best available technology economically achievable (BAT) by July 1, 1984.

EPA today is amending the previously promulgated NSPS and BPT for the coal mining industry and in addition to promulgating BAT limitations equal to the revised BPT limitations.

III. Summary of Legal Background

A. Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," Section 101(a). To implement the Act, EPA was to issue effluent standards, pretreatment standards, and new source performance standards for industry discharges.

The Act included a timetable for issuing these standards. However, EPA was unable to meet many of the deadlines and, as a result, in 1976, was sued by several environmental groups. In settling this lawsuit EPA and the plaintiffs executed a court-approved "Settlement Agreement". This Agreement required EPA to develop a program and adhere to a schedule in promulgating effluent limitations guidelines and pretreatment standards for 65 "priority" pollutants and classes of pollutants, for 21 major industries. See *Natural Resources Defense Council, Inc. v. Train*, 8 ERC 2120 (D.D.C. 1976), modified, 12 ERC 1833 (D.D.C. 1979).

Many of the basic elements of this Settlement Agreement program were incorporated into the Clean Water Act of 1977. Like the Agreement, the Act stressed control of toxic pollutants, including the 65 "priority" pollutants. In addition, to strengthen the toxic control program, Section 304(e) of the Act authorizes the Administrator to prescribe "best management practices" (BMOs) to prevent the release of toxic and hazardous pollutants from plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage associated with, or ancillary to, the manufacturing or treatment process.

Under the Act, the EPA program is to set a number of different kinds of effluent limitations. These are discussed in detail in the proposed regulation and Development Document. The following is a brief summary:

1. *Best Practicable Control Technology (BPT)*. BPT limitations are generally based on the average of the best existing performance by plants of various sizes, ages, and unit processes within the industry or subcategory.

In establishing BPT limitations, we consider the total cost of applying the technology in relation to the effluent reduction derived, the age of equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes, and non-water-quality environmental impacts (including energy requirements). We balance the total cost of applying

the technology against the effluent reduction.

2. *Best Available Technology (BAT)*. BAT limitations, in general, represent the best existing performance in the industrial subcategory or category. The Act establishes BAT as the principal national means of controlling the direct discharge of toxic and nonconventional pollutants to navigable waters.

In arriving at BAT, the Agency considers the age of the equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes, the cost of achieving such effluent reduction, and non-water-quality environmental impacts. The Administrator retains considerable discretion in assigning the weight to be accorded these factors.

3. *Best Conventional Pollutant Control Technology (BCT)*. The 1977 Amendments added Section 301(b)(2)(E) to the Act establishing "best conventional pollutant control technology" (BCT) for discharge of conventional pollutants from existing industrial point sources. Conventional pollutants are those defined in Section 304(a)(4) [biological oxygen demanding pollutants (BOD5), total suspended solids (TSS), fecal coliform and pH], and any additional pollutants defined by the Administrator as "conventional" [oil and grease, 44 FR 44501, July 30, 1979].

BCT is not an additional limitation but replaces BAT for the control of conventional pollutants. In addition to other factors specified in section 304(b)(4)(B), the Act requires that BCT limitations be assessed in light of a two part "cost-reasonableness" test. *American Paper Institute v. EPA*, 660 F. 2d 954 (4th Cir. 1981). The first test compares the cost for private industry to reduce its conventional pollutants with the costs to publicly owned treatment works for similar levels of reduction in their discharge of these pollutants. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find that limitations are "reasonable" under both tests before establishing them as BCT. In no case may BCT be less stringent than BPT.

EPA published its methodology for carrying out the BCT analysis on August 29, 1979 (44 FR 50732). In the case mentioned above, the Court of Appeals ordered EPA to correct data errors underlying EPA's calculation of the first test, and to apply the second cost test. (EPA had argued that a second cost test was not required). BCT for this regulation is reserved pending finalization of the BCT cost methodology.

4. *New Source Performance Standards (NSPS)*. NSPS are based on the best available demonstrated technology. These standards apply to all pollutants: toxic, conventional and nonconventional. New plants have the opportunity to install the best and most efficient production processes and wastewater treatment technologies.

5. *Pretreatment Standards for Existing Sources (PSES), and Pretreatment Standards for New Sources (PSNS)*. Pretreatment standards (PSES & PSNS) are designed to control the discharge of pollutants into publicly owned treatment works. Pretreatment standards were not proposed for the coal mining category since no known indirect dischargers exist nor are any known to be planned. Coal mines are located in rural areas, generally far from a POTW. EPA expects that the cost of pumping coal mine wastewater to a POTW would be prohibitive in most cases, and on-site treatment is more cost effective in virtually every instance.

B. Prior EPA Coal Mining Regulations

On October 17, 1975, EPA proposed Regulations adding Part 434 to Title 40 of the Code of Federal Regulations (40 FR 48830). These regulations, with subsequent amendments, established effluent limitations guidelines based on the use of the best practicable control technology currently available (BPT) for existing sources in the coal mining point source category. These were followed, on April 26, 1977, by final BPT effluent limitations guidelines for this category (42 FR 21380).

On September 19, 1977, the Agency published proposed standards of performance for new sources (NSPS) within this industrial category based on application of the best available demonstrated control technology (42 FR 46932). On January 12, 1979, EPA promulgated final NSPS for this industry (44 FR 2586).

Both the BPT and NSPS regulations contained an exemption from otherwise applicable requirements during and immediately after precipitation events. These storm exemptions were re-examined, subjected to further public comment and ultimately revised on December 28, 1979 (44 FR 76788).

Moreover, the NSPS regulations contained a definition of "new source coal mine" which was challenged by petitioners in *Pennsylvania Citizens Coalition v. EPA*, 618 F. 2d 991 (3rd Cir. 1980). In response to the Court's decision in that case, the Agency amended its definition of a "new source coal mine" on June 27, 1980 (45 FR 43413).

On January 13, 1981, amendments to the NSPA and BPT regulations and effluent limitations based on BAT and BCT were proposed (46 FR 3136). On May 29, 1981 the proposal was amended to change the criteria for the "storm exemption" (46 FR 28873).

After consideration of public comment (summarized in Section VI of this notice and detailed in the comments-response document), revised BPT and NSPS, and new BAT effluent limitations guidelines and standards are being promulgated today.

IV. Technology Overview

A. Overview of the Industry.

The coal mining industry currently operates in 26 states in Appalachia, the Midwest, and the Mountain and Pacific regions. There were 6,300 mines in 1980. There are currently about 540 coal preparation plants using wet coal cleaning methods in the country.

Total coal production in the United States in 1980 was 830,000,000 short tons.

In the 1920's underground mining accounted for nearly all coal production, and surface mining accounted for virtually none. By 1980, underground mining accounted for only 40.3 percent of all domestic production, with surface mining accounting for the rest.¹ This rapid growth of surface mining was made possible by improved machinery and mining methods, the general geology of the coal fields, and the expansion of the western, surface-mined, coal fields.¹

B. Wastewater Sources.

Water is not used in, and in fact interferes with, the mining of coal. The major sources of wastewater in the coal mining industry are: (1) Surface runoff and groundwater discharged from the active mine area; (2) wastewater generated by the removal of impurities from raw coal in preparation plants; (3) precipitation-induced runoff in preparation plant associated areas; and (4) runoff generated from reclamation areas and discharges from underground mines after mining ceases. Coal mine wastewater flows range from zero to over 12 million gallons per day (MGD), with an average discharge flow of approximately one MGD.

Process water used for coal cleaning can be correlated with production for any given preparation plant. However, most facilities commingle preparation plant wastewater with runoff from the associated areas, making correlation of wastewater flows with production

infeasible for purposes of an effluent regulation.

C. Treatment Technology.

Current technologies employed by coal mines and coal preparation plants to achieve BPT limitations for wastewater treatment typically include:

(a) Neutralization, aeration (where required), flocculation (where required), and sedimentation for acid mines; (b) aeration (where required), flocculation (where required), and sedimentation for alkaline mines; (c) neutralization (where required), flocculation (where required) and sedimentation for preparation plants and associated areas.

Neutralization is the addition of lime or another alkaline chemical to counteract the acidity. The resulting increase in pH (a measure of the acidity) causes the metal ions to chemically react to its hydroxide form which is insoluble and can be settled from the wastewater. Aeration involves the turbulent introduction of air into the wastewater to cause a series of chemical reactions that result in oxidation of certain metal ions and their enhanced precipitation (formation of solids). Flocculation is the addition of a compound that enhances agglomeration of solids, thus increasing their settling rate. Sedimentation involves containing the wastewater in a tank or basin for a sufficient amount of time to allow the solids to settle to the bottom.

V. Data Gathering Efforts

The data gathering efforts and methodology used in developing the proposed regulations were summarized in the "Preamble to the Proposed Coal Mining Point Source Category; Effluent Limitations Guidelines for Existing Sources, Standards of Performance for New Source and Pretreatment Standards" (46 FR 3136, January 13, 1981). *The Development Document for Effluent Limitations Guidelines and Standards for the Coal Mining Point Source Category* is the technical basis for this regulation. The Development Document includes new data acquired since January 1981. This new data includes results from (1) *Coal Mine Drainage Precision and Accuracy Determination for Settleable Solids at Less Than 1 ml/l*, and (2) *Coal Mining Industry Self-Monitoring Program*.

The Agency proposed in January 1981 (later amended in May 1981), to establish settleable solids and pH limitations for the coal mining industry during precipitation events and also for coal mining areas undergoing reclamation. The settleable solids and pH limitations were proposed as 0.5 ml/l and 6-9 respectively. The two studies

referenced above were performed to supplement the previously acquired data² supporting these alternate limitations.

VI. Summary of Proposal, Response to Major Comments, and Final Rule.

On January 13, 1981, and as later amended on May 29, 1981, EPA proposed BAT and BCT limitations and proposed revisions and amendments to existing BPT limitations and NSPS. A detailed description of the factors affecting the development of the proposed rule and the regulatory options considered is contained in the preamble to the January 13 proposal (46 FR 28873). To summarize briefly, the proposed rule set BAT, BCT, and NSPS equal to BPT except that a zero discharge limitation was proposed for new source coal preparation plants. The reader is directed to the preambles to the January 1981 proposal and subsequent May 1981 amendment for more detailed discussions of the substantive changes the proposal made to prior coal mining regulations. With the following three exceptions, the changes proposed in May 1981 are being adopted by today's action: (1) The design criteria to qualify for alternate limitations for rainfall events is deleted; (2) An allowance is made to the NSPS for coal preparation plants for necessary purges and blowdowns; and (3) BCT regulations are being reserved pending finalization of the EPA BCT cost methodology. These new changes have been incorporated into the final regulation as a result of comments received since proposal and as a result of further evaluation based on data collected since proposal.

The Agency received 56 comments on the proposed regulations from the industry, state and federal agencies, environmental organizations, and concerned individuals. Five major issues were identified from an evaluation of the comments, and these issues are addressed below. Responses to all of the comments are contained in a separate document available in the rulemaking record which will be filed in the Public Information Reference Unit at the EPA Library, 401 M St., S.W., Washington, D.C. 20460.

A. BPT

The amendments to BPT involving the "storm exemption", regulation of post-mining discharges, and western mines,

²Skelly & Loy, "Evaluation of Performance Capability of Surface Mine Sediment Basins", Harrisburg, PA, 1979, and also D'Appolonia Consulting Engineers, Inc. "Evaluation Sedimentation Pond Design Relative to Capacity & Effluent Discharge," Pittsburgh, PA, 1979.

¹Nielsen, George, ed., 1981 *Keystone Coal Industry Manual*, McGraw-Hill, New York, New York, 1981

are described below in E and F of this section.

B. BCT

1. *Proposed Regulation.* The proposed regulation recommended that BCT be set equal to BPT for the removal of TSS and pH control.

2. *Final Rule.* BCT for the final rule is being reserved pending finalization of EPA's BCT cost methodology.

C. BAT

1. *Proposed Regulation.* EPA proposed BAT effluent limitations equivalent to those promulgated under BPT (based on the same BPT technology). Iron and manganese would be the regulated pollutant parameters. Three other options were considered in the proposal. Two of these involved the use of supplemental treatment technology (flocculant addition and granular media filtration) beyond BPT. The third option considered zero discharge for coal preparation plants only. These options were rejected for reasons explained in the preamble to the January 1981 proposal.

2. *Response to Major Comments.* Comments concerning the proposed BAT options, except as discussed in E and F of this section, addressed areas such as regulated parameters, commingling of wastewater streams, and technology evaluations. These comments are responded to in EPA's Response to Comment Document.

3. *Final Rule.* EPA is promulgating BAT equal to BPT as proposed. This conclusion was based on five factors: (1) After BPT level treatment the toxic metals were found at levels very near or at concentrations considered to be the detection limit by state-of-the-art analytical techniques; (2) treatability studies, pilot plant studies, and statistical analyses indicated that very low, if any, additional reductions of toxic metal are achievable beyond BPT levels; (3) toxic organics that were detected in BPT-treated effluents occurred at levels too low to be effectively treated, were uniquely related to only a few facilities or were attributable to sampling or analytical contamination; (4) technical and cost considerations (e.g., producing power for and access to these additional water treatment technologies in remote areas in Appalachia) make it infeasible to implement the two BAT candidate technologies requiring supplemental treatment beyond BPT throughout the industry on a national basis; and (5) the insignificant amounts of incremental toxics removed by the zero discharge

requirement³ (for coal preparation plants) do not justify the resulting retrofit expenditures of \$291 million capital, \$52.6 million annual (1980 dollars).

D. NSPS

1. *Active Mines.* a. *Proposed Regulation.* The Agency considered the same treatment options for NSPS as it did for BAT. The Agency proposed to set NSPS equal to BPT for coal mines.

b. *Final Rule.* EPA is promulgating NSPS based on BPT for coal mines as proposed. However, the proposal has been corrected in the final rule so that the limitations for iron are the same as those originally promulgated for NSPS on January 12, 1979 (44 FR 2586).

2. *Coal Preparation Plants and Associated Areas.* a. *Proposed Regulations.* The Agency considered the same treatment options for NSPS as for BAT. The Agency proposed to set NSPS equal to BAT for coal preparation plant associated areas, and establish a zero discharge requirement for coal preparation plants.

b. *Response to Major Comments.* (i) *Zero Discharge Requirement.* Several commenters argued that EPA misinterpreted the results of its survey of existing coal preparation plants (conducted to evaluate zero discharge systems).⁴ Some commenters argued that if BAT limitations adequately control toxic pollutants, then a more stringent standard cannot be required for new sources. Several commenters also asserted that little or no net environmental benefits would result from the more stringent new source standards for preparation plants.

EPA has devoted substantial resources to the question of coal preparation plant discharges. Although every effort was made to clearly request data and information on water management practices in this industry during the EPA/NCA survey, responses from the industry participants were often rather ambiguous. Supplemental data provided by commenters were analyzed by EPA to clarify the survey results. (We note the inherent limitation in this analysis was that the data concerned existing plants, while only new source preparation plants were considered for a zero discharge

³See Section VI, "Selection of Pollutant Parameters," in the Final Coal Mining Development Document.

⁴EPA conducted a survey on preparation plants in cooperation with the National Coal Association (NCA) in early 1980. The purpose of the survey was to assess water usage and treatment in coal preparation plants. See Appendix E, "Preparation Plant Questionnaire Package", to the Proposed Development Document for Coal Mining, (EPA 440/1-81/057-b).

regulation in the proposal.) The basic finding from the results of data analysis was that of an estimated 650 preparation plants operating in 1978, 42 of these were achieving zero discharge.

In most cases, enough water, in a properly designed total recycle system, leaves with the refuse and the cleaned coal such that there is no excess water to be discharged. Data obtained from the EPA sponsored preparation plant study indicated that of the total volume of process water in a closed circuit, approximately 3 percent left the system with the cleaned coal and the refuse. A significant amount of water may also be lost via evaporation and seepage from slurry treatment ponds. (Slurry treatment ponds are necessary to treat the slurry generated by cleaning the coal. The slurry is generally sent to a treatment facility, usually a pond or clarifier, where solids settle to the bottom. The decant, or solid free water, is then recycled back to the coal cleaning operations.)

This water loss must be "made-up" from sources external to the plant's recycle system. Typical sources might be a fresh water lake or creek, mine drainage, well water, or precipitation and run-off from the surrounding area. The make-up into the system usually maintains an acceptable dissolved solids level for preparation plant operation in conjunction with the water that leaves, or is "blown down", with the coal and refuse.

Some preparation plants use chemicals in the slurry treatment process prior to water recycle. This is another potential area of concern. The chemicals consist primarily of light oils and/or surfactants used in the froth flotation process, and polymers used to aid settling in the clarifiers.

If these components were allowed to build up within the system, problems could occur with the coal cleaning process and/or equipment. However, EPA believes that the chances of this occurring are minimal, for the following reasons. The oils used in the froth flotation process are generally skimmed from the surface of the clarifiers/thickeners and recycled back to the process. There should be no excess oil if the supply is replenished only as needed. Similarly, the introduction of additional polymers or other chemicals to the system is generally halted until the supply already in circulation needs replenishment. If this practice is followed, there should be sufficient control over the chemical concentration in the recycled water.

Despite the above indications that zero discharge is a demonstrated,

achievable technology, there are some facilities where an occasional discharge from a recycle system is necessary. Commenters cited build-up of dissolved solids in the water system and other factors which can require such discharge. EPA agrees that in a total recycle system, a need may arise for a blowdown or purge to reduce the concentration of dissolved solids (TDS) in the recirculated water, in order to prevent the deposition of the solids in pipes, pumps, and other equipment. The level of dissolved solids which will interfere with coal preparation and treatment is determined by the water chemistry, (including pH) and the type of coal cleaning process.

(ii) Definition of a Coal Preparation Plant. The proposal defined a coal preparation plant as "a facility where coal is crushed, screened, sized, cleaned, dried or otherwise prepared and loaded for transit to a consuming facility". The Agency has reconsidered the applicability of this definition and has determined it to be unnecessarily inclusive of those facilities that do not have an effluent and thus do not require effluent limitations guidelines. Many plants that crush or size coal, for example, do not use water in the process and do not have a discharge. Thus, the definition has been changed to reflect only those coal preparation plants that use wet cleaning methods.

c. Final Rule. (i) Coal Preparation Plant Associated Areas. EPA is promulgating NSPS equal to BPT/BAT for coal preparation plant associated areas.

(ii) Coal Preparation Plants. Based on the above considerations, EPA is establishing NSPS for coal preparation plants at zero discharge of pollutants, with the following exception: occasional purges will be allowed when necessary to reduce the concentration of solids and/or process chemicals in the water circuit to a level which will not interfere with the preparation process. The zero discharge requirement is being promulgated for coal preparation plants because it is a demonstrated technology in this subcategory. Many existing facilities are currently practicing total recycle of preparation plant wastewaters. Further, this option is feasible for new sources at a reasonable cost, since wastewater treatment and management practices can be planned at the design stage, thereby avoiding costly retrofit. Finally, total recycle will remove considerable amounts of conventional pollutants (TSS), pollutants not regulated under BAT.

Facilities using the purge allowance will be subject to alternate limitations (equal to BAT/BPT) while purging. In

order to use the purge allowance, the coal preparation plant operator must submit a written notice in advance to the permitting authority which provides anticipated purge frequency, and explains why it is necessary to purge in order to continue operations. The purge may not take place if the permitting authority disapproves. The permitting authority may also include in the permit a provision limiting the frequency of the purge.

Coal preparation plants are more precisely defined in the final rule as "a facility where coal is subjected to cleaning, concentrating, or other processing or preparation in order to separate coal from its impurities and then is loaded for transit to a consuming facility."

3. Definition of New Source. a. Proposed Regulation. EPA proposed to amend the existing first paragraph [§ 434.11(j)(1)] of the definition for "new source" coal mines. (Note: The general definition for new sources at 40 CFR 122.3 applies to coal preparation plants and associated areas at 40 CFR 122.3 and should not be confused with the definition of a new source coal mine as presented in this Part 434); EPA proposed to delete the prior reference to a Mining Safety and Health Administration (MSHA) identification number because of substantial controversy that arose over the MSHA criteria (see 46 FR 3146). Under that first paragraph, new sources would be defined as "having commenced construction after the date of NSPS proposal." The second paragraph of the definition remained unaltered from previous regulations. That portion provides that, in addition to the definition contained in the first paragraph, a new source coal mine is one which the EPA Regional Administrator determines to constitute a "major alteration." That determination would be based on, among other factors, the extraction of a coal seam not previously extracted by that mine, discharges into a drainage area not previously affected by wastewater discharges from the mine, extensive new surface disruption, and the investment of significant capital in additional equipment.

b. Response to Major Comments. Commenters argued that the itemized list of factors in the second part of the definition should be deleted, since such situations are common to every mine, whether existing or planned. They fear that potentially every existing mine could be reclassified as a new source subject to NEPA review, EIS preparation, and a resultant one-year disruption of mining activity. Several

commenters also felt that the regulation would discourage the practice of remining (the extraction of residual coal from abandoned mines) by subjecting such operations to NEPA review.

EPA believes that the determination of a "new source," must be based on all the environmental factors considered together. The purpose of these factors is to identify mining activities that may result in significant new or environmental effects.

The commenters presented no facts or case histories to support the concern that the factors listed were not appropriate. They also did not suggest any alternate language that would be useful in formulating a definition for new source coal mines.

c. Final Rule. As proposed, EPA is deleting the reference to MSHA identification numbers and replacing it by the phrase: "a new source is that which commences construction after May 29, 1982." The second paragraph of the definition is unaltered from that of the previous regulation.

Today's regulation does not affect the status as new sources of those coal mines on which construction began before May 29, 1981, and which were defined as new sources under the NSPS regulations promulgated January 12, 1979 (44 FR 2586). In other words, if a coal mine did not obtain an MSHA number before September 19, 1977, it will continue to be considered a new source, even if construction began before May 29, 1982. However, those coal mines which have not yet been issued an NPSES permit and which are defined as "new sources" under either the old or new definition, will be subject to the standards promulgated in today's regulations. Facilities may apply to have existing permits modified, pursuant to 40 CFR 122.15, to reflect today's promulgation.

E. Applicability of Regulation

1. Western Mines. a. Proposed Regulation. The prior TSS limitation under BPT regulations did not apply to Western mines in six specified states (see 40 CFR 434.32(a) (1980)). Those mines are subject to permit limitations on TSS which are generally more stringent than the effluent guidelines limitation. In addition, the prior NSPS requirements created a subcategory for "Western Coal Mines", defined as mines located west of the 100-degree meridian (40 CFR 434.60). NSPS requirements for this subcategory were reserved. Under the proposed January 1981 regulation, western mines would no longer be a separate subcategory and would not be exempt from national TSS limitations.

Recent data collected by EPA has indicated that the effluent characteristics of discharges from western mines are very similar to discharges from mines in other geographic regions.⁵

b. Final Rule. Today's final rule will apply to all coal mines wherever located in the United States. (It should be noted, however, that where western mines have been subject to more stringent requirements under NPDES permits, they may, under certain conditions, continue to be subject to those requirements under 40 CFR 122.62(1) and 40 CFR 123.7.) Of course, permit writers in all areas may impose more stringent limitations where necessary to meet state water quality standards or other requirements.

2. *Post Mining Discharges.* a. Proposed Regulation. The proposed regulation would establish effluent limitations for post-mining discharges (discharges from mining areas after active mining operations cease) for both surface and underground mines. However, these limitations would apply only until release of the performance bond required by the Surface Mining Control Reclamation Act (SMCRA).

In the proposal, EPA solicited comment on whether regulations should be applied after release of the SMCRA bond, and stated that it was conducting a data gathering effort to determine if such regulations were necessary. Most comments received were in favor of the proposal to regulate only until release of the SMCRA bond.

b. Rationale for post-mining regulations prior to bond release. If a surface mine is properly reclaimed, storm runoff from the inactive mining areas generally will be of acceptable quality. However, in the absence of proper reclamation, runoff from these post-mining areas can contain unacceptable levels of solids and metals, and be highly acidic. Underground mines must also be properly sealed and otherwise closed upon cessation of active mining operations or else the drainage can have degrading effects on water quality. The Office of Surface Mining (OSM) has promulgated regulations under SMCRA to control both surface coal mining and the surface effects of underground coal mining. SMCRA requires coal mines to post a bond to secure their performance with requirements of the Act. Upon cessation of active surface mining, bond will not be fully released until the

SMCRA regulatory authority is satisfied that the mine operator has successfully met all reclamation requirements and that the untreated drainage from the area meets Federal and State requirements. (See 30 CFR, Section 807.11 and 807.12). Bond liability with respect to underground mines will be released when the SMCRA regulatory authority is satisfied that reclamation of the disturbed surface area is successful, and that the underground workings have been properly sealed and closed. Id. This bonding period lasts a minimum of five years (10 years west of the 100th meridian). Until those determinations are made by SMCRA authorities, EPA believes that effluent limitations guidelines and standards are appropriate.

The parameters proposed to be regulated and their respective effluent limitations for post mining discharges from underground mines are the same as those for active mines: pH, TSS, iron, and manganese. Post-mining discharges from underground mines exhibit wastewater characteristics similar to those found in active mine drainage.⁶

The parameters proposed to be regulated for post-mining discharges from surface mines are settleable solids and pH. Their effluent limitations are 0.5 ml/l and 6-9 respectively. The reasons for regulation of these specific parameters and selection of their numerical limitations are the same as those discussed below for the storm exemption provisions because post mining discharges from surface mines are primarily a result of runoff from precipitation.

c. Rationale for not regulating post-mining discharges after SMCRA bond release. EPA initiated a study on post-bond release discharges to further ascertain the need for post-bond release regulations. This study was not completed because insufficient data exist to determine the need for, or support the development of, post-bond release regulations.⁷ There are not enough reclaimed mines that have obtained bond release under the current SMCRA regulations to conduct a water discharge characterization sampling program. What data EPA has reviewed does not indicate a problem warranting the promulgation of nationally applicable regulations.

⁶ Frontier Technical Associates, Inc., "Inventory of Anthracite Coal Mining Operations, Wastewater Treatment and Discharges Practices," Buffalo, N.Y., June 10, 1980.

⁷ See "Investigation of Post-Mining Wastewater Discharges after SMCRA Bond Release," in Appendix C of the Final Development Document for Coal Mining.

These results, coupled with the fact that the release of bond by SMCRA authorities signifies their determination that post-mining pollution problems are abated and can be reasonably expected not to occur, indicate that a need for nationally applicable regulations for discharges after bond release currently does not exist. However, any point source discharge after bond release does require a permit and will be addressed on a case-by-case basis.

d. Final Rule. The Agency is promulgating effluent limitations for settleable solids and pH for post-mining discharges from surface mine drainage and limitations for TSS, pH, iron, and manganese for underground mine drainage. These limitations will remain in effect until release of the performance bond by SMCRA authorities.

F. Alternate Limitations for Precipitation Events

1. *Proposed Regulation.* Under existing regulations prior to this rulemaking, both surface and underground coal mines are exempt from all otherwise applicable requirements if: (a) The treatment facility is designed to treat or contain the volume from a 10-year, 24-hour precipitation event⁸ and (b) there is an overflow, increase in volume of a discharge, or discharge from a bypass system as a result of precipitation. This exemption permits a discharge without regard to effluent quality if conditions (a) and (b) were satisfied.

The proposal differed from these existing regulations in that it would have added the requirement that the facility comply with a 0.5 ml/l settleable solids limitation during storms which do not exceed the 10-year, 24-hour event for discharges from active mining areas. In addition, EPA proposed that pH limitations between 6 and 9 be met at all times. In order to qualify for the alternate effluent limitations during precipitation events, the proposal retained the requirement that the treatment facility must be designed, constructed and operated to contain the disturbed area runoff from a 10-year, 24-hour storm.

The proposed alternate limitations would not apply to discharges from underground workings at underground

⁵ Effluent Guidelines Division, Environmental Protection Agency, "Comparison of Coal Mine Wastewaters from Eastern and Western Mines," Washington, D.C., January 1981.

⁸ The term "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40 "Rainfall Frequency Atlas of the U.S.," May 1961, or the NOAA Atlas Volumes I-XI or equivalent regional rainfall probability information developed therefrom.

mines, but would apply to drainage from surface areas of underground mines.

2. Response to Major Comments

a. Regulation of Settleable Solids

Instead of TSS. Several commenters questioned whether any settleable solids limitation would adequately control sediment during precipitation events of any size. The concern was that a settleable solids limitation can mask levels of suspended solids as high as 2,000 mg/l.

In 1979, Skelly & Loy conducted a study for EPA to define pond performance, particularly for those storms less than the 10-year, 24-hour event.⁹ This study concluded that a number of site-specific factors make it extremely difficult to predict, on a generic basis, what TSS effluent concentrations can be expected from a sediment pond of a given size and design during precipitation events (and also during reclamation). However, the Agency undertook a one year data collection effort, completed in 1981, with industry participation under Section 308 of the Act to characterize the effluent quality during and immediately after storm events from sediment ponds receiving waters from active mines as well as reclamation areas across the country.¹⁰ This study was completed in May 1981. The 24 ponds for which data was submitted included treatment ponds sized to contain a 10-year, 24-hour storm and also those that were of smaller sizes. One of the results of this study confirmed the earlier conclusions of the Skelly & Loy study that TSS effluent concentrations vary too widely, due to site specific factors, to base a national regulation on this parameter. However, this does not preclude permit writers from establishing a TSS limitation on a case-by-case basis when such limitations are necessary to carry out the purposes of the Act.

While national TSS limitations could not be supported, EPA found that settleable solids limitations control sediment during precipitation events. Analysis of the settleable solids data base with consideration of limits of detection and precision resulted in what EPA believes to be a justifiable method to control "solids" during precipitation. Moreover, the choice of settleable solids as a control parameter during precipitation events would assure installation and operation of a technology to control solids discharge

and siltation—the primary reason for regulating such discharges.

b. Settleable Solids Limitations. (i) Limit of Detection. Several commenters pointed out that a settleable solids limitation of 0.5 ml/l is inconsistent with *Standard Methods* (14th Ed. American and Public Health Association, Washington, D.C., 1975) protocol, which provides that the detection limit for settleable solids is "about 1.0 ml/l".¹¹

EPA believes that a lower settleable solids detection limit for the coal mining industry is practical. Accordingly, EPA's Office of Water, in collaboration with EPA's Environmental Monitoring and Support Laboratory (EMSL), undertook a test program which estimated the method detection limit as part of a study to determine the precision and accuracy of measuring settleable solids below 1.0 ml/l.¹² This study was conducted on effluents from active mining area and reclamation area discharges from both eastern and western coal mines. Under this program, eight treatment ponds were sampled and analyzed for settleable solids using the *Standard Methods* protocol. Based on the results of this study, EPA has concluded that it is possible to measure settleable solids levels below 1.0 ml/l and thus, the data submitted in the self-monitoring survey provide a reasonable basis for establishing a limitation below 1.0 ml/l. Repeated determinations of the method detection limit produced estimates well below 1.0 ml/l.¹³ The average of the 8 field determinations of the method detection limit for settleable solids was 0.22 ml/l and the maximum estimated detection was 0.40 ml/l. As a result of this study, the method detection limit for settleable solids in the coal mining industry is redefined conservatively in this rulemaking at 0.4 ml/l, the maximum of the field determinations.

(ii) 0.5 ml/l Limitations. Some commenters charged that the 0.5 ml/l settleable solids limitation was too low,

¹¹ 40 CFR 401.13 provides that "the test procedures for measurement which are prescribed at Part 136 of this chapter shall apply to expressions of pollutant amounts, characteristics or properties in effluent limitations guidelines and standards of performance and pretreatment standards as set forth at Parts 402 through 699 of this subchapter, unless otherwise specifically noted or defined in said parts." Part 136 currently refers to EPA's *Standard Method* (14th Ed., American and Public Health Association, Washington, D.C., 1975).

¹² See Appendix B, "Coal Mine Drainage Precision and Accuracy Determination for Settleable Solids at Less than 1.0 ml/l", in the Final Development Document for Coal Mining.

¹³ The detection limit was calculated according to the "Definition and Procedure for the Determination of Method Detection Limit," Rev. 1.11 Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH 45268, 21 Jan. 1981 (Ref.: Environmental Science and Technology" 15 (1981), p. 1426).

noting that some settleable solids values in EPA's data base (obtained from the industry self-monitoring survey) exceeded 0.5 ml/l.

The Agency analyzed the self-monitoring data and concluded that 0.5 ml/l is a reasonable limitation value. Of the 24 ponds that submitted responses to the survey, 17 were sized to contain the runoff from a 10-year, 24-hour storm (according to the revised definition of a "10-year, 24-hour" pond as presented in the May 26, 1981 amendment to the January 13, 1981 Federal Register proposal). Two of the 17 were excluded from the analysis because of design and operational problems, (see Section VII of the Final Coal Development Document) and 4 were excluded because there was no discharge reported during wet weather conditions. Two hundred and sixty-two wet weather settleable solids measurements of effluent quality were reported for the remaining 11 ponds over a one year period. 98.5% of these measurements did not exceed 0.5 ml/l. Based on a statistical analysis of this data, the Agency concluded that the 0.5 ml/l value is consistent with the 99 percent compliance criteria generally used to establish effluent limitations and thus is a reasonable limitation.

Furthermore, EPA's confidence in the 0.5 ml/l limitations is strengthened by data from smaller ponds included in the 308 self-monitoring survey. That data revealed that in addition to the performance of the 10-year, 24-hour ponds, a large portion of the effluent from smaller ponds met the 0.5 ml/l limitation as well. Indeed, when data from all 24 ponds in the survey (except the 2 with design and operational problems and the 4 without discharges) are analyzed together, 98.3% of a total of 414 measurements were less than or equal to 0.5 ml/l.

Additional consideration of the operation and design of the ponds surveyed that some of the ponds with high values may have been improperly designed or operated. The Agency believes that slight upgrading of the ponds exhibiting some large effluent values would very likely result in improved performance. Thus, on the basis of all ponds surveyed, EPA is confident that 0.5 ml/l settleable solids is an appropriate limitation for the industry.

c. Pond Design Criteria. Several commenters believed that either the design criteria or numerical effluent limitations, but not both, should be specified.

The treatment facility design criteria in the "storm exemption" as written in

⁹ Skelly & Loy, Engineers Consultants, "Evaluation of Performance Capability of Surface Mine Sediment Basins, Harrisburg, PA, July 1979.

¹⁰ See Appendix A, "Coal Mining Industry Self-Monitoring Program," of the Final Coal Mining Development Document.

the previously promulgated regulation and the proposed regulation to this rule, compels the construction of a particular type of treatment facility—a pond—in order to qualify for the exemption. In the absence of this design criteria, other options for treatment, such as diversion ditching or diking, may be available. These options may permit some conservation of water for other uses, particularly in arid areas. For these reasons, the Office of Surface Mining (OSM) has proposed to delete its design criteria (46 FR 34684 (July 2, 1981)).

EPA is deleting the pond design criteria also. In order to allow this flexibility, final regulations contain numerical limitations but not a pond design criteria. EPA will no longer require that a pond be sized to contain the runoff from the 10-year, 24-hour event in order for a facility to qualify for alternate limitations during precipitation events. Instead, a settleable solids and pH limitation of 0.5 ml/l and 6-9 respectively will apply as alternate limitations during precipitation events less than or equal to the 10-year, 24-hour storm event for any treatment facility. Only a pH limitation (of 6-9) will apply during precipitation events greater than a 10-year, 24-hour storm event.

d. **Applicable Time Frame for Alternate Limitations.** The alternate limitations in the proposed regulation would have been keyed to a 10-year, 24-hour event, that is a storm occurring within a 24-hour event. Comments were submitted expressing a concern over the possibility of experiencing consecutive storms over a greater than 24-hour period such that the resulting combined runoff volume exceeds that of the 10-year, 24-hour storm. Data obtained from previous studies has shown this occurrence to be very rare.¹⁴ Moreover, EPA's data base shows that treatment facilities can meet a settleable solids limitation of 0.5 ml/l even during heavy rains. However, if such consecutive rainfall events do occur over a greater than 24-hour period causing a facility to exceed its settleable solids limitation, the facility may invoke the Agency's upset or by-pass provisions. (See Section XII.)

e. **Discharges from Underground Mines.** Several commenters argued that where discharges from underground workings of underground mines are commingled with surface mine drainage, they should be subject to the "storm exemption". EPA agrees with these

commenters and has clarified the proposal accordingly.

f. **pH Limitation.** Comments were submitted that expressed concern over the potential lack of data representative of a 10-year, 24-hour precipitation event. They stated that the pH limitation for storm events greater than the 10-year, 24-hour event has no basis in EPA's proposal and should be deleted. Actually, the data were not lacking in this area. Based upon rainfall data submitted with self-monitoring and analytical results, one participant experienced a 10-year, 24-hour precipitation event and three others experienced large events virtually equivalent to the 10-year, 24-hour precipitation event and three others experienced large events virtually equivalent to the 10-year, 24-hour event, as indicated in the following table.

Mine code	10-yr, 24-hr event (inches)	Rainfall experienced (inches)
101.....	3.7	3.7
33-01.....	4.5	4.25
33-02.....	4.5	4.25
25-04.....	3.7	3.69

These results indicate that a pH within the range of 6 to 9 can, in fact, be maintained at all times. Accordingly, EPA is promulgating the pH limitations to be met at all times.

g. **Alternate Limitation Enforcement.** Comments were raised expressing general concern over the enforceability of the alternate storm limitations. The Agency intends to develop a supplemental guidance package which will provide a more detailed explanation of the meaning of the regulation and how it should be enforced. This guidance package will be distributed to Regional and State permitting authorities whereby it will be reviewed during a series of workshops.

However, the Agency expects that all coal mining facilities must maintain a good faith effort to comply with these limitations as intended. Alternate storm limitations are to apply only when "dry weather" limitations cannot be met due to a discharge resulting from a particular precipitation event.

3. **Final Rule.** EPA is promulgating alternate limitations for coal mines and coal preparation plants and associated areas. These alternate limitations limit pH at 6-9, and settleable solids at 0.5 ml/l during precipitation events less than a 10-year, 24-hour storm. pH only is limited during precipitation events equal to or greater than a 10-year, 24-hour storm. The method detection limit for settleable solids in the coal mining category is set at 0.4 ml/l. This

supersedes the detection limit for settleable solids set forth in 40 CFR Part 136.

These alternate limitations are available to any treatment facility. The permittee must show that the discharge of increase in discharge resulted from a precipitation event. For this purpose, the permittee may maintain a precipitation gage at the facility or rely on data from the nearest weather station with a precipitation gage.

The alternate limitations do not apply to discharges from underground workings at underground coal mines. The limitations will apply, though, to drainage from the surface area of underground mines. In addition, the proposal has been clarified for the final rulemaking so that the alternate limitations apply also where surface area discharges are commingled with discharges from underground workings at underground mines. Also, the alternate limitations are not available for new source preparation plants, which, subject to the purge allowance (see VI., D.2), will be required to meet zero discharge of process wastewater pollutants.

VII. Regulated Pollutants

The bases upon which the regulated pollutants were selected is presented in Section VI of the Development Document. The summary below presents the regulated pollutants for BAT, and also the new or changed standards or limitations for BPT and NSPS.

A. Amended BPT.

EPA is amending the "storm exemption" provided to BPT limitations. The design criteria (capacity to contain the discharge from a 10-year, 24-hour storm) is deleted and settleable solids and pH limitations are established for control of discharges during precipitation events of less than a 10-year, 24-hour magnitude and for reclamation areas. pH limitations are applied for precipitation events greater than or equal to that magnitude. These limitations are applicable to discharges from (1) preparation plant associated areas; (2) surface area drainage; (3) reclamation areas, and (4) underground mine drainage that is commingled with any of the first three types of discharges. **Note:** The pH and settleable solids limitations are applicable to reclamation areas during dry weather as well as wet weather conditions.

B. BAT.

The pollutants selected for control are: (1) Total iron; and (2) total manganese during dry weather flows. Settleable

¹⁴D'Appolonia Consulting Engineers, Inc., "Evaluation of Sedimentation Pond design Relative to Capacity and Effluent Discharge", Pittsburgh, PA, 1979.

solids and pH are limited during precipitation events and for post-mining areas as described above in (A).

C. NSPS.

The pollutants selected for control during dry weather flows are: (1) Total suspended solids; (2) total iron; (3) total manganese; (4) pH. Settleable solids and pH are regulated during precipitation events and for post-mining areas as described in (A) above.

VIII. Pollutants Not Regulated.

Paragraph 8(a)(iii) of the Settlement Agreement contains provisions authorizing the exclusion from regulation, in certain instances, of toxic pollutants and industry subcategories.

The analytical results from the sampling program, summarized in the preamble to the proposed regulation, were used in making the determination of what pollutants should be excluded from regulation under the Settlement Agreement. We have made no change in the pollutants excluded since proposal. The selection criteria is also summarized in the preamble and described in more detail in the Development Document for Coal Mining. All the toxic 129 Priority Pollutants are not being regulated under BAT or NSPS in accordance with paragraph 8(a)(iii) of the Settlement Agreement. These pollutants are listed in Appendices B-H of this Notice.

IX. Costs and Economic Impacts

Executive Order 12291 requires EPA and other agencies to perform regulatory impact analyses of "major rules." Major rules are those that impose an annual cost to the economy of \$100 million or more, or meet other economic impact criteria. This proposed regulation for coal mining is not a major rule and therefore does not require a formal regulatory impact analysis. This proposed rulemaking satisfies the requirement of the Executive Order for a non-major rule.

The economic impact assessment is presented in *Economic Impact Analysis of Final Effluent Standards and Limitations for the Coal Mining Industry*, EPA 440 2-82/006. This report details the investment and annual costs for the industry as a whole and for typical plants covered by the regulation. Compliance costs are based on engineering estimates of capital requirements for the effluent control systems described earlier in this preamble. The report assesses the impact of effluent control costs in terms of price changes, production change, mine closures, employment effects, and balance of trade effects. These impacts

are discussed in the report for each of the regulatory options.

The estimated economic impact of the regulatory alternatives considered for this rulemaking were analyzed through the simulation of supply and demand in the spot and contract coal markets in 1984. Regional supplies and costs were forecast for 1984 in the steam (spot and contract) and metallurgical coal markets, incorporating differentials in coal prices due to differing production, transportation and coal utilization costs. These estimates were used in the coal market simulation model to evaluate the economic impact of the alternatives in 1984. The impact is measured as the difference in levels of production, employment, wages and investment requirements for pollution control between the base case and alternative levels of treatment. The base case incorporates the compliance costs of the BPT limitations.

No additional costs or impacts are expected due to the post-mining discharge limitations for acid and alkaline mines under the amended BPT regulations, the BAT regulations and NSPS regulations. OSM already requires that when mine drainage occurs within the bonding period at a mine it must be treated until the discharge ceases or meets the applicable State and Federal water quality requirements. (See 30 CFR 816.42 and 817.42.) Therefore, any capital and operating costs resulting from compliance with the proposed EPA regulation are already incurred as a result of compliance with OSM regulations. There will not be any incremental impact for this extended coverage.

A. BPT.

The amendments to existing BPT regulations do not generally impose additional requirements and so are not expected to generate additional compliance costs. This regulation does expand the applicability of BPT regulations to post-mining areas, but as described above, that expansion will not cause additional costs. The revised storm exemption will not require the installation of new or additional technologies, nor will the deletion of the western mine subcategory. Thus, no incremental economic impacts are projected for these amendments.

B. BAT.

The BAT limitations promulgated today for existing source mines and preparation plants and associated areas do not require any additional treatment technology beyond that already needed to meet promulgated BPT standards. Therefore, no additional costs or

impacts are expected for these existing sources.

C. NSPS.

The requirement of no discharge for new source coal preparation plants is different than that currently required for existing sources. (The limitations for associated areas are unchanged.) Incremental capital requirements and annualized costs above BPT/BAT technology for a typical new source coal preparation facility are projected to be as high as \$1.6 million and \$379 thousand respectively (1982 dollars). It is estimated that these requirements could potentially increase the cost to clean coal by 3.5 percent. The cost of the "cleaned" coal would increase by less than 1 percent. No change is expected in the demand for coal preparation as a result of the zero discharge requirement. This requirement is not expected to decrease the number of plants entering the industry in the near term.

D. Regulatory Flexibility Analysis.

Public Law 96-354 requires EPA to prepare an Initial Regulatory Flexibility Analysis for all proposed regulations that have a significant impact on a substantial number of small entities. The analysis may be conducted in conjunction with or as part of other Agency analysis. EPA has determined that this regulation will not have a significant impact on a substantial number of small entities. Therefore, a formal Regulatory Flexibility Analysis is not required.

X. Non-Water-Quality Aspects of Pollution Control.

The elimination or reduction of one form of pollution may aggravate other environmental problems. Therefore, Sections 304(b) and 306 of the Act require EPA to consider the non-water quality environmental impacts (including energy requirements) of certain regulations.

While it is difficult to balance pollution problems against each other and against energy utilization and economic constraints, EPA is promulgating regulations which it believes best serve competing national goals.

This regulation was circulated to and reviewed by EPA personnel responsible for nonwater quality environmental programs. The following are the nonwater quality environmental aspects (including energy requirements) associated with the proposed regulations.

A. Air Pollution.

Imposition of the amended BPT, BAT, and NSPS standards will not create any additional air pollution problems.

B. Solid Waste.

Some of the solid waste production associated with the coal mining industry is generated by current treatment systems installed primarily to treat wastewater. Imposition of BAT and NSPS standards will not measurably increase the solid waste production for the industry. BAT standards will add no additional solid waste since BAT limitations would be equivalent to the BPT requirement in all subcategories. The Agency is issuing BPT/BAT requirements for areas under reclamation and for sites where mining has ceased; however, sediment control for these areas is already required by other federal regulations, and thus no additional solid waste would result.

The same is true for NSPS, with the exception of the coal preparation plant subcategory. The Agency is requiring that new source preparation plants achieve zero discharge of process wastewater pollutants except for a purge allowance. The additional solid waste production associated with implementation of zero discharge would be minimal. This is demonstrated by examining concentrations of suspended solids at different points in the preparation plant treatment system. The average concentration of total suspended solids in the raw wastewater is 34,100 mg/l. BPT technology reduces this to 35 mg/l, daily maximum, or less. Therefore, the vast majority of solid waste would be generated from the BPT requirement, with relatively small additional amounts produced by the NSPS requirement.

C. Energy Requirements.

Achievement of BAT and NSPS effluent limitations will not result in a significant net increase in energy requirements because these standards are equivalent to BPT effluent limitations, with the exception of the NSPS requirement of zero discharge for coal preparation plants. The zero discharge standard may mandate installation of additional pump equipment and, in a few cases, chemical addition equipment to provide recycle water of adequate quality to be reused in the plant. However, the energy requirements of recycle pump operation, for instance, will be offset to a great extent by decreased fresh-water-make-up pump energy requirements. Thus, the incremental amount of energy associated with these techniques,

beyond the BPT or BAT requirement, is insignificant.

XI. Best Management Practices

Section 304(e) of the Clean Water Act authorizes the Administrator to prescribe "best management practices" ("BMP's") to control "plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage." However, the Administrator may prescribe BMP's only where he finds that they are needed to prevent "significant amounts" of toxic or hazardous pollutants from entering navigable waters.

In contrast to this authority, Congress, through SMCRA, directed OSM to prescribe a range of management practices for coal mines. SMCRA and OSM's implementing regulations are essentially a BMP program tailored for coal mines, reflecting Congress' awareness that a comprehensive regulatory scheme is needed to remedy the host of environmental degradations caused by past mining practices.

Therefore, it is not EPA's intention at this time to promulgate BMP's for coal mining under the Clean Water Act. Rather, it is anticipated that today's regulations governing point source discharges, coupled with OSM's program, will provide a coherent and complementary framework for the regulation of this industry. The two agencies have worked closely on this rulemaking and related rulemaking by OSM to ensure that duplication and conflict in federal regulation does not occur. If, in the future, it appears that BMP's under the Clean Water Act are necessary to supplement OSM's program, EPA will propose them as appropriate.

XII. Upset and Bypass Provisions

A recurring issue of concern has been whether industry guidelines should include provisions authorizing noncompliance with effluent limitations during periods of "upset" or "bypass." An upset, sometimes called an "excursion", is an unintentional noncompliance occurring for reasons beyond the reasonable control of the permittee. It has been argued that an upset provision is necessary in EPA's effluent limitations because such upsets will inevitably occur even in properly operated control equipment. Because technology based limitations require only what technology can achieve, it is claimed that liability for such situations is improper. When confronted with this issue, courts have disagreed on whether an explicit upset or excursion exemption is necessary, or whether upset or excursion incidents may be handled

through EPA's exercise of enforcement discretion. Compare *Marathon Oil Co. v. EPA*, 564 F.2d 1253 (9th Cir. 1977) with *Weyerhaeuser v. Costle, supra*, and *Corn Refiners Association, et al. v. Costle*, No. 78-1069 (8th Cir., April 2, 1979). See also *American Petroleum Institute v. EPA*, 540 R. 2d 1023 (10th Cir. 1976); *American Petroleum Institute v. EPA*, 661 F.2d 340 (5th Cir. 1981); *CPC International, Inc. v. Train*, 540 F.2d 1320 (8th Cir. 1976); and *FMC Corp. v. Train*, 539 F.2d 973 (4th Cir. 1976).

A by pass however, is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. We have, in the past, included bypass provisions in NPDES permits.

EPA has determined that both upset and bypass provisions should be included in NPDES permits and have promulgated Consolidated Permit Regulations that include upset and bypass permit provisions (see 40 CFR 122.60, 45 FR 33290, May 19, 1980.) The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology-based effluent limitations. The bypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property damage.

The Agency has received numerous inquiries concerning the relationship between the general upset and bypass provisions set forth in the consolidated permit regulations and the storm exemption contained in the BPT/BAT and NSPS regulations for coal mining. The storm "exemption" in today's regulation provides alternate limitations during precipitation events only. Similarly, the "purge" provision in Section 434.25(b) provides alternative limitations with respect to specified discharges from coal preparation plants. The upset and bypass provisions are also available to coal mine operations.

XIII. Variances and Modifications

Upon the promulgation of this regulation, the effluent limitations for the appropriate subcategory must be applied in all Federal and State NPDES permits thereafter issued to direct dischargers in the coal mining industry.

For the BPT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. (See *E. I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112 (1977); *Weyerhaeuser Co. v. Costle, supra*). This variance recognizes factors concerning a particular discharger that are fundamentally different from the factors considered in this rulemaking. Although this variance clause was set

forth in EPA's original coal mining regulations, it is now included in EPA's Consolidated Permit Regulations (40 CFR Part 125, Subpart D) and is included only by reference in the coal mining guidelines.

The BAT limitations in this regulation are also subject to EPA's "fundamentally different factors" variance. BAT limitations for nonconventional pollutants are subject to modifications under Sections 301(c) and 301(g) of the Act. These statutory modifications do not apply to toxic or conventional pollutants. According to Section 301(j)(1)(B), applications for these modifications must be filed within 270 days after promulgation of final effluent limitations guidelines. (See 43 FR 40895, September 13, 1978).

XIV. Relationship to NPDES Permits

The BAT, and NSPS limitations in this regulation will be applied to individual coal mines through NPDES permits issued by EPA or approved state agencies, under Section 402 of the Act. As discussed in the preceding section of this preamble, these limitations must be applied in all Federal and State NPDES permits except to the extent that variances and modifications are expressly authorized. Other aspects of the interaction between these limitations and NPDES permits are discussed below.

One issue that warrants consideration is the effect of this regulation on the powers of NPDES permit-issuing authorities. The promulgation of this regulation does not restrict the power of any permitting authority to act in any manner consistent with law or these or any other EPA regulations, guidelines, or policy. For example, even if this regulation does not control a particular pollutant, the permit issuer may still limit such pollutant on a case-by-case basis when limitations are necessary to carry out the purposes of the Act. In addition, to the extent that State water quality standards or other provisions of State or Federal law require limitation of pollutants not covered by this regulation (or require more stringent limitations on covered pollutants), such limitations must be applied by the permit-issuing authority.

A second topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which were considered in developing this regulation. We emphasize that although the Clean Water Act is a strict liability statute, the initiation of enforcement proceedings by EPA is discretionary. We have exercised and intend to exercise that discretion in a manner that recognizes and promotes

good-faith compliance efforts and conserves enforcement resources for those who fail to make good-faith efforts to comply with the Act.

The alternate storm limitations provided in this regulation present a new enforcement concept. As discussed in Section VI. F. of this preamble, the Agency intends to develop a supplemental guidance package which will provide a more detailed explanation of the meaning of the alternate limitations and how they should be enforced. This guidance package will be sent to Regional and State permitting authorities.

XV. Public Participation

Numerous agencies and groups have participated during the development of these effluent guidelines and standards. Following the publication of the proposed rules on May 29, 1981, in the *Federal Register*, EPA provided the development document supporting the proposed rules to industry, Government agencies, and the public sector for comments. Two workshops were held on the BAT Rulemaking in August 1981 in Louisville, KY., and in Denver, CO.

All comments received have been carefully considered, and appropriate changes in the regulation have been made whenever available data and information supported those changes. Major issues raised by the comments are addressed under the relevant section within the body of this preamble. A summary of the comments received and our detailed responses to all comments are included in a report, "Responses to Public Comments, Proposed Coal Mining Effluent Guidelines and Standards," which is a part of the public record for this regulation.

XVI. Small Business Administration (SBA) Financial Assistance

The Agency is continuing to encourage small manufacturers to use Small Business Administration (SBA) financing as needed for pollution control equipment. Three basic programs are in effect: the Guaranteed Pollution Control Bond Program, the Section 503 Program, and the Regular Guarantee Program. All the SBA loan programs are only open to businesses with net assets less than \$6 million, with an average annual after-tax income of less than \$2 million, and with fewer than 250 employees.

The guaranteed pollution control bond is a full faith and credit instrument with a tax free feature, making it the most favorable of the programs. Although all 1981 funds have already been committed, the SBA is attempting to obtain additional funding for this program. The program applies to

projects that cost from \$150,000 to \$2,000,000.

The Section 503 Program, as amended in July 1980, allows for long-term loans to small and medium-sized businesses. These loans are made by SBA-approved local development companies, which for the first time are authorized to issue Government-backed debentures that are bought by the Federal Financing Bank, an arm of the U.S. Treasury.

Through SBA's Regular Guarantee Program, loans are made available by commercial banks and are guaranteed by the SBA. This program has interest rates equivalent to market rates.

For additional information on the Regular Guarantee and Section 503 Programs contact your district or local SBA Office. The coordinator at EPA headquarters is Ms. Frances Desselle who may be reached at (202) 382-5373.

For further information and specifics on the Guaranteed Pollution Control Bond Program contact: U.S. Small Business Administration, Office of Pollution Control Financing, 404 North Fairfax Drive, Rosslyn, Virginia 22203, (703) 235-2902.

The regulation was submitted to the Office of Management and Budget for review as required by Executive Order 12291.

XVII. Availability of Technical Assistance

The basis for this regulation is detailed in three major documents. Analytical methods are discussed in Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants. EPA's technical conclusions are detailed in *Development Document for Effluent Guidelines, New Source Performance Standards, and Pretreatment Standards for the Coal Mining Industry Point Source Category*, EPA 440/1-82/057. The Agency's economic analysis presented in *Economic Impact Analysis of Final Effluent Standards and Limitations Pollution Control Technologies for the Coal Mining Industry*, EPA 440/2-82/006. A summary of the public comments received on the proposed regulation is presented in a report "Responses to Public Comments, Proposed Coal Mining Industry Effluent Guidelines and Standards," which is part of the public record for this regulation.

XVIII. Reporting Requirements

Under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* the information provisions in § 434.25(b) of this rule have been submitted to the Office of Management and Budget (OMB) for approval. They are not

effective until OMB approves them. A notice of the approval will be published in the Federal Register.

List of Subjects in 40 CFR Part 434

Mines, Water pollution control, Waste treatment and disposal.

Dated: September 30, 1982

John W. Hernandez, Jr.,
Acting Administrator.

Part 434 of Title 40 is revised to read as follows:

PART 434—COAL MINING POINT SOURCE CATEGORY; BPT, BAT, BCT LIMITATIONS AND NEW SOURCE PERFORMANCE STANDARDS

Subpart A—General Provisions

Sec.

- 434.10 Applicability.
434.11 General definitions.

Subpart B—Coal Preparation Plants and Coal Preparation Plant Associated Areas

- 434.20 Applicability.
434.21 [Reserved].
434.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available [BPT].
434.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable [BAT].
434.24 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology [BCT]. [Reserved]
434.25 New Source Performance Standard [NSPS].

Subpart C—Acid or Ferruginous Mine Drainage

- 434.30 Applicability.
434.31 [Reserved].
434.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
434.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
434.34 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
434.35 New Source Performance Standards (NSPS).

Subpart D—Alkaline Mine Drainage

- 434.40 Applicability.
434.41 [Reserved].
434.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of

Sec.

- the best practicable control technology currently available (BPT).
434.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
434.44 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
434.45 New Source Performance Standards (NSPS).

Subpart E—Post-Mining Areas

- 434.50 Applicability.
434.51 [Reserved].
434.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
434.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
434.54 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]
434.55 New Source Performance Standards (NSPS).

Subpart F—Miscellaneous Provisions

- 434.60 Applicability.
434.61 Commingling of waste streams.
434.62 Alternate effluent limitations for pH.
434.63 Effluent limitations during precipitation events.
434.64 Procedure and method detection limit for measurement of settleable solids.

Authority: Sections 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 United States 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.

Subpart A—General Provisions

§ 434.10 Applicability.

This part applies to discharges from any coal mine at which the extraction of coal is taking place or is planned to be undertaken and to coal preparation plants and associated areas.

§ 434.11 General definitions.

(a) The term "acid or ferruginous mine drainage" means mine drainage which, before any treatment, either has a pH of less than 6.0 or a total iron concentration equal to or more than 10 mg/l.

(b) The term "active mining area" means the areas, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term

excludes coal preparation plants, coal preparation plant associated areas and post-mining areas.

(c) The term "alkaline mine drainage" means mine drainage which, before any treatment, has a pH equal to or more than 6.0 and a total iron concentration of less than 10 mg/l.

(d) The term "bond release" means the time at which the appropriate regulatory authority returns a reclamation or performance bond based upon its determination that reclamation work (including, in the case of underground mines, mine sealing and abandonment procedures) has been satisfactorily completed.

(e) The term "coal preparation plant" means a facility where coal is subjected to cleaning, concentrating, or other processing or preparation in order to separate coal from its impurities and then is loaded for transit to a consuming facility.

(f) The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles, and coal storage piles and facilities.

(g) The term "coal preparation plant water circuit" means all pipes, channels, basins, tanks, and all other structures and equipment that convey, contain, treat, or process any water that is used in coal preparation processes within a coal preparation plant.

(h) The term "mine drainage" means any drainage, and any water pumped or siphoned, from an active mining area or a post-mining area.

(i) The abbreviation "ml/l" means milliliters per liter.

(j)(1) Subject to subparagraph (2) of this paragraph, the term "new source coal mine" means a coal mine (excluding coal preparation plants and coal preparation plant associated areas):

(i) The construction of which is commenced after May 29, 1981 (the date of publication of the proposal of these regulations); or

(ii) Which is determined by the EPA Regional Administrator to constitute a "major alteration." In making this determination, the Regional Administrator shall take into account the occurrence of one or more of the following events, in connection with the mine for which the NPDES permit is being considered, after the date of proposal of applicable new source performance standards:

(A) A mine operation initiates extraction of a coal seam not previously extracted by that mine;

(B) A mine operation discharges into a drainage area not previously affected by wastewater discharges from the mine;

(C) A mine operation causes extensive new surface disruption;

(D) A mine operation initiates construction of a new shaft, stope, or drift;

(E) A mine operation acquires additional land or mineral rights;

(F) A mine operation makes significant capital investment in additional equipment or additional facilities; and

(G) Such other factors as the Regional Administrator deems relevant.

(2) No provision in this part shall be deemed to affect the classification as a new source, pursuant to EPA's promulgation of January 13, 1981 (46 FR 3136), of a coal mine on which construction began prior to May 29, 1981.

(k) The term "post-mining area" means: (1) A reclamation area or (2) the underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

(l) The term "reclamation area" means the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.

(m) The term "settleable solids" is that matter measured by the volumetric method specified in § 434.64.

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

(o) The terms "treatment facility" and "treatment system" mean all structures which contain, convey, and as necessary, chemically or physically treat coal mine drainage, coal preparation plant process wastewater, or drainage, from coal preparation plant associated areas, which remove pollutants regulated by this part from such waters. This includes all pipes, channels, ponds, basins, tanks and all other equipment serving such structures.

Subpart B—Coal Preparation Plant and Coal Preparation Plant Associated Areas

§ 434.20 Applicability.

The provisions of this subpart are applicable to discharges from coal preparation plants and coal preparation plant associated areas, as indicated, including discharges which are pumped,

siphoned, or drained from the coal preparation plant water circuit and coal storage, refuse storage, and ancillary areas related to the cleaning or beneficiation of coal of any rank including, but not limited to, bituminous, lignite, and anthracite.

§ 434.21 [Reserved]

§ 434.22 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 125.30-125.32, 40 CFR 401.17, and § 434.61, 434.62 and 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by any existing coal preparation plant and coal preparation plant associated areas subject to the provisions of this subpart after application of the best practicable control technology currently available if discharges from such point sources normally exhibit a pH of less than 6.0 prior to treatment:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, total	7.0	3.5
Manganese, total	4.0	2.0
TSS	70	35
pH	(¹)	(¹)

¹ Within the range of 6.0 to 9.0 at all times.

(b) Except as provided in 40 CFR 125.30-125.32, 40 CFR 401.17 and § 434.61 and 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by any existing coal preparation plant and coal preparation plant associated areas subject to the provisions of this subpart after application of the best practicable control technology currently available if discharges from such point sources normally exhibit a pH equal to or greater than 6.0 prior to treatment:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, total	7.0	3.5
TSS	70	35
pH	(¹)	(¹)

¹ Within the range of 6.0 to 9.0 at all times.

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

(a) Except as provided in 40 CFR 125.30-125.32, and §§ 434.61, 434.62 and 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by any existing coal preparation plant and coal preparation plant associated areas subject to the provisions of this subpart after application of the best available technology economically achievable if discharges from such point sources normally exhibit a pH of less than 6.0 prior to treatment:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, total	7.0	3.5
Manganese, total	4.0	2.0

(b) Except as provided in 40 CFR 125.30-125.32, and §§ 434.61 and 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by any existing coal preparation plant and coal preparation plant associated areas subject to the provisions of this subpart after application of the best available technology economically achievable if discharges from such point sources normally exhibit a pH equal to or greater than 6.0 prior to treatment:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, total	7.0	3.5

§ 434.24 [Reserved]

§ 434.25 New source performance standards (NSPS).

The following new source performance standards (NSPS) shall be achieved by any new source coal preparation plant and coal preparation plant associated areas, as indicated:

(a) Except as provided in paragraph (b) of this section, for new source coal preparation plants, there shall be no discharge of process wastewater

pollutants from the coal preparation plant water circuit to surface waters.

(b) An occasional discharge or purge of pollutants may occur when necessary to reduce the concentration of solids or process chemicals in the water circuit to a level which would not interfere with the preparation process or process equipment, provided that:

(1) Advance written notice must be submitted to the permitting authority and the permitting authority does not disapprove the discharge. Such notice shall include: (i) Description of the need for the discharge or purge; (ii) the period of discharge or purge including anticipated dates and times; (iii) an estimate of discharge volume; and (iv) the intended receiving area.

(2) The occasional purge or discharge, if discharged to waters of the United States, shall be subject to the limitations specified in § 434.23(a) if the discharge normally exhibits a pH of less than 6.0, and § 434.23(b) if the discharge normally exhibits a pH of 6.0 or greater. The operator shall have the burden of proof that the purge was necessary to reduce the concentration of solids or process chemicals in the water circuit to a level which would not interfere with the preparation process or process equipment. This paragraph shall not exempt a facility subject to this part from complying with the other effluent limitations and standards set forth in this part, as appropriate. The permitting authority may include in the permit a provision limiting the amount or frequency of the purge.

(c) Except as provided in 40 CFR 401.17 and §§ 434.61, 434.62 and 434.63 of this part, the following new sources performance standards shall apply for discharges from new source coal preparation plant associated areas:

NSPS EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days.
Iron, total	6.0	3.0
Manganese	4.0	2.0
TSS	70.0	35.0
pH	1	1

¹ Within the range 6.0 to 9.0 at all times.

Subpart C—Acid or Ferruginous Mine Drainage

§ 434.30 Applicability; description of the acid or ferruginous mine drainage subcategory.

The provisions of this subpart are

applicable to acid or ferruginous mine drainage from an active mining area resulting from the mining of coal of any rank including, but not limited to, bituminous, lignite, and anthracite.

§ 434.31 [Reserved]

§ 434.32 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 125.30–125.32, 40 CFR 401.17, and §§ 434.61, 434.62 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days.
Iron, total	7.0	3.5
Manganese, total	4.0	2.0
TSS	70.0	35.0
pH	(¹)	(¹)

¹ Within the range 6.0 to 9.0 at all times.

§ 434.33 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 125.30–125.32, 40 CFR 401.17, §§ 434.61, 434.62 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, Total	7.0	3.5
Manganese total	4.0	2.0

§ 434.34 [Reserved]

§ 434.35 New Source Performance Standards (NSPS)

(a) Except as provided in 40 CFR 401.17 §§ 434.61, 434.62 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following new source performance standards shall be achieved for any discharge from a new source subject to this subpart:

NSPS EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Iron, total	6.0	3.0
Manganese, total	4.0	2.0
TSS	70.0	35.0
pH	(¹)	(¹)

¹ Within the range 6.0 to 9.0 at all times.

Subpart D—Alkaline Mine Drainage

§ 434.40 Applicability; description of the alkaline mine drainage subcategory.

The provisions of this subpart are applicable to alkaline mine drainage from an active mining area resulting from the mining of coal of any rank including, but not limited to, bituminous, lignite, and anthracite.

§ 434.41 [Reserved]

§ 434.42 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 125.30–125.32, 40 CFR 401.17, § 434.61 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point

source subject to the provisions of this subpart after application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total.....	7.0	3.5
TSS.....	70.	35.
pH.....	(¹)	(¹)

¹Within the range 6.0 to 9.0 at all times.

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

(a) Except as provided in 40 CFR 125.30-125.32, § 434.61 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total.....	7.0	3.5

§ 434.44 [Reserved]

§ 434.45 New source performance standards (NSPS).

(a) Except as provided in 40 CFR 401.17 and § 434.61 and, with respect to mine drainage from surface areas of a coal mine and drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following new source performance standards shall be achieved for any discharge from a new source subject to this subpart:

NSPS EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total.....	6.0	3.0
TSS.....	70.0	35.0
pH.....	(¹)	(¹)

¹Within the range 6.0 to 9.0 at all times.

Subpart E—Post-Mining Area

§ 434.50 Applicability; The provisions of this subpart are applicable to discharges from post-mining areas.

§ 434.51 [Reserved]

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

(a) *Reclamation Areas.* The limitations in this subparagraph apply to discharges from reclamation areas until the performance bond issued to the facility by the appropriate SMCRA authority has been released.

(1) Except as provided in 40 CFR 125.30-125.32, 40 CFR 401.17 and §§ 434.61 and 434.63(b) of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point source subject to the provisions of this subsection after application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Settleable Solids.....	0.5ml/l	
pH.....	(¹)	(¹)

¹Within the range 6.0 to 9.0 at all times.

(b) *Underground Mine Drainage.* The limitations in this subparagraph apply to discharges from the underground workings of underground mines until SMCRA bond release.

(1) Except as provided in 40 CFR 125.30-125.32, 40 CFR 401.17 and §§ 434.61 and 434.62 and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the

concentration or quality of pollutants in acid or ferruginous mine drainage subject to the provisions of this subsection after application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total.....	7.0	3.5
Manganese, total.....	4.0	2.0
TSS.....	70.0	35.0
pH.....	(¹)	(¹)

¹Within the range 6.0 to 9.0 at all times.

(2) Except as provided in 40 CFR 125.30-125.32, 40 CFR 401.17, § 434.61 and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants in alkaline mine drainage subject to the provisions of this subsection after application of the best practicable control technology currently available:

BPT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total.....	7.0	3.5
TSS.....	70.0	35.0
pH.....	(¹)	(¹)

¹Within the range 6.0 to 9.0 at all times.

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

(a) *Reclamation Areas.* The limitations of this subsection apply to discharges from reclamation areas until SMCRA bond release.

(1) Except as provided in 40 CFR 125.30-125.32, and §§ 434.61 and 434.63(b) of this part, the following limitations establish the concentration or quality of pollutants which may be discharged by a point source subject to the provisions of this subsection after application of the best available technology economically achievable:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Settleable Solids	0.5 (ml/l)	

(b) *Underground Mine Drainage.* The limitations in this subsection apply to discharges from the underground workings of underground mines until SMCRA bond release.

(1) Except as provided in 40 CFR 125.30-125.32, and §§ 434.61, 434.62, and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants in acid or ferruginous mine drainage subject to the provisions of this subsection after application of the best available technology economically achievable:

BAT EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total	7.0	3.5
Manganese, total	4.0	2.0

(2) Except as provided in 40 CFR 125.30-125.32, and § 434.61, and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following limitations establish the concentration or quality of pollutants in alkaline mine drainage subject to the provisions of this subsection after application of the best available technology economically achievable:

BAT Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total	7.0	3.5

§ 434.54 [Reserved]

§ 434.55 New source performance standards (NSPS).

The following new source performance standards shall apply to the post-mining areas of all new source coal mines:

(a) *Reclamation Areas.* The standards of this subparagraph apply to discharges from reclamation areas at new source coal mines until SMCRA bond release.

(1) Except as provided in 40 CFR 401.17 and §§ 434.61 and 434.63(b) of this part, the following new source performance standards shall be achieved for a discharge subject to the provisions of this subparagraph:

NSPS Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Settleable Solids	0.5 ml/l	
pH	(¹)	

¹ Within the range of 6.0 to 9.0 at all times.

(b) *Underground Mine Drainage.* The standards in this subsection apply to discharges from the underground workings of new source underground mines until bond release.

(1) Except as provided in 40 CFR 401.17 and §§ 434.61, 434.62, and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following new source performance standards shall be achieved for the discharge of any acid or ferruginous mine drainage subject to this subparagraph:

NSPS Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total	6.0	3.0
Manganese, total	4.0	2.0
TSS	70.0	35.0
pH	(¹)	

¹ Within the range 6.0 to 9.0 at all times.

(2) Except as provided in 40 CFR 401.17, § 434.61, and, with respect to mine drainage from the underground workings of underground mines which is commingled with surface mine discharges, § 434.63 of this part, the following new source performance standards shall be achieved for the discharge of any alkaline mine drainage subject to this subparagraph:

NSPS Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
Concentration in mg/l		
Iron, total	6.0	3.0

NSPS Effluent Limitations—Continued

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
TSS	70.0	35.0
pH	(¹)	(¹)

¹ Within the range 6.0 to 9.0 at all times.

Subpart F—Miscellaneous Provisions

§ 434.60 Applicability.

The provisions of this Subpart apply to this part as specified in Subparts B, C, D, and E.

§ 434.61 Commingling of waste streams.

Where waste streams from any facility covered by this Part are combined for treatment or discharge with waste streams from another facility covered by this Part, the concentration of each pollutant in the combined discharge may not exceed the most stringent limitations for that pollutant applicable to any component waste stream of the discharge.

§ 434.62 Alternate effluent limitation for pH.

Where the application of neutralization and sedimentation treatment technology results in inability to comply with the otherwise applicable manganese limitations, the permit issuer may allow the pH level in the final effluent to exceed 9.0 to a small extent in order that the manganese limitations can be achieved.

§ 434.63 Effluent limitations for precipitation events.

(a) Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitations instead of the otherwise applicable limitations:

EFFLUENT LIMITATIONS DURING PRECIPITATION

Pollutant or pollutant property	Maximum for any 1 day (ml/l)	Average of daily values for 30 consecutive days
Settleable Solids	0.5	
pH	(¹)	(¹)

¹ Within the range of 6.0 to 9.0 at all times.

(b) Any discharge or increase in volume of a discharge caused by precipitation within any 24 hour period greater than the 10-year, 24-hour precipitation event (or series of storms of snowmelt of equivalent volume) may comply with the following limitations

instead of the otherwise applicable limitations:

EFFLUENT LIMITATIONS DURING PRECIPITATION

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
pH	(¹)	(¹)

¹ Within the range of 6.0 to 9.0 at all times.

(c) The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event described in paragraph (a) and (b) of this section.

§ 434.64 Determination of settleable solids.

For the purposes of this part, the following procedure shall be used to determine settleable solids:

(a) Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating materials occurs, do not include the floating material in the reading.

(b) Notwithstanding any provision of 40 CFR Part 136, the method detection limit for measuring settleable solids under this part shall be 0.4 ml/l.

Appendixes

Note.—These appendixes will not appear in the CFR.

Appendix A—Abbreviations, Acronyms and Units Used in This Notice

Act—The Clean Water Act.
 Agency—The United States Environmental Protection Agency.
 BATD—Best Available Demonstrated Technology under Sections 304(c) and 306 of the Act.
 BAT (BAT)—The Best Available Technology Economically Achievable, under Section 304(b)(2)(B) of the Act.
 BCT (BCT)—The Best Conventional Pollutant Control Technology, under Section 304(b)(4) of the Act.
 BMP—Best Management Practices under Section 304(e) of the Act.
 BOD—Biochemical Oxygen Demand.
 BPT (BPTA)—The Best Practicable Control Technology Currently Available under Section 304(b)(1) of the Act.
 CWA—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 et seq.), as amended by the Clean Water Act of 1977 (Pub. L. 95-217).
 FWPCA—Federal Water Pollution Control Act.
 NPDES Permit—A National Pollutant Discharge Elimination System permit issued under Section 402 of the Act.
 NSPS—New Source Performance Standards under Section 306 of the Act.

OSM—Department of Interior, Office of Surface Mining Reclamation and Enforcement.

POTW—Publicly Owned Treatment

Works.

PSES—Pretreatment Standards for Existing Sources of indirect discharges, under Section 307(b) of the Clean Water Act.

PSNS—Pretreatment Standards for New Sources of indirect discharges, under Section 307 (b) and (c) of the Clean Water Act.

RCRA—Resource Conservation and Recovery Act (Pub. L. 94-580) of 1976, Amendments to Solid Waste Disposal Act.
 SMCRA—Surface Mining Control and Reclamation Act of 1977 (Pub. L. 95-87, 30 U.S.C. 1201 et seq.).

SS—Settleable Solids.

TSS—Total Suspended Solids.

UNITS g/kg—gram(s) per kilogram; gps—gallons per day; mgd—million gallons per day; mg/l—milligram(s) per liter; ug/l microgram(s) per liter; ml/l—milliliter(s) per liter.

Appendix B—Priority Organics Not Detected in Treated Effluents of Screening and Verification Samples

1. acenaphthene
2. acrolein
3. acrylonitrile
4. benzidine
5. carbon tetrachloride (tetrachloromethane)
6. chlorobenzene
7. 1,2,4,-trichlorobenzene
8. hexachlorobenzene
9. 1,1-dichloroethane
10. 1,1,2-trichloroethane
11. chloroethane
12. bis(chloromethyl) ether
13. bis(2-chloroethyl) ether
14. 2-chloroethyl vinyl ether (mixed)
15. 2-chloronaphthalene
16. 2,4,6-trichlorophenol
17. parachlorometa cresol
18. 2-chlorophenol
19. 1,3-dichlorobenzene
20. 2,4-dichlorophenol
21. 1,2-dichloropropane
22. 1,2-dichloropropylene (1,3-dichloropropene)
23. 2,4-dimethylphenol
24. 2,4-dinitrotoluene
25. 2,6-dinitrotoluene
26. 1,2-diphenylhydrazine
27. bis(2-chloroisopropyl) ether
28. 4-chlorophenyl phenyl ether
29. 4-bromophenyl phenyl ether
30. methyl chloride (chloromethane)
31. methyl bromide (bromomethane)
32. bromoform (tribromomethane)
33. dichlorobromomethane
34. dichlorodifluoromethane
35. chlorodibromomethane
36. hexachlorobutadiene
37. hexachlorocyclopentadiene
38. isophorone
39. nitrobenzene
40. 2-nitrophenol
41. 4-nitrophenol
42. dimethyl phthalate
43. N-nitrosodimethylamine
44. N-nitrosodiphenylamine
45. N-nitrosodi-n-propylamine
46. benzo(a)pyrene
47. 3,4-benzofluoranthene

48. benzo(k)fluoranthene(11, 12-benzofluoranthene)
49. acenaphthylene
50. vinyl chloride (chloroethylene)
51. dieldrin
52. chlordane (technical mixture and metabolites)
53. 4,4'-DDE (p,p-DDX)
54. a-endosulfan-Alpha
55. b-endosulfan-Beta
56. endosulfan sulfate
57. endrin
58. endrin aldehyde
59. PCB 1242 (Arochlor 1242)
60. PCB 1254 (Arochlor 1254)
61. PCB 1221 (Arochlor 1221)
62. PCB 1232 (Arochlor 1232)
63. PCB 1248 (Arochlor 1248)
64. PCB 1260 (Arochlor 1260)
65. PCB 1016 (Arochlor 1016)
66. toxaphene
67. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Appendix C—Priority Organics Detected in Treated Effluents at One or Two Mines Always at Levels Below 10 ug/l

1. 1,2-dichloroethane
2. hexachloroethane
3. 1,1,2,2-tetrachloroethane
4. 1,4-dichlorobenzene
5. 3,3'-dichlorobenzidine
6. fluoranthene
7. bis(2-chloroethoxy) methane
8. 2,4-dinitrophenol
9. 4,6-dinitro-o-cresol
10. pentachlorophenol
11. di-n-octyl phthalate
12. benzo(a)anthracene
13. chrysene
14. anthracene
15. fluorene
16. phenanthrene
17. pyrene
18. benzo(g,h,i)perylene
19. aldrin
20. 4,4'-DDT
21. 4,4'-DDD
22. heptachlor
23. heptachlor epoxide

Appendix D—Priority Organics Detected But Present Due to Contamination of Screening and Verification Samples by Sources Other Than Those Sampled

1. benzene
2. chloroform
3. methylene chloride
4. phenol
5. bis(2-ethylhexyl) phthalate
6. butyl benzyl phthalate
7. di-n-butyl phthalate
8. diethyl phthalate
9. toluene
10. tetrachloroethylene

Appendix E—Priority Organics Detected But Present in Amounts Too Small To Be Effectively Reduced

1. 1,1,1-trichloroethane
2. 1,1-dichloroethylene
3. 1,2-trans-dichloroethylene
4. ethylbenzene
5. trichlorofluoromethane
6. trichloroethylene
7. 1,2-dichlorobenzene

8. naphthalene
9. dibenzo(a,h)anthracene
10. indeno(1,2,3-c,d)pyrene
11. BHC-Alpha
12. BHC-Beta
13. BHC-Gamma
14. BHC-Delta

Appendix F—Priority Metals Detected But At Levels Too Small To Be Effectively Reduced

1. antimony
2. beryllium
3. cadmium

4. silver
5. thallium

Appendix G—Priority Metals Detected But Effectively Controlled By BPT Technology

1. arsenic
2. chromium
3. copper
4. lead
5. mercury
6. nickel
7. selenium
8. zinc

Appendix H—Other Priority Pollutants Excluded

1. Cyanide—detected in six treated effluents, although at or below accepted levels of analytical precision.
2. Chrysotile asbestos—detected at levels where the analytical method used to measure asbestos is imprecise. The Agency will re-examine, if necessary, levels of chrysotile asbestos when the method is refined.

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